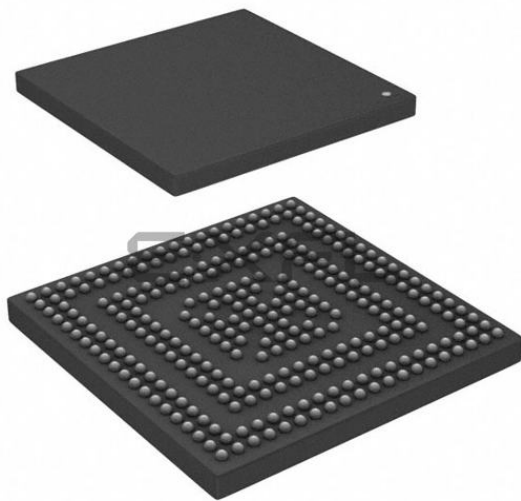




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## What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

## Applications of "[Embedded - Microcontrollers](#)"

### Details

|                            |                                                                                                                                                                                       |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Status             | Discontinued at Digi-Key                                                                                                                                                              |
| Core Processor             | TriCore™                                                                                                                                                                              |
| Core Size                  | 32-Bit Single-Core                                                                                                                                                                    |
| Speed                      | 200MHz                                                                                                                                                                                |
| Connectivity               | ASC, CANbus, FlexRay, MLI, MSC, SSC                                                                                                                                                   |
| Peripherals                | DMA, POR, WDT                                                                                                                                                                         |
| Number of I/O              | 128                                                                                                                                                                                   |
| Program Memory Size        | 3MB (3M x 8)                                                                                                                                                                          |
| Program Memory Type        | FLASH                                                                                                                                                                                 |
| EEPROM Size                | 192K x 8                                                                                                                                                                              |
| RAM Size                   | 288K x 8                                                                                                                                                                              |
| Voltage - Supply (Vcc/Vdd) | 1.17V ~ 3.63V                                                                                                                                                                         |
| Data Converters            | A/D 8x10b, 44x12b                                                                                                                                                                     |
| Oscillator Type            | External                                                                                                                                                                              |
| Operating Temperature      | -40°C ~ 125°C (TA)                                                                                                                                                                    |
| Mounting Type              | Surface Mount                                                                                                                                                                         |
| Package / Case             | 292-LFBGA                                                                                                                                                                             |
| Supplier Device Package    | PG-LFBGA-292-6                                                                                                                                                                        |
| Purchase URL               | <a href="https://www.e-xfl.com/product-detail/infineon-technologies/tc1791n384f200epabkxuma1">https://www.e-xfl.com/product-detail/infineon-technologies/tc1791n384f200epabkxuma1</a> |

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# Microcontrollers

| Type                                          | Ordering Code | Orderable Part Number | Package       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------|---------------|-----------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Microcontrollers, 16-bit</b>               |               |                       |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>XC2000 Family<br/>XC22xx Series (Body)</b> |               |                       |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| SAK-XC2220U-8F40V<br>AA-Step                  | SP000846742   | XC2220U8F40VAAKXUMA1  | PG-VQFN-48-54 | 16/32-bit single-chip microcontroller with 32-bit performance XC2200 family/Compact Line High performance CPU with 5-stage pipeline, 64-Kbyte on-chip program memory, 4-Kbyte on-chip program/data SRAM (PSRAM), 1024 bytes on-chip special function register area (C166 family compatible), programmable watchdog timer and oscillator watchdog, capture/compare unit (CCU6), 10-channel 12-Bit A/D converter, two serial interface channels, 40-MHz clock frequency, -40°C to 125°C, tape & reel |
| SAK-XC2210U-4F40R<br>AA-Step                  | SP000858094   | XC2210U4F40RAAKXUMA1  | PG-TSSOP-38-8 | 16/32-bit single-chip microcontroller with 32-bit performance XC2200 family/Compact Line High performance CPU with 5-stage pipeline, 32-Kbyte on-chip program memory, 8-Kbyte on-chip program/data SRAM (PSRAM), 1024 bytes on-chip special function register area (C166 family compatible), programmable watchdog timer and oscillator watchdog, capture/compare unit (CCU6), 8-channel 12-Bit A/D converter, two serial interface channels, 40-MHz clock frequency, -40°C to 125°C, tape & reel  |
| ▼ SAK-XC2220U-4F40V<br>AA-Step                | SP000858088   | XC2220U4F40VAAKFUMA1  | PG-VQFN-48-54 | as SAK-XC2210U-4F40R VQFN package                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SAK-XC2224L-20F66V<br>AA-Step                 | SP000846740   | XC2224L20F66VAAKXUMA1 | PG-VQFN-48-54 | as SAK-XC2220U-8F40L, Econo Line 160-Kbyte on-chip program memory, four serial interface channels, 66-MHz clock frequency, -40°C to 125°C, tape & reel                                                                                                                                                                                                                                                                                                                                             |

SMD = Surface Mounted Device

# Microcontrollers

| Type                            | Ordering Code | Orderable Part Number   | Package        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|---------------|-------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Microcontrollers, 16-bit</b> |               |                         |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>XC2000 Family</b>            |               |                         |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>XC229x Series (Body)</b>     |               |                         |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SAK-XC2298H-200F100L<br>AB-Step | SP000844810   | XC2298H200F100LABKXUMA1 | PG-LQFP-176-12 | 16/32-bit single-chip microcontroller with 32-bit performance XC2200 family/<br>High Line<br>High performance CPU with 5-stage pipeline, 1,600-Kbyte on-chip program memory, 112-Kbyte on-chip program/data SRAM (PSRAM), 1024 bytes on-chip special function register area (C166 family compatible), programmable watchdog timer and oscillator watchdog, four capture/compare unit (CCU6), 16 + 14-channel 10-Bit A/D converter, six Full-CAN nodes, ten serial interface channels, 100-MHz clock frequency, -40°C to 125°C, tape & reel |
| SAK-XC2299H-200F100L<br>AB-Step | SP000761326   | XC2299H200F100LABKXUMA1 | PG-LQFP-176-12 | as SAK-XC2298H-200F100L, High Line<br>two FlexRay™ nodes, tape & reel                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

SMD = Surface Mounted Device

| Type | Ordering Code | Orderable Part Number | Package | Data     |                  |              |       |
|------|---------------|-----------------------|---------|----------|------------------|--------------|-------|
|      |               |                       |         | $V_{DS}$ | $R_{DS(on) max}$ | $V_{GS(th)}$ | $I_D$ |
|      |               |                       |         | V        | mΩ               | V            | A     |

**Automotive N-Channel MOSFETs****40V**

(cont'd)

|                   |             |                     |              |    |          |             |     |
|-------------------|-------------|---------------------|--------------|----|----------|-------------|-----|
| IPG20N04S4L-07    | SP000705484 | IPG20N04S4L07ATMA1  | PG-TDSON-8-4 | 40 | 2 x 7.2  | 1.2 ... 2.2 | 20  |
| IPG20N04S4L-08    | SP000705576 | IPG20N04S4L08ATMA1  | PG-TDSON-8-4 | 40 | 2 x 8.2  | 1.2 ... 2.2 | 20  |
| IPG20N04S4-08     | SP000705582 | IPG20N04S408ATMA1   | PG-TDSON-8-4 | 40 | 2 x 7.6  | 2.0 ... 4.0 | 20  |
| IPG20N04S4-09     | SP000705570 | IPG20N04S409ATMA1   | PG-TDSON-8-4 | 40 | 2 x 8.6  | 2.0 ... 4.0 | 20  |
| IPG20N04S4L-11    | SP000705564 | IPG20N04S4L11ATMA1  | PG-TDSON-8-4 | 40 | 2 x 11.6 | 1.2 ... 2.2 | 20  |
| IPG20N04S4-12     | SP000705560 | IPG20N04S412ATMA1   | PG-TDSON-8-4 | 40 | 2 x 12.2 | 2.0 ... 4.0 | 20  |
| IPI120N04S4-01    | SP000705722 | IPI120N04S401AKSA1  | PG-TO262-3-1 | 40 | 1.5      | 2.0 ... 4.0 | 120 |
| IPI120N04S4-02    | SP000764742 | IPI120N04S402AKSA1  | PG-TO262-3-1 | 40 | 1.8      | 2.0 ... 4.0 | 120 |
| IPI90N04S4-04     | SP000646194 | IPI90N04S402AKSA1   | PG-TO262-3-1 | 40 | 2.1      | 2.0 ... 4.0 | 90  |
| ■ IPI120N04S3-02  | SP000261225 | IPI120N04S302AKSA1  | PG-TO262-3-1 | 40 | 2.3      | 2.1 ... 4.0 | 120 |
| IPI100N04S4-H2    | SP000711282 | IPI100N04S4H2AKSA1  | PG-TO262-3-1 | 40 | 2.4      | 2.0 ... 4.0 | 100 |
| ■ IPI100N04S4-03M | SP000850484 | IPI100N04S403DXKSA1 | PG-TO262-3-1 | 40 | 2.5      | 2.1 ... 4.0 | 100 |
| IPI100N04S3-03    | SP000465798 | IPI100N04S303MATMA2 | PG-TO262-3-1 | 40 | 2.5      | 2.0 ... 4.0 | 100 |
| ■ IPI80N04S3-03   | SP000261238 | IPI80N04S303AKSA1   | PG-TO262-3-1 | 40 | 3.0      | 2.1 ... 4.0 | 80  |
| ■ IPI100N04S3-03  | SP000261223 | IPI100N04S303AKSA1  | PG-TO262-3-1 | 40 | 3.3      | 2.1 ... 4.0 | 100 |
| IPI80N04S4-03     | SP000671634 | IPI80N04S403AKSA1   | PG-TO262-3-1 | 40 | 3.3      | 2.0 ... 4.0 | 80  |
| IPI80N04S2-04     | SP000219058 | IPI80N04S204AKSA1   | PG-TO262-3-1 | 40 | 3.7      | 2.1 ... 4.0 | 80  |
| IPI80N04S2-H4     | SP000218171 | IPI80N04S2H4AKSA1   | PG-TO262-3-1 | 40 | 4.0      | 2.1 ... 4.0 | 80  |
| IPI80N04S4L-04    | SP000646192 | IPI80N04S4L04AKSA1  | PG-TO262-3-1 | 40 | 4.0      | 1.2 ... 2.0 | 80  |
| IPI80N04S4-04     | SP000646190 | IPI80N04S404AKSA1   | PG-TO262-3-1 | 40 | 4.2      | 2.0 ... 4.0 | 80  |
| ■ IPI80N04S3-04   | SP000261226 | IPI80N04S304AKSA1   | PG-TO262-3-1 | 40 | 4.3      | 2.1 ... 4.0 | 80  |
| ■ IPI80N04S3-H4   | SP000415630 | IPI80N04S3H4AKSA1   | PG-TO262-3-1 | 40 | 4.8      | 2.1 ... 4.0 | 80  |
| IPI70N04S4-06     | SP000711484 | IPI70N04S406AKSA1   | PG-TO262-3-1 | 40 | 6.2      | 2.0 ... 4.0 | 70  |
| ■ IPI80N04S3-06   | SP000261237 | IPI80N04S306AKSA1   | PG-TO262-3-1 | 40 | 6.3      | 2.1 ... 4.0 | 80  |
| ■ IPI70N04S3-03   | SP000279551 | IPI70N04S307AKSA1   | PG-TO262-3-1 | 40 | 6.8      | 2.1 ... 4.0 | 70  |
| IPP120N04S4-01    | SP000705704 | IPP120N04S401AKSA1  | PG-TO220-3-1 | 40 | 1.5      | 2.0 ... 4.0 | 120 |
| IPP120N04S4-02    | SP000764734 | IPP120N04S402AKSA1  | PG-TO220-3-1 | 40 | 1.8      | 2.0 ... 4.0 | 120 |
| IPP90N04S4-02     | SP000646200 | IPP90N04S402AKSA1   | PG-TO220-3-1 | 40 | 2.1      | 2.0 ... 4.0 | 90  |
| ■ IPP120N04S3-02  | SP000261228 | IPP120N04S302AKSA1  | PG-TO220-3-1 | 40 | 2.3      | 2.1 ... 4.0 | 120 |
| IPP100N04S4-H2    | SP000711278 | IPP100N04S4H2AKSA1  | PG-TO220-3-1 | 40 | 2.4      | 2.0 ... 4.0 | 100 |
| IPP100N04S3-03    | SP000850486 | IPP100N04S403DXKSA1 | PG-TO220-3-1 | 40 | 2.5      | 2.0 ... 4.0 | 100 |
| ■ IPP80N04S3-03   | SP000261229 | IPP80N04S303AKSA1   | PG-TO220-3-1 | 40 | 3.0      | 2.1 ... 4.0 | 80  |
| IPP80N04S2L-03    | SP000219063 | IPP80N04S2L03AKSA1  | PG-TO220-3-1 | 40 | 3.3      | 1.2 ... 2.0 | 80  |
| IPP100N04S2L-03   | SP000219062 | IPP100N04S2L03AKSA1 | PG-TO220-3-1 | 40 | 3.3      | 1.2 ... 2.0 | 100 |
| IPP100N04S2-04    | SP000219056 | IPP100N04S204AKSA1  | PG-TO220-3-1 | 40 | 3.3      | 2.1 ... 4.0 | 100 |
| ■ IPP100N04S3-03  | SP000261227 | IPP100N04S303AKSA1  | PG-TO220-3-1 | 40 | 3.3      | 2.1 ... 4.0 | 100 |
| IPP80N04S4-03     | SP000671756 | IPP80N04S403AKSA1   | PG-TO220-3-1 | 40 | 3.3      | 2.0 ... 4.0 | 80  |
| IPP80N04S2-04     | SP000219054 | IPP80N04S204AKSA1   | PG-TO220-3-1 | 40 | 3.4      | 2.1 ... 4.0 | 80  |
| IPP80N04S2-H4     | SP000218169 | IPP80N04S2H4AKSA1   | PG-TO220-3-1 | 40 | 4.0      | 2.1 ... 4.0 | 80  |
| IPP80N04S4L-04    | SP000646198 | IPP80N04S4L04AKSA1  | PG-TO220-3-1 | 40 | 4.0      | 1.2 ... 2.0 | 80  |
| IPP80N04S4-04     | SP000646196 | IPP80N04S404AKSA1   | PG-TO220-3-1 | 40 | 4.2      | 2.0 ... 4.0 | 80  |
| ■ IPP80N04S3-04   | SP000261230 | IPP80N04S304AKSA1   | PG-TO220-3-1 | 40 | 4.3      | 2.1 ... 4.0 | 80  |
| ■ IPP80N04S3-H4   | SP000415702 | IPP80N04S3H4AKSA1   | PG-TO220-3-1 | 40 | 4.3      | 2.1 ... 4.0 | 80  |
| IPP70N04S4-06     | SP000711480 | IPP70N04S406AKSA1   | PG-TO220-3-1 | 40 | 6.2      | 2.0 ... 4.0 | 70  |
| ■ IPP70N04S3-07   | SP000279559 | IPP70N04S307AKSA1   | PG-TO220-3-1 | 40 | 6.2      | 2.1 ... 4.0 | 80  |
| ■ IPP80N04S3-06   | SP000261233 | IPP80N04S306AKSA1   | PG-TO220-3-1 | 40 | 6.3      | 2.1 ... 4.0 | 80  |

SMD = Surface Mounted Device

| Type | Ordering Code | Orderable Part Number | Package | Data     |                  |              |       |
|------|---------------|-----------------------|---------|----------|------------------|--------------|-------|
|      |               |                       |         | $V_{DS}$ | $R_{DS(on) max}$ | $V_{GS(th)}$ | $I_D$ |
|      |               |                       |         | V        | mΩ               | V            | A     |

**Automotive N-Channel MOSFETs****55V**

(cont'd)

|                |             |                    |              |    |     |             |    |
|----------------|-------------|--------------------|--------------|----|-----|-------------|----|
| IPP80N06S2L-11 | SP000218175 | IPP80N06S2L11AKSA1 | PG-TO220-3-1 | 55 | 11  | 1.2 ... 2.0 | 80 |
| IPP77N06S2-12  | SP000218172 | IPP77N06S212AKSA1  | PG-TO220-3-1 | 55 | 12  | 2.1 ... 4.0 | 77 |
| ■ SPB80N06S-08 | SP000084808 | SPB80N06S08ATMA1   | PG-TO263-3-2 | 55 | 7.7 | 2.1 ... 4.0 | 80 |
| SPP80N06S-08   | SP000084810 | SPP80N06S08AKSA1   | PG-TO220-3-1 | 55 | 7.7 | 2.1 ... 4.0 | 80 |

**60V**

|                |             |                    |               |    |          |             |     |
|----------------|-------------|--------------------|---------------|----|----------|-------------|-----|
| IPB180N06S4-H1 | SP001028786 | IPB180N06S4H1ATMA2 | PG-TO263-7-3  | 60 | 1.7      | 2.0 ... 4.0 | 180 |
| IPB120N06S4-H1 | SP001028782 | IPB120N06S4H1ATMA2 | PG-TO263-3-2  | 60 | 2.1      | 2.0 ... 4.0 | 120 |
| IPB120N06S4-02 | SP001028776 | IPB120N06S402ATMA2 | PG-TO263-3-2  | 60 | 2.4      | 2.0 ... 4.0 | 120 |
| IPB120N06S4-03 | SP001028770 | IPB120N06S403ATMA2 | PG-TO263-3-2  | 60 | 2.8      | 2.0 ... 4.0 | 120 |
| IPB90N06S4L-04 | SP001028756 | IPB90N06S4L04ATMA2 | PG-TO263-3-2  | 60 | 3.4      | 1.2 ... 2.2 | 90  |
| IPB90N06S4-04  | SP001028754 | IPB90N06S404ATMA2  | PG-TO263-3-2  | 60 | 3.7      | 2.0 ... 4.0 | 90  |
| IPB80N06S4L-05 | SP001028720 | IPB80N06S4L05ATMA2 | PG-TO263-3-2  | 60 | 4.8      | 1.2 ... 2.2 | 80  |
| IPB80N06S4-05  | SP001028718 | IPB80N06S405ATMA2  | PG-TO263-3-2  | 60 | 5.4      | 2.0 ... 4.0 | 80  |
| IPB80N06S4-07  | SP001028672 | IPB80N06S407ATMA2  | PG-TO263-3-2  | 60 | 7.1      | 2.0 ... 4.0 | 80  |
| IPB80N06S4L-07 | SP001028674 | IPB80N06S4L07ATMA2 | PG-TO263-3-2  | 60 | 6.4      | 1.2 ... 2.2 | 80  |
| IPB45N06S4L-08 | SP001028654 | IPB45N06S4L08ATMA2 | PG-TO263-3-2  | 60 | 8.2      | 1.2 ... 2.2 | 45  |
| IPB45N06S4-09  | SP001028652 | IPB45N06S409ATMA2  | PG-TO263-3-2  | 60 | 9.1      | 2.0 ... 4.0 | 45  |
| IPD100N06S4-03 | SP001028766 | IPD100N06S403ATMA2 | PG-TO252-3-11 | 60 | 3.5      | 2.0 ... 4.0 | 100 |
| IPD90N06S4L-03 | SP001028764 | IPD90N06S4L03ATMA2 | PG-TO252-3-11 | 60 | 3.5      | 1.2 ... 2.2 | 90  |
| IPD90N06S4-04  | SP001028762 | IPD90N06S404ATMA2  | PG-TO252-3-11 | 60 | 3.8      | 2.0 ... 4.0 | 90  |
| IPD90N06S4L-05 | SP001028748 | IPD90N06S4L05ATMA2 | PG-TO252-3-11 | 60 | 4.6      | 1.2 ... 2.2 | 90  |
| IPD90N06S4-05  | SP001028730 | IPD90N06S405ATMA2  | PG-TO252-3-11 | 60 | 5.1      | 2.0 ... 4.0 | 90  |
| IPD90N06S4L-06 | SP001028682 | IPD90N06S4L06ATMA2 | PG-TO252-3-11 | 60 | 6.1      | 1.2 ... 2.2 | 90  |
| IPD90N06S4-07  | SP001028680 | IPD90N06S407ATMA2  | PG-TO252-3-11 | 60 | 6.9      | 2.0 ... 4.0 | 90  |
| IPD50N06S4L-08 | SP001028664 | IPD50N06S4L08ATMA2 | PG-TO252-3-11 | 60 | 7.9      | 1.2 ... 2.2 | 50  |
| IPD50N06S4-09  | SP001028662 | IPD50N06S409ATMA2  | PG-TO252-3-11 | 60 | 9.0      | 2.0 ... 4.0 | 50  |
| IPD50N06S4L-12 | SP001028640 | IPD50N06S4L12ATMA2 | PG-TO252-3-11 | 60 | 12       | 1.2 ... 2.2 | 50  |
| IPD30N06S4L-23 | SP001028638 | IPD30N06S4L23ATMA2 | PG-TO252-3-11 | 60 | 23       | 1.2 ... 2.2 | 30  |
| IPD25N06S4L-30 | SP001028636 | IPD25N06S4L30ATMA2 | PG-TO252-3-11 | 60 | 30       | 1.2 ... 2.2 | 25  |
| IPG20N06S4L-11 | SP000705550 | IPG20N06S4L11ATMA1 | PG-TDSON-8-4  | 60 | 2 x 11.2 | 1.2 ... 2.2 | 20  |
| IPG20N06S4L-14 | SP001028632 | IPG20N06S4L14ATMA2 | PG-TDSON-8-4  | 60 | 2 x 13.7 | 1.2 ... 2.2 | 20  |
| IPG20N06S4-15  | SP001028634 | IPG20N06S415ATMA2  | PG-TDSON-8-4  | 60 | 2 x 15.5 | 2.0 ... 4.0 | 20  |
| IPG20N06S4L-26 | SP000705588 | IPG20N06S4L26ATMA1 | PG-TDSON-8-4  | 60 | 2 x 26   | 1.2 ... 2.2 | 20  |
| IPI120N06S4-H1 | SP001028784 | IPI120N06S4H1AKSA2 | PG-TO262-3-1  | 60 | 2.4      | 2.0 ... 4.0 | 120 |
| IPI120N06S4-02 | SP001028778 | IPI120N06S402AKSA2 | PG-TO262-3-1  | 60 | 2.8      | 2.0 ... 4.0 | 120 |
| IPI120N06S4-03 | SP001028772 | IPI120N06S403AKSA2 | PG-TO262-3-1  | 60 | 3.1      | 2.0 ... 4.0 | 120 |
| IPI90N06S4L-04 | SP001028760 | IPI90N06S4L04AKSA2 | PG-TO262-3-1  | 60 | 3.7      | 1.2 ... 2.2 | 90  |

SMD = Surface Mounted Device

# Power Semiconductors

| Type | Ordering Code | Orderable Part Number | Package | Data     |                  |              |       |
|------|---------------|-----------------------|---------|----------|------------------|--------------|-------|
|      |               |                       |         | $V_{DS}$ | $R_{DS(on) max}$ | $V_{GS(th)}$ | $I_D$ |
|      |               |                       |         | V        | mΩ               | V            | A     |

## N-Channel MOSFETs

### 100V

|                  |             |                        |                         |     |      |             |     |
|------------------|-------------|------------------------|-------------------------|-----|------|-------------|-----|
| BSB056N10NN3 G   | SP000604540 | BSB056N10NN3GXUMA1     | CanPAK™ M-size          | 100 | 5.6  | 2.0 ... 3.5 | 83  |
| BSC046N10NS3 G   | SP000907922 | BSC046N10NS3GATMA1     | SuperSO8                | 100 | 4.6  | 2.0 ... 3.5 | 100 |
| BSC060N10NS3 G   | SP000446584 | BSC060N10NS3GATMA1     | SuperSO8                | 100 | 6.0  | 2.0 ... 3.5 | 90  |
| BSC070N10NS3 G   | SP000778082 | BSC070N10NS3GATMA1     | SuperSO8                | 100 | 7.0  | 2.0 ... 3.5 | 90  |
| ■ BSC079N10NS G  | SP000379590 | BSC079N10NSGATMA1      | SuperSO8                | 100 | 7.9  | 2.0 ... 4.0 | 100 |
| BSC082N10LS G    | SP000379609 | BSC082N10LSGATMA1      | SuperSO8                | 100 | 8.2  | 1.2 ... 2.4 | 100 |
| ■ BSC100N10NSF G | SP000379595 | BSC100N10NSFGATMA1     | SuperSO8                | 100 | 10   | 2.0 ... 4.0 | 90  |
| BSC105N10LSF G   | SP000388502 | BSC105N10LSFGATMA1     | SuperSO8                | 100 | 10.5 | 1.2 ... 2.4 | 90  |
| BSC109N10NS3 G   | SP000778132 | BSC109N10NS3GATMA1     | SuperSO8                | 100 | 10.9 | 2.0 ... 3.5 | 63  |
| BSC118N10NS G    | SP000379599 | BSC118N10NSGATMA1      | SuperSO8                | 100 | 11.8 | 2.0 ... 4.0 | 71  |
| BSC123N10LS G    | SP000379612 | BSC123N10LSGATMA1      | SuperSO8                | 100 | 12.3 | 1.2 ... 2.4 | 71  |
| ■ BSC152N10NSF G | SP000379601 | BSC152N10NSFGATMA1     | SuperSO8                | 100 | 15.2 | 2.0 ... 4.0 | 63  |
| BSC159N10LSF G   | SP000379614 | BSC159N10LSFGATMA1     | SuperSO8                | 100 | 15.9 | 1.2 ... 2.4 | 63  |
| BSC160N10NS3 G   | SP000482382 | BSC160N10NS3GATMA1     | SuperSO8                | 100 | 16   | 2.0 ... 3.5 | 42  |
| BSC196N10NS G    | SP000379604 | BSC196N10NSGATMA1      | SuperSO8                | 100 | 19.6 | 2.0 ... 4.0 | 45  |
| BSC205N10LS G    | SP000379616 | BSC205N10LSGATMA1      | SuperSO8                | 100 | 20.5 | 1.2 ... 2.4 | 45  |
| BSC252N10NSF G   | SP000379608 | BSC252N10NSFGATMA1     | SuperSO8                | 100 | 25.2 | 2.0 ... 4.0 | 39  |
| BSC265N10LSF G   | SP000379618 | BSC265N10LSFGATMA1     | SuperSO8                | 100 | 26.5 | 1.2 ... 2.4 | 40  |
| BSC440N10NS3 G   | SP000482420 | BSC440N10NS3GATMA1     | SuperSO8                | 100 | 44   | 2.0 ... 3.5 | 18  |
| BSC750N10ND G    | SP000359610 | BSC750N10NDGATMA1      | SuperSO8 dual           | 100 | 75   | 2.0 ... 4.0 | 13  |
| ▼ BSF134N10NJ3 G | SP000604536 | BSF134N10NJ3GXUMA1     | CanPAK™ S-size          | 100 | 13.4 | 2.0 ... 3.5 | 40  |
| BSZ160N10NS3 G   | SP000482390 | BSZ160N10NS3GATMA1     | S3O8                    | 100 | 16   | 2.0 ... 3.5 | 40  |
| BSZ440N10NS3 G   | SP000482442 | BSZ440N10NS3GATMA1     | S3O8                    | 100 | 44   | 2.0 ... 3.5 | 18  |
| IPA030N10N3 G    | SP000464914 | IPA030N10N3GXKSA1      | TO-220 FullPAK          | 100 | 3.0  | 2.0 ... 3.5 | 79  |
| IPA045N10N3 G    | SP000478912 | IPA045N10N3GXKSA1      | TO-220 FullPAK          | 100 | 4.5  | 2.0 ... 3.5 | 64  |
| IPA086N10N3 G    | SP000485984 | IPA086N10N3GXKSA1      | TO-220 FullPAK          | 100 | 8.6  | 2.0 ... 3.5 | 45  |
| IPA126N10N3 G    | SP000485964 | IPA126N10N3GXKSA1      | TO-220 FullPAK          | 100 | 12.6 | 2.0 ... 3.5 | 35  |
| IPA180N10N3 G    | SP000480108 | IPA180N10N3GXKSA1      | TO-220 FullPAK          | 100 | 18   | 2.0 ... 3.5 | 19  |
| IPB025N10N3 G    | SP000469888 | IPB025N10N3GATMA1      | D <sup>2</sup> PAK 7pin | 100 | 2.5  | 2.0 ... 3.5 | 180 |
| IPB025N10N3 G    | SP000939338 | IPB025N10N3GE8187ATMA1 | D <sup>2</sup> PAK 7pin | 100 | 2.5  | 2.0 ... 3.5 | 180 |
| IPB027N10N3 G    | SP000506508 | IPB027N10N3GATMA1      | D <sup>2</sup> PAK      | 100 | 2.7  | 2.0 ... 3.5 | 120 |
| IPB039N10N3 G    | SP000482428 | IPB039N10N3GATMA1      | D <sup>2</sup> PAK 7pin | 100 | 3.9  | 2.0 ... 3.5 | 160 |
| IPB039N10N3 G    | SP000939340 | IPB039N10N3GE8187ATMA1 | D <sup>2</sup> PAK 7pin | 100 | 3.9  | 2.0 ... 3.5 | 160 |
| IPB042N10N3 G    | SP000446880 | IPB042N10N3GATMA1      | D <sup>2</sup> PAK      | 100 | 4.2  | 2.0 ... 3.5 | 100 |
| IPB042N10N3 G    | SP000939332 | IPB042N10N3GE8187ATMA1 | D <sup>2</sup> PAK      | 100 | 4.2  | 2.0 ... 3.5 | 100 |
| IPB083N10N3 G    | SP000458812 | IPB083N10N3GATMA1      | D <sup>2</sup> PAK      | 100 | 8.2  | 2.0 ... 3.5 | 80  |
| IPB123N10N3 G    | SP000485968 | IPB123N10N3GATMA1      | D <sup>2</sup> PAK      | 100 | 12.3 | 2.0 ... 3.5 | 58  |

SMD = Surface Mounted Device

| Type | Ordering Code | Orderable Part Number | Package | Data     |                  |              |       |
|------|---------------|-----------------------|---------|----------|------------------|--------------|-------|
|      |               |                       |         | $V_{DS}$ | $R_{DS(on) max}$ | $V_{GS(th)}$ | $I_D$ |
|      |               |                       |         | V        | mΩ               | V            | A     |

**N-Channel MOSFETs****200V**

|                |             |                    |                    |     |      |             |      |
|----------------|-------------|--------------------|--------------------|-----|------|-------------|------|
| BSC320N20NS3 G | SP000676410 | BSC320N20NS3GATMA1 | SuperSO8           | 200 | 32   | 2.0 ... 4.0 | 36   |
| BSC900N20NS3 G | SP000781780 | BSC900N20NS3GATMA1 | SuperSO8           | 200 | 90   | 2.0 ... 4.0 | 15.2 |
| BSC12DN20NS3 G | SP000781774 | BSC12DN20NS3GATMA1 | SuperSO8           | 200 | 125  | 2.0 ... 4.0 | 11.3 |
| BSC22DN20NS3 G | SP000781778 | BSC22DN20NS3GATMA1 | SuperSO8           | 200 | 225  | 2.0 ... 4.0 | 7.0  |
| BSZ900N20NS3 G | SP000781806 | BSZ900N20NS3GATMA1 | S3O8               | 200 | 90   | 2.0 ... 4.0 | 15.2 |
| BSZ12DN20NS3 G | SP000781784 | BSZ12DN20NS3GATMA1 | S3O8               | 200 | 125  | 2.0 ... 4.0 | 11.3 |
| BSZ22DN20NS3 G | SP000781794 | BSZ22DN20NS3GATMA1 | S3O8               | 200 | 225  | 2.0 ... 4.0 | 7.0  |
| IPB107N20N3 G  | SP000676406 | IPB107N20N3GATMA1  | D <sup>2</sup> PAK | 200 | 10.7 | 2.0 ... 4.0 | 88   |
| IPB107N20NA    | SP000877674 | IPB107N20NAATMA1   | D <sup>2</sup> PAK | 200 | 11   | 2.0 ... 4.0 | 88   |
| IPB320N20N3 G  | SP000691172 | IPB320N20N3GATMA1  | D <sup>2</sup> PAK | 200 | 32   | 2.0 ... 4.0 | 34   |
| IPD320N20N3 G  | SP000677838 | IPD320N20N3GBTMA1  | DPAK               | 200 | 32   | 2.0 ... 4.0 | 34   |
| BUZ30A H3045A  | SP000736082 | BUZ30AH3045AATMA1  | D <sup>2</sup> PAK | 200 | 130  | 2.1 ... 4.0 | 21   |
| BUZ31 H3045A   | SP000736084 | BUZ31H3045AATMA1   | D <sup>2</sup> PAK | 200 | 200  | 2.1 ... 4.0 | 14.5 |
| BUZ32 H3045A   | SP000736086 | BUZ32H3045AATMA1   | D <sup>2</sup> PAK | 200 | 400  | 2.1 ... 4.0 | 9.5  |
| SPD07N20 G     | SP000449008 | SPD07N20GBTMA1     | DPAK               | 200 | 400  | 2.1 ... 4.0 | 7    |
| IPI110N20N3 G  | SP000714304 | IPI110N20N3GAKSA1  | I <sup>2</sup> PAK | 200 | 11   | 2.0 ... 4.0 | 65   |
| IPI320N20N3 G  | SP000714312 | IPI320N20N3GAKSA1  | I <sup>2</sup> PAK | 200 | 32   | 2.0 ... 4.0 | 22   |
| ▼ BUZ31 H3046  | SP000682994 | BUZ31H3046XKSA1    | I <sup>2</sup> PAK | 200 | 200  | 2.1 ... 4.0 | 14.5 |
| BUZ73A H3046   | SP000683006 | BUZ73AH3046XKSA1   | I <sup>2</sup> PAK | 200 | 600  | 2.1 ... 4.0 | 5.5  |
| IPP110N20NA    | SP000877672 | IPP110N20NAAKSA1   | TO-220             | 200 | 11   | 2.0 ... 4.0 | 88   |
| IPP110N20N3 G  | SP000677892 | IPP110N20N3GXKSA1  | TO-220             | 200 | 11.1 | 2.0 ... 4.0 | 88   |
| IPP320N20N3 G  | SP000677842 | IPP320N20N3GXKSA1  | TO-220             | 200 | 32   | 2.0 ... 4.0 | 34   |
| BUZ30A H       | SP000682990 | BUZ30AHXKSA1       | TO-220             | 200 | 130  | 2.1 ... 4.0 | 21   |
| BUZ31 H        | SP000682992 | BUZ31HXKSA1        | TO-220             | 200 | 200  | 2.1 ... 4.0 | 14.5 |
| BUZ31L H       | SP000682996 | BUZ31LHXKSA1       | TO-220             | 200 | 200  | 1.2 ... 2.0 | 13.5 |
| BUZ32 H        | SP000682998 | BUZ32HXKSA1        | TO-220             | 200 | 400  | 2.1 ... 4.0 | 9.5  |
| BUZ73 H        | SP000683000 | BUZ73HXKSA1        | TO-220             | 200 | 400  | 2.1 ... 4.0 | 7.0  |
| BUZ73 H3046    | SP000683002 | BUZ73H3046XKSA1    | TO-220             | 200 | 400  | 2.1 ... 4.0 | 7.0  |
| BUZ73AL H      | SP000683012 | BUZ73ALHXKSA1      | TO-220             | 200 | 400  | 1.2 ... 2.0 | 7.0  |
| BUZ73L H       | SP000683014 | BUZ73LHXKSA1       | TO-220             | 200 | 400  | 1.2 ... 2.0 | 7.0  |
| BUZ73A H       | SP000683004 | BUZ73AHXKSA1       | TO-220             | 200 | 600  | 2.1 ... 4.0 | 5.5  |

**240V**

|        |             |                  |        |     |       |             |      |
|--------|-------------|------------------|--------|-----|-------|-------------|------|
| BSP88  | SP001058790 | BSP89H6327XTSA1  | SOT223 | 240 | 6000  | 0.6 ... 1.4 | 0.35 |
| BSP89  | SP001058794 | BSP89H6327XTSA1  | SOT223 | 240 | 6000  | 0.8 ... 1.8 | 0.35 |
| BSS87  | SP001047646 | BSS87H6327FTSA1  | SOT89  | 240 | 6000  | 0.8 ... 1.8 | 0.26 |
| BSS131 | SP000702620 | BSS131H6327XTSA1 | SOT23  | 240 | 14000 | 0.8 ... 1.8 | 0.11 |

**250V**

|                |             |                    |                    |     |     |             |      |
|----------------|-------------|--------------------|--------------------|-----|-----|-------------|------|
| BSC600N25NS3 G | SP000676402 | BSC600N25NS3GATMA1 | SuperSO8           | 250 | 60  | 2.0 ... 4.0 | 25   |
| BSC16DN25NS3 G | SP000781782 | BSC16DN25NS3GATMA1 | SuperSO8           | 250 | 165 | 2.0 ... 4.0 | 10.9 |
| BSZ16DN25NS3 G | SP000781800 | BSZ16DN25NS3GATMA1 | S3O8               | 250 | 165 | 2.0 ... 4.0 | 10.9 |
| BSZ42DN15NS3 G | SP000781796 | BSZ42DN25NS3GATMA1 | S3O8               | 250 | 425 | 2.0 ... 4.0 | 5.0  |
| IPB200N25N3 G  | SP000677896 | IPB200N25N3GATMA1  | D <sup>2</sup> PAK | 250 | 20  | 2.0 ... 4.0 | 64   |
| IPB600N25N3 G  | SP000676408 | IPB600N25N3GATMA1  | D <sup>2</sup> PAK | 250 | 60  | 2.0 ... 4.0 | 25   |
| IPD600N25N3 G  | SP000676404 | IPD600N25N3GBTMA1  | DPAK               | 250 | 60  | 2.0 ... 4.0 | 25   |
| IPI200N25N3 G  | SP000714308 | IPI200N25N3GAKSA1  | I <sup>2</sup> PAK | 250 | 20  | 2.0 ... 4.0 | 64   |
| IPI600N25N3 G  | SP000714316 | IPI600N25N3GAKSA1  | I <sup>2</sup> PAK | 250 | 60  | 2.0 ... 4.0 | 22   |
| IPP200N25N3 G  | SP000677894 | IPP200N25N3GXKSA1  | TO-220             | 250 | 20  | 2.0 ... 4.0 | 64   |
| IPP600N25N3 G  | SP000677832 | IPP600N25N3GXKSA1  | TO-220             | 250 | 60  | 2.0 ... 4.0 | 25   |

SMD = Surface Mounted Device

| Type | Ordering Code | Orderable Part Number | Package | Data     |                  |              |       |
|------|---------------|-----------------------|---------|----------|------------------|--------------|-------|
|      |               |                       |         | $V_{DS}$ | $R_{DS(on) max}$ | $V_{GS(th)}$ | $I_D$ |
|      |               |                       |         | V        | mΩ               | V            | A     |

**N-Channel MOSFETs****600V  
C6 Series  
(cont'd)**

|               |             |                  |                    |     |      |             |      |
|---------------|-------------|------------------|--------------------|-----|------|-------------|------|
| ◆ IPI60R380C6 | SP000660630 | IPI60R380C6XKSA1 | I <sup>2</sup> PAK | 600 | 380  | 2.5 ... 3.5 | 10.6 |
| ◆ IPP60R074C6 | SP000898652 | IPP60R074C6XKSA1 | TO-220             | 600 | 74   | 2.5 ... 3.5 | 57.7 |
| ◆ IPP60R099C6 | SP000687556 | IPP60R099C6XKSA1 | TO-220             | 600 | 99   | 2.5 ... 3.5 | 38   |
| ◆ IPP60R125C6 | SP000685844 | IPP60R125C6XKSA1 | TO-220             | 600 | 125  | 2.5 ... 3.5 | 30   |
| ◆ IPP60R160C6 | SP000652796 | IPP60R160C6XKSA1 | TO-220             | 600 | 160  | 2.5 ... 3.5 | 23.8 |
| ◆ IPP60R190C6 | SP000621158 | IPP60R190C6XKSA1 | TO-220             | 600 | 190  | 2.5 ... 3.5 | 20.2 |
| ◆ IPP60R280C6 | SP000645028 | IPP60R280C6XKSA1 | TO-220             | 600 | 280  | 2.5 ... 3.5 | 13.8 |
| ◆ IPP60R380C6 | SP000645062 | IPP60R380C6XKSA1 | TO-220             | 600 | 380  | 2.5 ... 3.5 | 10.6 |
| ◆ IPP60R520C6 | SP000645068 | IPP60R520C6XKSA1 | TO-220             | 600 | 520  | 2.5 ... 3.5 | 8.1  |
| ◆ IPP60R600C6 | SP000645074 | IPP60R600C6XKSA1 | TO-220             | 600 | 600  | 2.5 ... 3.5 | 7.3  |
| ◆ IPP60R950C6 | SP000629364 | IPP60R950C6XKSA1 | TO-220             | 600 | 950  | 2.5 ... 3.5 | 4.4  |
| ◆ IPW60R1K4C6 | SP000931536 | IPW60R1K4C6XKSA1 | TO-220             | 600 | 1400 | 2.5 ... 3.5 | 3.2  |
| ◆ IPW60R041C6 | SP000718886 | IPW60R041C6FKSA1 | TO-247             | 600 | 41   | 2.5 ... 3.5 | 77.5 |
| ◆ IPW60R070C6 | SP000645060 | IPW60R070C6FKSA1 | TO-247             | 600 | 70   | 2.5 ... 3.5 | 53   |
| ◆ IPW60R099C6 | SP000641908 | IPW60R099C6FKSA1 | TO-247             | 600 | 99   | 2.5 ... 3.5 | 38   |
| ◆ IPW60R125C6 | SP000641912 | IPW60R125C6FKSA1 | TO-247             | 600 | 125  | 2.5 ... 3.5 | 30   |
| ◆ IPW60R160C6 | SP000652798 | IPW60R160C6FKSA1 | TO-247             | 600 | 160  | 2.5 ... 3.5 | 23.8 |
| ◆ IPW60R190C6 | SP000621160 | IPW60R190C6FKSA1 | TO-247             | 600 | 190  | 2.5 ... 3.5 | 20.2 |
| ◆ IPW60R280C6 | SP000645032 | IPW60R280C6FKSA1 | TO-247             | 600 | 280  | 2.5 ... 3.5 | 13.8 |
| ◆ IPU60R600C6 | SP000931534 | IPU60R600C6BKMA1 | IPAK               | 600 | 600  | 2.5 ... 3.5 | 7.3  |
| ◆ IPU60R950C6 | SP000931532 | IPU60R950C6BKMA1 | IPAK               | 600 | 950  | 2.5 ... 3.5 | 4.4  |
| ◆ IPU60R1K4C6 | SP000931530 | IPU60R1K4C6BKMA1 | IPAK               | 600 | 1400 | 2.5 ... 3.5 | 3.2  |
| ◆ IPU60R2K0C6 | SP000931528 | IPU60R2K0C6BKMA1 | IPAK               | 600 | 2000 | 2.5 ... 3.5 | 2.4  |

**600V  
CP Series**

|             |             |                  |                    |     |     |             |     |
|-------------|-------------|------------------|--------------------|-----|-----|-------------|-----|
| IPA60R125CP | SP000095275 | IPA60R125CPXKSA1 | TO-220 FullPAK     | 600 | 125 | 2.5 ... 3.5 | 25  |
| IPA60R165CP | SP000096437 | IPA60R165CPXKSA1 | TO-220 FullPAK     | 600 | 165 | 2.5 ... 3.5 | 21  |
| IPA60R199CP | SP000094146 | IPA60R199CPXKSA1 | TO-220 FullPAK     | 600 | 199 | 2.5 ... 3.5 | 16  |
| IPA60R250CP | SP000310226 | IPA60R250CPXKSA1 | TO-220 FullPAK     | 600 | 250 | 2.5 ... 3.5 | 12  |
| IPA60R299CP | SP000096438 | IPA60R299CPXKSA1 | TO-220 FullPAK     | 600 | 299 | 2.5 ... 3.5 | 11  |
| IPA60R385CP | SP000089316 | IPA60R385CPXKSA1 | TO-220 FullPAK     | 600 | 385 | 2.5 ... 3.5 | 9.0 |
| IPA60R520CP | SP000405856 | IPA60R520CPXKSA1 | TO-220 FullPAK     | 600 | 520 | 2.5 ... 3.5 | 6.8 |
| IPA60R600CP | SP000405884 | IPA60R600CPXKSA1 | TO-220 FullPAK     | 600 | 600 | 2.5 ... 3.5 | 6.1 |
| IPB60R099CP | SP000088490 | IPB60R099CPATMA1 | D <sup>2</sup> PAK | 600 | 99  | 2.5 ... 3.5 | 31  |
| IPB60R125CP | SP000297368 | IPB60R125CPATMA1 | D <sup>2</sup> PAK | 600 | 125 | 2.5 ... 3.5 | 25  |
| IPB60R165CP | SP000096439 | IPB60R165CPATMA1 | D <sup>2</sup> PAK | 600 | 165 | 2.5 ... 3.5 | 21  |
| IPB60R199CP | SP000223256 | IPB60R199CPATMA1 | D <sup>2</sup> PAK | 600 | 199 | 2.5 ... 3.5 | 16  |
| IPB60R250CP | SP000358140 | IPB60R250CPATMA1 | D <sup>2</sup> PAK | 600 | 250 | 2.5 ... 3.5 | 12  |
| IPB60R299CP | SP000301161 | IPB60R299CPATMA1 | D <sup>2</sup> PAK | 600 | 299 | 2.5 ... 3.5 | 11  |
| IPB60R385CP | SP000228365 | IPB60R385CPATMA1 | D <sup>2</sup> PAK | 600 | 385 | 2.5 ... 3.5 | 9.0 |
| IPB60R520CP | SP000405868 | IPB60R520CPATMA1 | D <sup>2</sup> PAK | 600 | 520 | 2.5 ... 3.5 | 6.8 |
| IPB60R600CP | SP000405892 | IPB60R600CPATMA1 | D <sup>2</sup> PAK | 600 | 600 | 2.5 ... 3.5 | 6.1 |
| IPD60R385CP | SP000307381 | IPD60R385CPBTMA1 | DPAK               | 600 | 385 | 2.5 ... 3.5 | 9.0 |
| IPD60R520CP | SP000405852 | IPD60R520CPBTMA1 | DPAK               | 600 | 520 | 2.5 ... 3.5 | 6.8 |
| IPD60R600CP | SP000405878 | IPD60R600CPBTMA1 | DPAK               | 600 | 600 | 2.5 ... 3.5 | 6.1 |

SMD = Surface Mounted Device

# Power Semiconductors

| Type | Ordering Code | Orderable Part Number | Package | Data             |              |                   |                   |
|------|---------------|-----------------------|---------|------------------|--------------|-------------------|-------------------|
|      |               |                       |         | $V_{S(AZ)}$ min. | $R_{DS(on)}$ | $I_{L(nom)}$ min. | $I_{L(SCP)}$ typ. |
|      |               |                       |         | V                | mΩ           | A                 | A                 |

## Smart High-Side Switches

### Two Channel PROFET™ for automotive applications

|                 |             |                   |                 |      |         |         |                   |
|-----------------|-------------|-------------------|-----------------|------|---------|---------|-------------------|
| BTS4160DGA      | SP000360284 | BTS4160DGAXUMA1   | PG-DSO-14-37    | > 43 | 2 x 160 | 1.8     | 6.5               |
| BTS5020-2EKA    | SP000857482 | BTS50202EKAXUMA2  | PG-DSO-14-40 EP | > 24 | 2 x 20  | 7/5     | 50                |
| BTS5030-2EKA    | SP000389642 | BTS50302EKAXUMA1  | PG-DSO-14-40 EP | > 24 | 2 x 30  | 6/4     | 36                |
| BTS5045-2EKA    | SP000857484 | BTS50452EKAXUMA1  | PG-DSO-14-40 EP | > 24 | 2 x 45  | 4.5/3   | 25                |
| BTS5090-2EKA    | SP000639242 | BTS50902EKAXUMA1  | PG-DSO-14-40 EP | > 24 | 2 x 90  | 3.5/2.5 | 20                |
| BTS5120-2EKA    | SP000639244 | BTS51202EKAXUMA1  | PG-DSO-14-40 EP | > 24 | 2 x 120 | 2.5/2   | 9                 |
| BTS5180-2EKA    | SP000639238 | BTS51802EKAXUMA1  | PG-DSO-14-40 EP | > 24 | 2 x 180 | 2/1.5   | 8                 |
| BTS5210G        | SP000272327 | BTS5210GXUMA1     | PG-DSO-14-35    | > 43 | 2 x 140 | 2.4     | 6.5               |
| BTS5210L        | SP000301612 | BTS5210LAUMA1     | PG-DSO-12-9     | > 43 | 2 x 140 | 2.4     | 6.5               |
| BTS5215L        | SP000301613 | BTS5215LAUMA1     | PG-DSO-12-9     | > 43 | 2 x 90  | 3.7     | 12                |
| ■ BTS5231-2GS   | SP000281794 | BTS52312GSXUMA1   | PG-DSO-14-31    | > 28 | 2 x 140 | 1.8     | 8                 |
| ■ BTS5235-2G    | SP000281079 | BTS52352GXUMA1    | PG-DSO-20-43    | > 28 | 2 x 60  | 3.5     | 6                 |
| ■ BTS5235-2L    | SP000280715 | BTS52352LAUMA1    | PG-DSO-12-9     | > 28 | 2 x 60  | 3.5     | 6                 |
| ■ BTS5236-2GS   | SP000280717 | BTS52362GSXUMA1   | PG-DSO-14-32    | > 28 | 2 x 50  | 3.6     | 6                 |
| BTS5242-2L      | SP000281082 | BTS52422LAUMA1    | PG-DSO-12-19    | > 28 | 2 x 25  | 6.0     | 7/40<br>(adjust.) |
| BTS5246-2L      | SP000281083 | BTS52462LAUMA1    | PG-DSO-12-19    | > 28 | 2 x 19  | 6.0     | 7/40<br>(adjust.) |
| BTS723GW        | SP000272332 | BTS723GWXUMA1     | PG-DSO-14       | > 58 | 2 x 105 | 2.9     | 8                 |
| BTS740S2        | SP000313545 | BTS740S2XUMA1     | PG-DSO-20-9     | > 34 | 2 x 30  | 5.5     | 24                |
| ▼ BTS50040-2SFA | SP000851890 | BTS500402SFAXUMA1 | PG-DSO-36-44    | > 28 | 2 x 4   | 11      | 130               |
| ▼ BTT6050-2EKA  | SP000866750 | BTT60502EKAXUMA1  | PG-DSO-14-40 EP | > 36 | 2 x 100 | 4.5     | 38                |

### Two Channel PROFET™ for industrial applications

|                |             |                    |                |      |         |     |     |
|----------------|-------------|--------------------|----------------|------|---------|-----|-----|
| ITS612N1       | SP000221233 | ITS612N1HKSA1      | PG-TO220-7-3   | > 40 | 2 x 200 | 2.0 | 7.5 |
| ITS612N1 E3230 | SP000221234 | ITS612N1E3230HKSA1 | PG-TO220-7-230 | > 40 | 2 x 200 | 2.0 | 7.5 |
| ITS621L1       | SP000219533 | ITS621L1HKSA1      | PG-TO220-7-3   | > 40 | 2 x 100 | 3.0 | 14  |
| ITS621L1 E3220 | SP000221224 | ITS621L1E3220HKSA1 | PG-TO220-7-230 | > 40 | 2 x 100 | 3.0 | 14  |
| ITS5215L       | SP000219826 | ITS5215LCUMA1      | PG-DSO-12-2    | > 40 | 2 x 90  | 3.7 | 15  |

SMD = Surface Mounted Device

# Power Semiconductors

| Type | Ordering Code | Orderable Part Number | Package | Description |
|------|---------------|-----------------------|---------|-------------|
|------|---------------|-----------------------|---------|-------------|

## Industrial Stand-alone CAN and LIN Transceivers

|             |             |                  |              |                                                                                                                                                                                  |
|-------------|-------------|------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IFX1021SJ   | SP000870896 | IFX1021SJXUMA1   | PG-DSO-8     | Single wire LIN-transceiver, 20-kbit/s transmission rate, bus wake-up capability, wake-up inputs, tape & reel                                                                    |
| IFX1040SJ   | SP000938316 | IFX1040SJXUMA1   | PG-DSO-8     | High speed CAN-transceiver according ISO 11898-3/-5, 1-Mbit/s transmission rate, bus wake-up capability, wake-up inputs, tape & reel                                             |
| IFX1050G    | SP000613990 | IFX1050GXUMA1    | PG-DSO-8-16  | High speed CAN-transceiver, 1-Mbit/s transmission rate, no bus wake-up capability, no wake-up inputs, tape & reel                                                                |
| IFX1050GVIO | SP000885580 | IFX1050GVIOXUMA1 | PG-DSO-8     | High speed CAN-transceiver according ISO/DIS 11898, 1-Mbit/s transmission rate, no bus wake-up capability, no wake-up inputs, $V_{IO}$ input for voltage adaptation, tape & reel |
| IFX1054G    | SP000613756 | IFX1054GXUMA1    | PG-DSO-14-13 | Low speed fault tolerant CAN-transceiver, 125-Kbit/s transmission rate, bus wake-up capability, wake-up inputs, tape & reel                                                      |

## Automotive Transceivers and SBCs

### Body System Basis Chips

|            |             |                |              |                                                                                                                                                 |
|------------|-------------|----------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| TLE6263-3G | SP000314997 | TLE62633GXUMA1 | PG-DSO-28-27 | Low speed CAN universal SBC with fault tolerant CAN-transceiver, 5-V voltage regulator, wake-up inputs, Reset generator, 8-bit SPI, tape & reel |
| TLE7263E   | SP000075929 | TLE7263EXUMA1  | PG-DSO-36-14 | Integrated high speed CAN, LIN, LDO and HS switch, tape & reel                                                                                  |
| TLE8261E   | SP000317792 | TLE8261EXUMA1  | PG-DSO-36-38 | Universal system basis IC (HERMES), integrated high speed CAN, no LIN, LDO and SPI, 1 limp home output, tape & reel                             |
| TLE8261-2E | SP000454466 | TLE82612EXUMA1 | PG-DSO-36-38 | Universal system basis IC (HERMES), integrated high speed CAN, no LIN, LDO and SPI, 3 limp home output, tape & reel                             |
| TLE8262E   | SP000317793 | TLE8262EXUMA1  | PG-DSO-36-38 | Universal system basis IC (HERMES), integrated high speed CAN, 1LIN, LDO and SPI, 1 limp home output, tape & reel                               |
| TLE8262-2E | SP000454468 | TLE82622EXUMA1 | PG-DSO-36-38 | Universal system basis IC (HERMES), integrated high speed CAN, 1LIN, LDO and SPI, 3 limp home output, tape & reel                               |
| TLE8263E   | SP000317795 | TLE8263EXUMA1  | PG-DSO-36-38 | Universal system basis IC (HERMES), integrated high speed CAN, 2LIN, LDO and SPI, 1 limp home output, tape & reel                               |
| TLE8263-2E | SP000379937 | TLE82632EXUMA1 | PG-DSO-36-38 | Universal system basis IC (HERMES), integrated high speed CAN, 2LIN, LDO and SPI, 3 limp home output, tape & reel                               |
| TLE8264E   | SP000317796 | TLE8264EXUMA1  | PG-DSO-36-38 | Universal system basis IC (HERMES), integrated high speed CAN, 3LIN, LDO and SPI, 1 limp home output, tape & reel                               |
| TLE8264-2E | SP000379938 | TLE82642EXUMA1 | PG-DSO-36-38 | Universal system basis IC (HERMES), integrated high speed CAN, 3LIN, LDO and SPI, 3 limp home output, tape & reel                               |

SMD = Surface Mounted Device

| Type | Ordering Code | Orderable Part Number | Package | Maximum Ratings |             | Characteristics<br>( $T_A = 25^\circ\text{C}$ ) |           |               |
|------|---------------|-----------------------|---------|-----------------|-------------|-------------------------------------------------|-----------|---------------|
|      |               |                       |         | $V_{CE0}$<br>V  | $I_C$<br>mA | $f_T$<br>GHz                                    | $G$<br>dB | at $f$<br>MHz |

## RF Bipolar Transistors

## Low Noise Si Transistors up to 2.5GHz

|          |      |             |                    |          |     |    |      |      |      |
|----------|------|-------------|--------------------|----------|-----|----|------|------|------|
| BF517    | 3k*  | SP000010958 | BF517E6327HTSA1    | SOT23    | 15  | 25 | 2.0  | –    | –    |
| BFP181   | 3k*  | SP000011013 | BFP181E7764HTSA1   | SOT143   | 12  | 20 | 8.0  | 16.5 | 1800 |
| BFP182R  | 3k*  | SP000011016 | BFP182RE7764HTSA1  | SOT143R  | 12  | 35 | 8.0  | 15   | 1800 |
| BFP183   | 3k*  | SP000011018 | BFP183E7764HTSA1   | SOT143   | 12  | 65 | 8.0  | 20   | 900  |
| BFP183W  | 3k*  | SP000745244 | BFP183WH6327XTSA1  | SOT343   | 12  | 65 | 8.0  | 20   | 900  |
| BFR181   | 3k*  | SP000011047 | BFR181E6327HTSA1   | SOT23    | 12  | 20 | 8.0  | 18   | 900  |
| BFR181W  | 3k*  | SP000750418 | BFR181WH6327XTSA1  | SOT323   | 12  | 20 | 8.0  | 18   | 900  |
| BFR182   | 3k*  | SP000011051 | BFR182E6327XTSA1   | SOT23    | 12  | 35 | 8.0  | 18   | 900  |
| BFR182W  | 3k*  | SP000750420 | BFR182WH6327XTSA1  | SOT323   | 12  | 35 | 8.0  | 18   | 900  |
| BFR183   | 3k*  | SP000011054 | BFR183E6327HTSA1   | SOT23    | 12  | 65 | 8.0  | 18.5 | 900  |
| BFR183W  | 3k*  | SP000750422 | BFR183WH6327XTSA1  | SOT323   | 12  | 65 | 8.0  | 18.5 | 900  |
| BFR340F  | 3k*  | SP000750426 | BFR340FH6327XTSA1  | TSFP-3-1 | 6.0 | 10 | 14.0 | 16   | 1800 |
| BFR340L3 | 15k* | SP000013558 | BFR340L3E6327XTMA1 | TSLP-3-7 | 6.0 | 10 | 14.0 | 17   | 1800 |
| BFR35AP  | 3k*  | SP000011060 | BFR35APE6327HTSA1  | SOT23    | 12  | 30 | 4.9  | 15   | 900  |
| BFR360F  | 3k*  | SP000750428 | BFR360FH6327XTSA1  | TSFP-3-1 | 6.0 | 35 | 14.0 | 15.5 | 1800 |
| BFR360F  | 3k*  | SP000750442 | BFR360FH6765XTSA1  | TSFP-3-1 | 6.0 | 35 | 14.0 | 15.5 | 1800 |
| BFR360L3 | 15k* | SP000013561 | BFR360L3E6765XTMA1 | TSLP-3-1 | 6.0 | 35 | 14.0 | 16.5 | 1800 |
| BFR92P   | 3k*  | SP000011062 | BFR92PE6327HTSA1   | SOT23    | 15  | 30 | 5.0  | 15   | 900  |
| BFR92W   | 3k*  | SP000750446 | BFR92WH6327XTSA1   | SOT323   | 15  | 30 | 5.0  | 15.5 | 900  |
| BFS17P   | 3k*  | SP000011073 | BFS17PE6327HTSA1   | SOT23    | 15  | 25 | 2.5  | –    | –    |
| BFS17S   | 3k*  | SP000750448 | BFS17SH6327XTSA1   | SOT363   | 15  | 25 | 2.5  | –    | –    |
| BFS17W   | 3k*  | SP000750450 | BFS17WH6327XTSA1   | SOT323   | 15  | 25 | 2.5  | –    | –    |
| BFS481   | 3k*  | SP000750462 | BFS481H6327XTSA1   | SOT363   | 12  | 20 | 8    | 19   | 900  |
| BFS483   | 3k*  | SP000750464 | BFS483H6327XTSA1   | SOT363   | 12  | 65 | 8    | 19   | 900  |

\* order unit

SMD = Surface Mounted Device

# General Purpose Diodes & Transistors

| Type | Ordering Code | Orderable Part Number | Package | Maximum Ratings  |                 | Characteristics<br>( $T_A = 25^\circ\text{C}$ ) |    |                |                 |
|------|---------------|-----------------------|---------|------------------|-----------------|-------------------------------------------------|----|----------------|-----------------|
|      |               |                       |         | $V_{\text{CEO}}$ | $I_{\text{CM}}$ | $h_{\text{FE}}$                                 | at | $I_{\text{C}}$ | $V_{\text{CE}}$ |
|      |               |                       |         | V                | mA              |                                                 |    | mA             | V               |

## General Purpose Transistors

### Single $I_{\text{C}} \leq 100\text{mA}$

|          |      |             |                    |          |    |     |             |   |   |
|----------|------|-------------|--------------------|----------|----|-----|-------------|---|---|
| BC847A   | 3k*  | SP000010571 | BC847AE6327HTSA1   | SOT23    | 45 | 200 | 110 ... 220 | 2 | 5 |
| BC847B   | 3k*  | SP000010559 | BC847BE6327HTSA1   | SOT23    | 45 | 200 | 200 ... 450 | 2 | 5 |
| BC847B   | 10k* | SP000010576 | BC847BE6433HTMA1   | SOT23    | 45 | 200 | 200 ... 450 | 2 | 5 |
| BC847BL3 | 15k* | SP000013553 | BC847BL3E6327XTMA1 | TSLP-3-1 | 45 | 200 | 200 ... 450 | 2 | 5 |
| BC847BW  | 3k*  | SP000746930 | BC847BWH6327XTSA1  | SOT323   | 45 | 200 | 200 ... 450 | 2 | 5 |
| BC847BW  | 10k* | SP000746932 | BC847BWH6433XTMA1  | SOT323   | 45 | 200 | 200 ... 450 | 2 | 5 |
| BC847C   | 3k*  | SP000010565 | BC847CE6327HTSA1   | SOT23    | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC847C   | 10k* | SP000010590 | BC847CE6433HTMA1   | SOT23    | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC847CW  | 3k*  | SP000746934 | BC847CWH6327XTSA1  | SOT323   | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC847CW  | 3k*  | SP000747286 | BC847CWH6778XTSA1  | SOT323   | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC847CW  | 10k* | SP000747284 | BC847CWH6433XTMA1  | SOT323   | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC848A   | 3k*  | SP000010568 | BC848AE6327HTSA1   | SOT23    | 30 | 200 | 110 ... 220 | 2 | 5 |
| BC848B   | 3k*  | SP000010561 | BC848BE6327HTSA1   | SOT23    | 30 | 200 | 200 ... 450 | 2 | 5 |
| BC848B   | 10k* | SP000010581 | BC848BE6433HTMA1   | SOT23    | 30 | 200 | 200 ... 450 | 2 | 5 |
| BC848BL3 | 15k* | SP000013554 | BC848BL3E6327XTMA1 | TSLP-3-1 | 30 | 200 | 200 ... 450 | 2 | 5 |
| BC848BW  | 3k*  | SP000747410 | BC848BWH6327XTSA1  | SOT323   | 30 | 200 | 200 ... 450 | 2 | 5 |
| BC848C   | 3k*  | SP000010552 | BC848CE6327HTSA1   | SOT23    | 30 | 200 | 420 ... 800 | 2 | 5 |
| BC848C   | 10k* | SP000010582 | BC848CE6433HTMA1   | SOT23    | 30 | 200 | 420 ... 800 | 2 | 5 |
| BC848CW  | 3k*  | SP000747412 | BC848CWH6327XTSA1  | SOT323   | 30 | 200 | 420 ... 800 | 2 | 5 |
| BC849B   | 3k*  | SP000010567 | BC849BE6327HTSA1   | SOT23    | 30 | 200 | 200 ... 450 | 2 | 5 |
| BC849C   | 3k*  | SP000010564 | BC849CE6327HTSA1   | SOT23    | 30 | 200 | 420 ... 800 | 2 | 5 |
| BC849CW  | 3k*  | SP000747414 | BC849CWH6327XTSA1  | SOT323   | 30 | 200 | 420 ... 800 | 2 | 5 |
| BC850B   | 3k*  | SP000010572 | BC850BE6327HTSA1   | SOT23    | 45 | 200 | 200 ... 450 | 2 | 5 |
| BC850BW  | 3k*  | SP000747416 | BC850BWH6327XTSA1  | SOT323   | 45 | 200 | 200 ... 450 | 2 | 5 |
| BC850C   | 3k*  | SP000010563 | BC850CE6327HTSA1   | SOT23    | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC850CW  | 3k*  | SP000747418 | BC850CWH6327XTSA1  | SOT323   | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC857A   | 3k*  | SP000010639 | BC857AE6327HTSA1   | SOT23    | 45 | 200 | 125 ... 250 | 2 | 5 |
| BC857B   | 3k*  | SP000010633 | BC857BE6327HTSA1   | SOT23    | 45 | 200 | 220 ... 475 | 2 | 5 |
| BC857B   | 10k* | SP000010648 | BC857BE6433HTMA1   | SOT23    | 45 | 200 | 220 ... 475 | 2 | 5 |
| BC857BL3 | 3k*  | SP000013556 | BC857BL3E6327XTMA1 | TSLP-3-1 | 45 | 200 | 220 ... 475 | 2 | 5 |
| BC857BW  | 3k*  | SP000747448 | BC857BWH6327XTSA1  | SOT323   | 45 | 200 | 220 ... 475 | 2 | 5 |
| BC857BW  | 3k*  | SP000747450 | BC857BWH6778XTSA1  | SOT323   | 45 | 200 | 220 ... 475 | 2 | 5 |
| BC857C   | 3k*  | SP000010640 | BC857CE6327HTSA1   | SOT23    | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC857C   | 10k* | SP000010660 | BC857CE6433HTMA1   | SOT23    | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC857CW  | 3k   | SP000747452 | BC857CWH6327XTSA1  | SOT323   | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC857CW  | 10k* | SP000747454 | BC857CWH6433XTMA1  | SOT323   | 45 | 200 | 420 ... 800 | 2 | 5 |
| BC858A   | 3k*  | SP000010636 | BC858AE6327HTSA1   | SOT23    | 30 | 200 | 125 ... 250 | 2 | 5 |
| BC858B   | 3k   | SP000010634 | BC858BE6327HTSA1   | SOT23    | 30 | 200 | 220 ... 475 | 2 | 5 |
| BC858B   | 10k* | SP000010652 | BC858BE6433HTMA1   | SOT23    | 30 | 200 | 220 ... 475 | 2 | 5 |
| BC858BW  | 3k   | SP000747582 | BC858BWH6327XTSA1  | SOT323   | 30 | 200 | 220 ... 475 | 2 | 5 |
| BC858C   | 3k   | SP000010624 | BC858CE6327HTSA1   | SOT23    | 30 | 200 | 420 ... 800 | 2 | 5 |
| BC858C   | 10k* | SP000010654 | BC858CE6433HTMA1   | SOT23    | 30 | 200 | 420 ... 800 | 2 | 5 |
| BC858CW  | 3k   | SP000747584 | BC858CWH6327XTSA1  | SOT323   | 30 | 200 | 420 ... 800 | 2 | 5 |
| BC859C   | 3k   | SP000010637 | BC859CE6327HTSA1   | SOT23    | 30 | 200 | 420 ... 800 | 2 | 5 |

\* order unit

SMD = Surface Mounted Device

# General Purpose Diodes & Transistors

| Type | Ordering Code | Orderable Part Number | Package | Maximum Ratings  |                 | Characteristics<br>( $T_A = 25^\circ\text{C}$ ) |    |                |                 |
|------|---------------|-----------------------|---------|------------------|-----------------|-------------------------------------------------|----|----------------|-----------------|
|      |               |                       |         | $V_{\text{CEO}}$ | $I_{\text{CM}}$ | $h_{\text{FE}}$                                 | at | $I_{\text{C}}$ | $V_{\text{CE}}$ |
|      |               |                       |         | V                | mA              |                                                 |    | mA             | V               |

## General Purpose Transistors

### Single $I_{\text{C}} \leq 500\text{mA}$

|            |        |             |                     |        |    |      |             |     |   |
|------------|--------|-------------|---------------------|--------|----|------|-------------|-----|---|
| BC817K-16  | 3k*    | SP000271788 | BC817K16E6327HTSA1  | SOT23  | 45 | 1000 | 100 ... 250 | 100 | 1 |
| BC817K-16  | 10k*   | SP000271829 | BC817K16E6433HTMA1  | SOT23  | 45 | 1000 | 100 ... 250 | 100 | 1 |
| BC817K-16W | 3k*    | SP000786164 | BC817K16WH6327XTSA1 | SOT323 | 45 | 1000 | 100 ... 250 | 100 | 1 |
| BC817K-25  | 3k*    | SP000271875 | BC817K25E6327HTSA1  | SOT23  | 45 | 1000 | 160 ... 400 | 100 | 1 |
| BC817K-25  | 10k*   | SP000271879 | BC817K25E6433HTMA1  | SOT23  | 45 | 1000 | 160 ... 400 | 100 | 1 |
| BC817K-25W | 3k*    | SP000746848 | BC817K25WH6327XTSA1 | SOT323 | 45 | 1000 | 160 ... 400 | 100 | 1 |
| BC817K-25W | 10k*   | SP000786166 | BC817K25WH6433XTMA1 | SOT323 | 45 | 1000 | 160 ... 400 | 100 | 1 |
| BC817K-40  | 3k*    | SP000271895 | BC817K40E6327HTSA1  | SOT23  | 45 | 1000 | 250 ... 630 | 100 | 1 |
| BC817K-40  | 10k*   | SP000271898 | BC817K40E6433HTMA1  | SOT23  | 45 | 1000 | 250 ... 630 | 100 | 1 |
| BC817K-40W | 3k*    | SP000746850 | BC817K40WH6327XTSA1 | SOT323 | 45 | 1000 | 250 ... 630 | 100 | 1 |
| BC817SU    | 3k*    | SP000296413 | BC817SUE6327HTSA1   | SC74   | 45 | 1000 | 160 ... 400 | 100 | 1 |
| BC818K-16W | 3k*    | SP000746852 | BC818K16WH6327XTSA1 | SOT323 | 25 | 1000 | 100 ... 250 | 100 | 1 |
| BC818K-40  | 3k*    | SP000271908 | BC818K40E6327HTSA1  | SOT23  | 25 | 1000 | 250 ... 630 | 100 | 1 |
| BCW66KF    | 3k*    | SP000271902 | BCW66KFE6327HTSA1   | SOT23  | 45 | 1000 | 100 ... 250 | 100 | 1 |
| BCW66KG    | 3k*    | SP000271904 | BCW66KGE6327HTSA1   | SOT23  | 45 | 1000 | 160 ... 400 | 100 | 1 |
| BCW66KH    | 3k*    | SP000271906 | BCW66KHE6327HTSA1   | SOT23  | 45 | 1000 | 250 ... 630 | 100 | 1 |
| BCW66KH    | 10x3k* | SP000271905 | BCW66KHB6327HTLA1   | SOT23  | 45 | 1000 | 250 ... 630 | 100 | 1 |
| BCW67B     | 3k*    | SP000015035 | BCW67BE6327HTSA1    | SOT23  | 32 | 1000 | 160 ... 400 | 100 | 1 |
| BCW67C     | 3k*    | SP000015037 | BCW67CE6327HTSA1    | SOT23  | 32 | 1000 | 250 ... 630 | 100 | 1 |
| BCW68F     | 3k*    | SP000015041 | BCW68FE6327HTSA1    | SOT23  | 45 | 1000 | 100 ... 250 | 100 | 1 |
| BCW68G     | 3k*    | SP000015039 | BCW68GE6327HTSA1    | SOT23  | 45 | 1000 | 160 ... 400 | 100 | 1 |
| BCW68H     | 3k*    | SP000015040 | BCW68HE6327HTSA1    | SOT23  | 45 | 1000 | 250 ... 630 | 100 | 1 |
| SMBTA06    | 3k*    | SP000011686 | SMBTA06E6327HTSA1   | SOT23  | 80 | 500  | $\geq 100$  | 100 | 1 |
| SMBTA06    | 10k*   | SP000011688 | SMBTA06E6433HTMA1   | SOT23  | 80 | 500  | $\geq 100$  | 100 | 1 |
| SMBTA56    | 3k*    | SP000011692 | SMBTA56E6327HTSA1   | SOT23  | 80 | 500  | $\geq 100$  | 100 | 1 |
| SMBTA56    | 10k*   | SP000011695 | SMBTA56E6433HTMA1   | SOT23  | 80 | 500  | $\geq 100$  | 100 | 1 |

### Dual $I_{\text{C}} \leq 500\text{mA}$

|            |     |             |                      |      |    |      |             |     |   |
|------------|-----|-------------|----------------------|------|----|------|-------------|-----|---|
| BC807U     | 3k* | SP000012395 | BC807UE6327HTSA1     | SC74 | 45 | 500  | 160 ... 400 | 100 | 1 |
| BC817U     | 3k* | SP000012394 | BC817UE6327HTSA1     | SC74 | 45 | 1000 | 160 ... 400 | 100 | 1 |
| BC817UPN   | 3k* | SP000012398 | BC817UPNE6327HTSA1   | SC74 | 45 | 1000 | 160 ... 400 | 100 | 1 |
| SMBTA06UPN | 3k* | SP000012393 | SMBTA06UPNE6327HTSA1 | SC74 | 80 | 500  | $\geq 100$  | 100 | 1 |

\* order unit

SMD = Surface Mounted Device

| Type | Ordering Code | Orderable Part Number | Package | Description    |                 |                             |                 |
|------|---------------|-----------------------|---------|----------------|-----------------|-----------------------------|-----------------|
|      |               |                       |         | Frequency Band | Modulation Type | Operating Temperature Range | ASK Sensitivity |
|      |               |                       |         | MHz            |                 | °C                          | dBm             |

**Wireless Control****Receiver (single channel)**

|          |             |               |             |         |          |              |        |
|----------|-------------|---------------|-------------|---------|----------|--------------|--------|
| TDA5200  | SP000016381 | TDA5200XUMA1  | PG-TSSOP-28 | 434/868 | ASK only | -40 ... +85  | -110.0 |
| TDA5201  | SP000012902 | TDA5201XUMA1  | PG-TSSOP-28 | 315/345 | ASK only | -40 ... +85  | -112.0 |
| TDA5210  | SP000016384 | TDA5210XUMA1  | PG-TSSOP-28 | 434/868 | ASK/FSK  | -40 ... +105 | -110.0 |
| TDA5211  | SP000016390 | TDA5211XUMA1  | PG-TSSOP-28 | 315/345 | ASK/FSK  | -40 ... +105 | -113.0 |
| TDA5212  | SP000013430 | TDA5212XUMA1  | PG-TSSOP-28 | 915     | ASK/FSK  | -40 ... +85  | -112.0 |
| TDA5220  | SP000014342 | TDA5220XUMA1  | PG-TSSOP-28 | 434/868 | ASK/FSK  | -40 ... +105 | -110.0 |
| TDA7200  | SP000296473 | TDA7200XUMA1  | PG-TSSOP-28 | 434     | ASK/FSK  | -20 ... +70  | -110.0 |
| TDA7210  | SP000524274 | TDA7210XUMA1  | PG-TSSOP-28 | 434/868 | ASK/FSK  | -40 ... +85  | -110.0 |
| TDA7210V | SP000698080 | TDA7210VXUMA1 | PG-VQFN-32  | 434/868 | ASK/FSK  | -40 ... +85  | -115.0 |

**SmartLEWIS™ RX+ (single channel) High Sensitivity Receiver with Digital Baseband Processing**

|         |             |              |             |                 |         |              |   |
|---------|-------------|--------------|-------------|-----------------|---------|--------------|---|
| TDA5235 | SP000507674 | TDA5235XUMA1 | PG-TSSOP-28 | 315/434/868/915 | ASK/FSK | -40 ... +105 | - |
|---------|-------------|--------------|-------------|-----------------|---------|--------------|---|

**Receiver (multi channel)**

|         |             |              |             |     |         |              |        |
|---------|-------------|--------------|-------------|-----|---------|--------------|--------|
| TDA5221 | SP000014343 | TDA5221XUMA1 | PG-TSSOP-28 | 315 | ASK/FSK | -40 ... +105 | -113.0 |
|---------|-------------|--------------|-------------|-----|---------|--------------|--------|

**SmartLEWIS™ RX (multi channel) Receiver with Digital Baseband Processing**

|         |             |              |             |         |         |              |        |
|---------|-------------|--------------|-------------|---------|---------|--------------|--------|
| TDA5230 | SP000076520 | TDA5230XUMA1 | PG-TSSOP-28 | 434/868 | ASK/FSK | -40 ... +105 | -108.0 |
| TDA5231 | SP000202847 | TDA5231XUMA1 | PG-TSSOP-28 | 315     | ASK/FSK | -40 ... +105 | -108.0 |

**SmartLEWIS™ RX+ (multi channel) High Sensitivity Receiver with Digital Baseband Processing**

|         |             |              |             |                 |         |              |   |
|---------|-------------|--------------|-------------|-----------------|---------|--------------|---|
| TDA5225 | SP000507672 | TDA5225XUMA1 | PG-TSSOP-28 | 315/434/868/915 | ASK/FSK | -40 ... +105 | - |
| TDA5240 | SP000550860 | TDA5240XUMA1 | PG-TSSOP-28 | 315/434/868/915 | ASK/FSK | -40 ... +105 | - |

SMD = Surface Mounted Device

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## Chip Card & Security ICs

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| BSC014N04LS     | SP000871196   | BSC014N04LSATMA1      | 90   | BSC093N04LS G   | SP000387929   | BSC093N04LSGATMA1     | 90   |
| BSC014N06NS     | SP000924886   | BSC014N06NSATMA1      | 91   | BSC100N03MS G   | SP000311515   | BSC100N03MSGATMA1     | 89   |
| BSC014NE2LSI    | SP000911336   | BSC014NE2LSIATMA1     | 86   | BSC100N06LS3 G  | SP000453664   | BSC100N06LS3 GATMA1   | 91   |
| BSC016N03LS G   | SP000237663   | BSC016N03LSGATMA1     | 87   | BSC100N10NSF G  | SP000379595   | BSC100N10NSFGATMA1    | 94   |
| BSC016N03MS G   | SP000311502   | BSC016N03MSGATMA1     | 89   | BSC105N10LSF G  | SP000388502   | BSC105N10LSFGATMA1    | 94   |
| BSC016N04LS G   | SP000394801   | BSC016N04LSGATMA1     | 90   | BSC109N10NS3 G  | SP000778132   | BSC109N10NS3GATMA1    | 94   |
| BSC016N06NS     | SP000924882   | BSC016N06NSATMA1      | 91   | BSC110N06NS3 G  | SP000453668   | BSC110N06NS3GATMA1    | 91   |
| BSC017N04NS G   | SP000394684   | BSC017N04NSGATMA1     | 90   | BSC118N10NS G   | SP000379599   | BSC118N10NSGATMA1     | 94   |
| BSC018N04LS G   | SP000388293   | BSC018N04LSGATMA1     | 90   | BSC120N03LS G   | SP000302848   | BSC120N03LSGATMA1     | 87   |
| BSC018NE2LS     | SP000756336   | BSC018NE2LSATMA1      | 86   | BSC120N03MS G   | SP000311516   | BSC120N03MSGATMA1     | 89   |
| BSC018NE2LSI    | SP000906030   | BSC018NE2LSIATMA1     | 86   | BSC123N08NS3 G  | SP000443916   | BSC123N08NS3GATMA1    | 93   |
| BSC019N02KS G   | SP000307376   | BSC019N02KSGAUMA1     | 86   | BSC123N10LS G   | SP000379612   | BSC123N10LSGATMA1     | 94   |
| BSC019N04NS G   | SP000388299   | BSC019N04NSGATMA1     | 90   | BSC12DN20NS3 G  | SP000781774   | BSC12DN20NS3GATMA1    | 97   |
| BSC020N03LS G   | SP000237662   | BSC020N03LSGATMA1     | 87   | BSC130P03LS G   | SP000359666   | BSC130P03LSGAUMA1     | 111  |
| BSC020N03MS G   | SP000311503   | BSC020N03MSGATMA1     | 89   | BSC150N03LD G   | SP000359362   | BSC150N03LDGATMA1     | 87   |
| BSC024NE2LS     | SP000756342   | BSC024NE2LSATMA1      | 86   | BSC152N10NSF G  | SP000379601   | BSC152N10NSFGATMA1    | 94   |
| BSC025N03LS G   | SP000289781   | BSC025N03LSGATMA1     | 87   | BSC159N10LSF G  | SP000379614   | BSC159N10LSFGATMA1    | 94   |
| BSC025N03MS G   | SP000311505   | BSC025N03MSGATMA1     | 89   | BSC160N10NS3 G  | SP000482382   | BSC160N10NS3GATMA1    | 94   |
| BSC026N02KS G   | SP000379664   | BSC026N02KSGAUMA1     | 86   | BSC16DN25NS3 G  | SP000781782   | BSC16DN25NS3GATMA1    | 97   |
| BSC027N04LS G   | SP000354810   | BSC027N04LSGATMA1     | 90   | BSC190N12NS3 G  | SP000652752   | BSC190N12NS3GATMA1    | 96   |
| BSC028N06LS3 G  | SP000453652   | BSC028N06LS3GATMA1    | 91   | BSC190N15NS3 G  | SP000416636   | BSC190N15NS3GATMA1    | 96   |
| BSC028N06NS     | SP000917416   | BSC028N06NSATMA1      | 91   | BSC196N10NS G   | SP000379604   | BSC196N10NSGATMA1     | 94   |
| BSC030N03LS G   | SP000237661   | BSC030N03LSGATMA1     | 87   | BSC205N10LS G   | SP000379616   | BSC205N10LSGATMA1     | 94   |
| BSC030N03MS G   | SP000311506   | BSC030N03MSGATMA1     | 89   | BSC22DN20NS3 G  | SP000781778   | BSC22DN20NS3GATMA1    | 97   |
| BSC030N04NS G   | SP000354811   | BSC030N04NSGATMA1     | 91   | BSC240N12NS3 G  | SP000819812   | BSC240N12NS3GATMA1    | 96   |
| BSC030P03NS3 G  | SP000442470   | BSC030P03NS3GAUMA1    | 110  | BSC252N10NSF G  | SP000379608   | BSC252N10NSFGATMA1    | 94   |
| BSC031N06NS3 G  | SP000451482   | BSC031N06NS3GATMA1    | 91   | BSC265N10LSF G  | SP000379618   | BSC265N10LSFGATMA1    | 94   |
| BSC032NE2LS     | SP000854378   | BSC032NE2LSATMA1      | 86   | BSC320N20NS3 G  | SP000676410   | BSC320N20NS3GATMA1    | 97   |
| BSC034N03LS G   | SP000475948   | BSC034N03LSGATMA1     | 87   | BSC340N08NS3 G  | SP000447534   | BSC340N08NS3GATMA1    | 93   |
| BSC035N04LS G   | SP000391503   | BSC035N04LSGATMA1     | 90   | BSC360N15NS3 G  | SP000778134   | BSC360N15NS3GATMA1    | 96   |
| BSC036NE7NS3 G  | SP000907920   | BSC036NE7NS3GATMA1    | 93   | BSC440N10NS3 G  | SP000482420   | BSC440N10NS3GATMA1    | 94   |
| BSC039N06NS     | SP000985386   | BSC039N06NSATMA1      | 91   | BSC520N15NS3 G  | SP000521716   | BSC520N15NS3GATMA1    | 96   |
| BSC042N03LS G   | SP000302864   | BSC042N03LSGATMA1     | 87   | BSC600N25NS3 G  | SP000676402   | BSC600N25NS3GATMA1    | 97   |
| BSC042N03MS G   | SP000311512   | BSC042N03MSGATMA1     | 89   | BSC750N10ND G   | SP000359610   | BSC750N10NDGATMA1     | 94   |
| BSC042NE7NS3 G  | SP000657440   | BSC042NE7NS3GATMA1    | 93   | BSC900N20NS3 G  | SP000781780   | BSC900N20NS3GATMA1    | 97   |
| BSC046N02KS G   | SP000379666   | BSC046N02KSGAUMA1     | 86   | BSD214SN        | SP000917656   | BSD214SNH6327XTSA1    | 86   |
| BSC046N10NS3 G  | SP000907922   | BSC046N10NS3GATMA1    | 94   | BSD223P         | SP000924074   | BSD223PH6327XTSA1     | 112  |
| BSC047N08NS3 G  | SP000436372   | BSC047N08NS3GATMA1    | 93   | BSD235C         | SP000917610   | BSD235CH6327XTSA1     | 113  |
| BSC050N03LS G   | SP000289785   | BSC050N03LSGATMA1     | 87   | BSD235N         | SP000917652   | BSD235NH6327XTSA1     | 86   |
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| BSC050N04LS G   | SP000354806   | BSC050N04LSGATMA1     | 90   | BSD316SN H6327  | SP000917668   | BSD316SNH6327XTSA1    | 87   |
| BSC050NE2LS     | SP000756340   | BSC050NE2LSATMA1      | 86   | BSD816SN        | SP000917670   | BSD816SNH6327XTSA1    | 86   |
| BSC052N03LS     | SP000807602   | BSC052N03LSATMA1      | 87   | BSD840N         | SP000917654   | BSD840NH6327XTSA1     | 86   |
| BSC054N04NS G   | SP000354808   | BSC054N04NSGATMA1     | 90   | BSF024N03LT3 G  | SP000616988   | BSF024N03LT3GXUMA1    | 87   |
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| BSC057N08NS3 G  | SP000447542   | BSC057N08NS3GATMA1    | 93   | BSF045N03LQ3 G  | SP000597842   | BSF045N03LQ3GXUMA1    | 87   |
| BSC059N04LS G   | SP000391499   | BSC059N04LSGATMA1     | 90   | BSF050N03LQ3 G  | SP000604522   | BSF050N03LQ3GXUMA1    | 87   |
| BSC060N10NS3 G  | SP000446584   | BSC060N10NS3GATMA1    | 94   | BSF110N06NT3 G  | SP000973760   | BSF110N06NT3GXUMA1    | 91   |
| BSC060P03NS3E G | SP000472984   | BSC060P03NS3EGATMA1   | 111  | BSF134N10NJ3 G  | SP000604536   | BSF134N10NJ3GXUMA1    | 94   |
| BSC067N06LS3 G  | SP000451084   | BSC067N06LS3GATMA1    | 91   | BSF450NE7NH3    | SP001019350   | BSF450NE7NH3XUMA1     | 93   |
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| BSC072N03LD G   | SP000359607   | BSC072N03LDGATMA1     | 87   | BSL205N         | SP000442386   | BSL205NL6327HTSA1     | 86   |
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| BSC077N12NS3 G  | SP000652750   | BSC077N12NS3GATMA1    | 96   | BSL207SP        | SP000095796   | BSL207SPL6327HTSA1    | 112  |
| BSC079N03LSC G  | SP000527424   | BSC079N03LSCGATMA1    | 87   | BSL211SP        | SP000095797   | BSL211SPL6327HTSA1    | 112  |
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| BSC080P03LS G   | SP000359664   | BSC080P03LSGAUMA1     | 111  | BSL302SN        | SP000257783   | BSL302SNL6327HTSA1    | 87   |
| BSC082N10LS G   | SP000379609   | BSC082N10LSGATMA1     | 94   | BSL306N         | SP000442404   | BSL306NL6327HTSA1     | 87   |
| BSC084P03NS3 G  | SP000473020   | BSC084P03NS3GATMA1    | 111  | BSL307SP        | SP000095798   | BSL307SPL6327HTSA1    | 112  |
| BSC084P03NS3E G | SP000473012   | BSC084P03NS3EGATMA1   | 111  | BSL308C         | SP000473910   | BSL308CL6327HTSA1     | 113  |
| BSC0901NS       | SP000800248   | BSC0901NSATMA1        | 87   | BSL308PE        | SP000472978   | BSL308PEL6327HTSA1    | 112  |
| BSC0901NSI      | SP000819818   | BSC0901NSIATMA1       | 87   | BSL314PE        | SP000473004   | BSL314PEL6327HTSA1    | 112  |
| BSC0902NS       | SP000800246   | BSC0902NSATMA1        | 87   | BSL315P         | SP000442408   | BSL315PL6327HTSA1     | 112  |
| BSC0902NSI      | SP000854380   | BSC0902NSIATMA1       | 87   | BSL316C         | SP000442412   | BSL316CL6327HTSA1     | 113  |
| BSC0904NSI      | SP000854384   | BSC0904NSIATMA1       | 87   | BSL802SN        | SP000442478   | BSL802SNL6327HTSA1    | 86   |
| BSC0906NS       | SP000893360   | BSC0906NSATMA1        | 87   | BSL806N         | SP000464844   | BSL806NL6327HTSA1     | 91   |
| BSC0908NS       | SP000847024   | BSC0908NSATMA1        | 87   | BSO033N03MS G   | SP000446072   | BSO033N03MSGXUMA1     | 89   |
| BSC0909NS       | SP000832576   | BSC0909NSATMA1        | 87   | BSO040N03MS G   | SP000446070   | BSO040N03MSGXUMA1     | 89   |
| BSC090N03LS G   | SP000275115   | BSC090N03LSGATMA1     | 87   | BSO080P03NS3 G  | SP000472996   | BSO080P03NS3GXUMA1    | 112  |
| BSC090N03MS G   | SP000313120   | BSC090N03MSGATMA1     | 89   | BSO080P03NS3E G | SP000472992   | BSO080P03NS3EGXUMA1   | 112  |
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| BTM7710G       | SP000306878   | BTM7700GXUMA1         | 136  | BTS3160D        | SP000305175   | BTS3160DAUMA1         | 125  |
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| BTM7741G       | SP000306880   | BTM7741GXUMA1         | 136  | BTS3207N        | SP000294550   | BTS3207NHUMA1         | 125  |
| BTM7742G       | SP000777046   | BTM7742GXUMA1         | 136  | BTS3256D        | SP000315628   | BTS3256DAUMA1         | 125  |
| BTM7745G       | SP000777048   | BTM7745GXUMA1         | 136  | BTS3405G        | SP000237783   | BTS3405GXUMA1         | 125  |
| BTM7750G       | SP000306881   | BTM7750GXUMA1         | 136  | BTS3408G        | SP000305177   | BTS3408GXUMA1         | 125  |
| BTM7750GP      | SP000303751   | BTM7750GPAUMA1        | 136  | BTS3410G (Dual) | SP000305178   | BTS3410GXUMA1         | 125  |
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| BTM7811K       | SP000303752   | BTM7811KAUMA1         | 136  | BTS410F2 E3062A | SP000016371   | BTS410F2E3062ANTMA1   | 128  |
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| BTS110 E3045A  | SP000011183   | BTS110E3045ANTMA1     | 124  | BTS441TG        | SP000311504   | BTS441TGATMA1         | 127  |
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| BTS113A        | SP000011187   | BTS113ANKSA1          | 124  | BTS443P         | SP000264198   | BTS443PAUMA1          | 129  |
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| BTS117         | SP001003104   | BTS117BKSA1           | 125  | BTS50050-1EGA   | SP000410462   | BTS500501EGAAUMA1     | 129  |
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| BTS118D        | SP000506212   | BTS118DATMA1          | 125  | BTS50055-1TMC   | SP000385908   | BTS500551TMCATMA1     | 129  |
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| IPP147N12N3 G   | SP000652742   | IPP147N12N3GXKSA1     | 96   | IPP65R660CFDA  | SP000875802   | IPP65R660CFDAAKSA1    | 108  |
| IPP16CN10L G    | SP000680878   | IPP16CN10LGXKSA1      | 95   | IPP70N04S3-07  | SP000279559   | IPP70N04S307AKSA1     | 79   |
| IPP180N10N3 G   | SP000683090   | IPP180N10N3GXKSA1     | 95   | IPP70N04S4-06  | SP000711480   | IPP70N04S406AKSA1     | 83   |
| IPP200N15N3 G   | SP000680884   | IPP200N15N3GXKSA1     | 96   | IPP70N10S3-12  | SP000407122   | IPP70N10S312AKSA1     | 83   |
| IPP200N25N3 G   | SP000677894   | IPP200N25N3GXKSA1     | 97   | IPP70N10S3L-12 | SP000427252   | IPP70N10S3L12AKSA1    | 83   |
| IPP22N03S4L-15  | SP000275290   | IPP22N03S4L15AKSA1    | 77   | IPP70N10SL-16  | SP000225708   | IPP70N10SL16AKSA1     | 83   |
| IPP230N06L3 G   | SP000680886   | IPP230N06L3GXKSA1     | 92   | IPP70P04P4-09  | SP000735978   | IPP70P04P409AKSA1     | 84   |
| IPP320N20N3 G   | SP000677842   | IPP320N20N3GXKSA1     | 97   | IPP77N06S2-12  | SP000218172   | IPP77N06S212AKSA1     | 81   |
| IPP45N06S4-09   | SP001028648   | IPP45N06S409AKSA2     | 82   | IPP80N03S4L-03 | SP000275328   | IPP80N03S4L03AKSA1    | 77   |
| IPP45N06S4L-08  | SP001028650   | IPP45N06S4L08AKSA2    | 82   | IPP80N03S4L-04 | SP000274981   | IPP80N03S4L04AKSA1    | 77   |
| IPP45P03P4L-11  | SP000396382   | IPP45P03P4L11AKSA1    | 85   | IPP80N04S2-04  | SP000219054   | IPP80N04S204AKSA1     | 79   |
| IPP47N10S-33    | SP000225706   | IPP47N10S33AKSA1      | 83   | IPP80N04S2-H4  | SP000218169   | IPP80N04S2H4AKSA1     | 79   |
| IPP47N10SL-26   | SP000225707   | IPP47N10SL26AKSA1     | 83   | IPP80N04S2L-03 | SP000219063   | IPP80N04S2L03AKSA1    | 79   |
| IPP50N10S3L-16  | SP000407118   | IPP50N10S3L16AKSA1    | 83   | IPP80N04S3-03  | SP000261229   | IPP80N04S303AKSA1     | 79   |
| IPP50R140CP     | SP000234986   | IPP50R140CPHKSA1      | 100  | IPP80N04S3-04  | SP000261230   | IPP80N04S304AKSA1     | 79   |
| IPP50R140CP     | SP000680932   | IPP50R140CPXKSA1      | 100  | IPP80N04S3-06  | SP000261233   | IPP80N04S306AKSA1     | 79   |
| IPP50R190CE     | SP000850802   | IPP50R190CEXKSA1      | 99   | IPP80N04S3-H4  | SP000415702   | IPP80N04S3H4AKSA1     | 79   |
| IPP50R199CP     | SP000236074   | IPP50R199CPHKSA1      | 100  | IPP80N04S4-03  | SP000671756   | IPP80N04S403AKSA1     | 79   |
| IPP50R199CP     | SP000680934   | IPP50R199CPXKSA1      | 100  | IPP80N04S4-04  | SP000646196   | IPP80N04S404AKSA1     | 79   |
| IPP50R250CP     | SP000680936   | IPP50R250CPXKSA1      | 100  | IPP80N04S4L-04 | SP000646198   | IPP80N04S4L04AKSA1    | 79   |
| IPP50R280CE     | SP000850810   | IPP50R280CEXKSA1      | 99   | IPP80N06S2-05  | SP000218873   | IPP80N06S205AKSA1     | 80   |
| IPP50R299CP     | SP000236070   | IPP50R299CPHKSA1      | 100  | IPP80N06S2-07  | SP000218810   | IPP80N06S207AKSA1     | 80   |
| IPP50R299CP     | SP000680938   | IPP50R299CPXKSA1      | 100  | IPP80N06S2-08  | SP000218826   | IPP80N06S208AKSA1     | 80   |
| IPP50R350CP     | SP000236069   | IPP50R350CPHKSA1      | 100  | IPP80N06S2-09  | SP000218740   | IPP80N06S209AKSA1     | 80   |
| IPP50R350CP     | SP000680940   | IPP50R350CPXKSA1      | 100  | IPP80N06S2-H5  | SP000218155   | IPP80N06S2H5AKSA1     | 80   |
| IPP50R380CE     | SP000850818   | IPP50R380CEXKSA1      | 99   | IPP80N06S2L-05 | SP000219000   | IPP80N06S2L05AKSA1    | 80   |
| IPP50R399CP     | SP000234985   | IPP50R399CPHKSA1      | 100  | IPP80N06S2L-06 | SP000218824   | IPP80N06S2L06AKSA1    | 80   |
| IPP50R399CP     | SP000680942   | IPP50R399CPXKSA1      | 100  | IPP80N06S2L-07 | SP000218831   | IPP80N06S2L07AKSA1    | 80   |
| IPP50R500CE     | SP000939326   | IPP50R500CEXKSA1      | 99   | IPP80N06S2L-09 | SP000218742   | IPP80N06S2L09AKSA1    | 80   |
| IPP50R520CP     | SP000236068   | IPP50R520CPHKSA1      | 100  | IPP80N06S2L-11 | SP000218175   | IPP80N06S2L11AKSA1    | 81   |
| IPP50R520CP     | SP000680944   | IPP50R520CPXKSA1      | 100  | IPP80N06S2L-H5 | SP000219067   | IPP80N06S2LH5AKSA1    | 80   |
| IPP530N15N3 G   | SP000521722   | IPP530N15N3GXKSA1     | 96   | IPP80N06S4-05  | SP001028712   | IPP80N06S405AKSA2     | 82   |
| IPP600N25N3 G   | SP000677832   | IPP600N25N3GXKSA1     | 97   | IPP80N06S4-07  | SP001028666   | IPP80N06S407AKSA2     | 82   |
| IPP60R074C6     | SP000898652   | IPP60R074C6XKSA1      | 103  | IPP80N06S4L-05 | SP001028716   | IPP80N06S4L05AKSA2    | 82   |
| IPP60R099CP     | SP000687556   | IPP60R099C6XKSA1      | 103  | IPP80N06S4L-07 | SP001028668   | IPP80N06S4L07AKSA2    | 82   |
| IPP60R099CP     | SP000570211   | IPP60R099CPXKSA1      | 104  | IPP80N08S2-07  | SP000219040   | IPP80N08S207AKSA1     | 82   |
| IPP60R099CPA    | SP000315418   | IPP60R099CPAAKSA1     | 83   | IPP80N08S2L-07 | SP000219050   | IPP80N08S2L07AKSA1    | 82   |
| IPP60R125C6     | SP000685844   | IPP60R125C6XKSA1      | 103  | IPP80P03P4-04  | SP000396390   | IPP80P03P4L04AKSA1    | 85   |
| IPP60R125CP     | SP000088488   | IPP60R125CPXKSA1      | 104  | IPP80P03P4-05  | SP000396388   | IPP80P03P405AKSA1     | 85   |
| IPP60R160C6     | SP000652796   | IPP60R160C6XKSA1      | 103  | IPP80P03P4-07  | SP000396392   | IPP80P03P4L07AKSA1    | 85   |
| IPP60R165CP     | SP000084279   | IPP60R165CPXKSA1      | 104  | IPP80P04P4-05  | SP000652622   | IPP80P04P405AKSA1     | 84   |
| IPP60R190C6     | SP000621158   | IPP60R190C6XKSA1      | 103  | IPP80P04P4-07  | SP000842044   | IPP80P04P407AKSA1     | 84   |
| IPP60R190E6     | SP000797378   | IPP60R190E6XKSA1      | 105  | IPP80P04P4L-04 | SP000840200   | IPP80P04P4L04AKSA1    | 84   |
| IPP60R199CP     | SP000084278   | IPP60R199CPXKSA1      | 104  | IPP80P04P4L-06 | SP000842052   | IPP80P04P4L06AKSA1    | 84   |
| IPP60R1K4C6     | SP000931536   | IPP60R1K4C6XKSA1      | 103  | IPP80P04P4L-08 | SP000840212   | IPP80P04P4L08AKSA1    | 84   |
| IPP60R250CP     | SP000358136   | IPP60R250CPXKSA1      | 104  | IPP90N04S4-02  | SP000646200   | IPP90N04S402AKSA1     | 79   |
| IPP60R280C6     | SP000645028   | IPP60R280C6XKSA1      | 103  | IPP90N06S4-04  | SP001028750   | IPP90N06S404AKSA2     | 82   |
| IPP60R280E6     | SP000797290   | IPP60R280E6XKSA1      | 105  | IPP90N06S4L-04 | SP001028752   | IPP90N06S4L04AKSA2    | 82   |
| IPP60R299CP     | SP000084280   | IPP60R299CPXKSA1      | 104  | IPP90R1K0C3    | SP000683094   | IPP90R1K0C3XKSA1      | 109  |
| IPP60R380C6     | SP000645062   | IPP60R380C6XKSA1      | 103  | IPP90R2K2C3    | SP000683096   | IPP90R1K2C3XKSA1      | 109  |
| IPP60R380E6     | SP000795310   | IPP60R380E6XKSA1      | 105  | IPP90R340C3    | SP000683098   | IPP90R340C3XKSA1      | 109  |
| IPP60R385CP     | SP000082281   | IPP60R385CPXKSA1      | 104  | IPP90R500C3    | SP000683100   | IPP90R500C3XKSA1      | 109  |
| IPP60R450E6     | SP000842486   | IPP60R450E6XKSA1      | 105  | IPP90R800C3    | SP000683102   | IPP90R800C3XKSA1      | 109  |
| IPP60R520C6     | SP000645068   | IPP60R520C6XKSA1      | 103  | IPS040N03L G   | SP000810846   | IPS040N03LGAKMA1      | 88   |
| IPP60R520CP     | SP000405860   | IPP60R520CPXKSA1      | 104  | IPS050N03L G   | SP000810848   | IPS050N03LGAKMA1      | 88   |
| IPP60R520E6     | SP000797294   | IPP60R520E6XKSA1      | 105  | IPS060N03L G   | SP000705724   | IPS060N03LGAKMA1      | 88   |
| IPP60R600C6     | SP000645074   | IPP60R600C6XKSA1      | 103  | IPS075N03L G   | SP000705726   | IPS075N03LGAKMA1      | 88   |
| IPP60R600CP     | SP000405888   | IPP60R600CPXKSA1      | 104  | IPS090N03L G   | SP000788216   | IPS090N03LGAKMA1      | 88   |
| IPP60R600E6     | SP000797630   | IPP60R600E6XKSA1      | 105  | IPS105N03L G   | SP000788218   | IPS105N03LGAKMA1      | 88   |
| IPP60R750E6     | SP000842482   | IPP60R750E6XKSA1      | 105  | IPS135N03L G   | SP000788220   | IPS135N03LGAKMA1      | 88   |
| IPP60R950C6     | SP000629364   | IPP60R950C6XKSA1      | 103  | IPS05R520CP    | SP000307420   | IPS05R520CPBKMA1      | 100  |
| IPP65R074C6     | SP000898650   | IPP65R074C6XKSA1      | 107  | IPS65R1K4C6    | SP000991120   | IPS65R1K4C6AKMA1      | 107  |
| IPP65R099C6     | SP000895218   | IPP65R099C6XKSA1      | 107  | IPS65R950C6    | SP000991122   | IPS65R950C6AKMA1      | 107  |
| IPP65R110CFD    | SP000895226   | IPP65R110CFDXKSA1     | 107  | IPU135N08N3 G  | SP000521642   | IPU135N08N3GBKMA1     | 93   |
| IPP65R110CFDA   | SP000895234   | IPP65R110CFDAAKSA1    | 108  | IPU50R1K4CE    | SP001022958   | IPU50R1K4CEBKMA1      | 99   |
| IPP65R150CFD    | SP000907024   | IPP65R150CFDXKSA1     | 107  | IPU50R2K0CE    | SP001053984   | IPU50R2K0CEBKMA1      | 99   |
| IPP65R150CFDA   | SP000928272   | IPP65R150CFDAAKSA1    | 108  | IPU50R3K0CE    | SP001022960   | IPU50R3K0CEBKMA1      | 99   |

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| SAB-C161PI-L25F CA-Step      | SP000014362   | C161PIL25FCABXUMA1     | 26   | SAF-XC161CS-32F40F BB-A-Step  | SP000224542   | XC161CS32F40FBBAFXUMA1  | 21   |
| SAB-C161PI-L25M CA-Step      | SP000014367   | C161PIL25MCABXUMA1     | 26   | SAF-XC164CM-16F40F BA-Step    | SP000258386   | XC164CM16F40FBFAFXQMA1  | 22   |
| SAB-C161PI-LF CA-Step        | SP000014344   | C161PILFCABXUMA1       | 26   | SAF-XC164CM-8F40F AA-Step     | SP000203865   | XC164CM8F40FAAFXQMA1    | 21   |
| SAB-C161PI-LF3V CA-Step      | SP000014360   | C161PILF3V/CABXUMA1    | 26   | SAF-XC164CM-8F40F AA-Step     | SP000065635   | XC164CM8F40FAAFXUMA1    | 21   |
| SAB-C161PI-LM CA-Step        | SP000014345   | C161PILMCABXUMA1       | 26   | SAF-XC164CS-16F40F BB-Step    | SP000224553   | XC164CS16F40FBBFXQMA1   | 22   |
| SAB-C161PI-LM3V CA-Step      | SP000014365   | C161PILM3VCABXUMA1     | 26   | SAF-XC164CS-16F40F BB-Step    | SP000224552   | XC164CS16F40FBBFXUMA1   | 22   |
| SAB-C161S-L25M AA-Step       | SP000014739   | C161SL25MAABXUMA1      | 26   | SAF-XC164CS-32F40F BB-A-Step  | SP000224593   | XC164CS32F40FBBAFXQMA1  | 22   |
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| SAB-C165-L25F HA-Step        | SP000011592   | C165L25FHABXUMA1       | 28   | SAF-XC167CI-32F40F BB-A-Step  | SP000224703   | XC167CI32F40FBBAFXQMA1  | 23   |
| SAB-C165-L25M HA-Step        | SP000011593   | C165L25MHABXQMA1       | 28   | SAF-XC167CI-32F40F BB-A-Step  | SP000224702   | XC167CI32F40FBBAFXUMA1  | 23   |
| SAB-C165-L25M HA-Step        | SP000011594   | C165L25MHABXUMA1       | 28   | SAF-XC2336A-56F80L AA-Step    | SP000722428   | XC2336A56F80LAAFXUMA1   | 54   |
| SAB-C165-LF HA-Step          | SP000011595   | C165LFHABXQMA1         | 28   | SAF-XC2786X-96F66L AC-Step    | SP000369364   | XC2786X96F66LACKXUMA1   | 60   |
| SAB-C165-LF HA-Step          | SP000011596   | C165LFHABXUMA1         | 28   | SAF-XC822-1FRA AA-Step        | SP000873390   | XC8221FRAAFXUMA1        | 9    |
| SAB-C165-LF3V HA-Step        | SP000011597   | C165LF3VHABXUMA1       | 28   | SAF-XC822-1FRI AA-Step        | SP000795354   | XC8221FRIABFXUMA1       | 9    |
| SAB-C165-LM HA-Step          | SP000011598   | C165LMHABXQMA1         | 28   | SAF-XC822M-1FRI AA-Step       | SP000771768   | XC822M1FRIABFXUMA1      | 9    |
| SAB-C165-LM HA-Step          | SP000011599   | C165LMHABXUMA1         | 28   | SAF-XC822MT-1FRA AA-Step      | SP000873396   | XC822MT1FRAAFXUMA1      | 9    |
| SAB-C167CR-LM HA+-Step       | SP000103462   | C167CRLMHABXQLA1       | 29   | SAF-XC822MT-1FRI AA-Step      | SP000795358   | XC822MT1FRIABFXUMA1     | 9    |
| SAB-C167CR-LM HA+-Step       | SP000103463   | C167CRLMHABXUMA1       | 29   | SAF-XC822T-0FRI AA-Step       | SP000795350   | XC822T0FRIABFXUMA1      | 9    |
| SAB-C167CS-L40M CA+-Step     | SP000103471   | C167CSL40MCABXQLA1     | 30   | SAF-XC822T-1FRI AA-Step       | SP000797572   | XC822T1FRIABFXUMA1      | 9    |
| SAB-C167CS-L40M CA+-Step     | SP000103468   | C167CSL40MCABXUMA1     | 30   | SAF-XC824M-1FGI AA-Step       | SP000771770   | XC824M1FGIAAFXUMA1      | 9    |
| SAB-C167CS-LM CA+-Step       | SP000103483   | C167CSLMCABXQLA1       | 29   | SAF-XC824MT-1FGI AA-Step      | SP000795362   | XC824MT1FGIAAFXUMA1     | 9    |
| SAB-C167CS-LM CA+-Step       | SP000103484   | C167CSLMCABXUMA1       | 29   | SAF-XC835MT-2FGI AB-Step      | SP000843552   | XC835MT2FGIABFXUMA1     | 10   |
| SAB-C167SR-LM HA+-Step       | SP000103456   | C167SRMLHABXQLA1       | 30   | SAF-XC836-2FRI AB-Step        | SP000843562   | XC8362FRIABFXUMA1       | 10   |
| SAB-C167SR-LM HA+-Step       | SP000103457   | C167SRMLHABXUMA1       | 30   | SAF-XC836M-1FRI AB-Step       | SP000843556   | XC836M1FRIABFXUMA1      | 10   |
| SAB-C505CA-4EM CA-Step       | SP000106391   | C505CA4EMCABXQMA1      | 20   | SAF-XC836M-2FRI AB-Step       | SP000843558   | XC836M2FRIABFXUMA1      | 10   |
| SAB-C505CA-4EM CA-Step       | SP000106392   | C505CA4EMCABXUMA1      | 20   | SAF-XC836MT-2FRI AB-Step      | SP000843560   | XC836MT2FRIABFXUMA1     | 10   |
| SAE0800G                     | SP000697948   | SAE800GXLLA1           | 153  | SAF-XC836T-2FRI AB-Step       | SP000843554   | XC836T2FRIABFXUMA1      | 10   |
| SAE0800G                     | SP000783572   | SAE800GEGEXUMA2        | 153  | SAF-XC866-1FRI AB-Step        | SP000244527   | XC8661FRIABFXUMA1       | 11   |
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| SAF-C161CS-LF CA-Step        | SP000106866   | C161CSLFCAFXUMA1       | 24   | SAF-XC866-2FRI BE-Step        | SP000245777   | XC8662FRIBEFXUMA1       | 11   |
| SAF-C161K-LM HA-Step         | SP000011620   | C161KLMHAFXQMA1        | 25   | SAF-XC866-2FRI BE-Step        | SP000232712   | XC8662FRIABFAZZA1       | 12   |
| SAF-C161K-LM3V HA-Step       | SP000011621   | C161KLM3VHAFXUMA1      | 25   | SAF-XC866-4FRA BE-Step        | SP000281799   | XC8664FRABEFXUMA1       | 11   |
| SAF-C161O-LM HA-Step         | SP000011622   | C161OLMHAFXQMA1        | 25   | SAF-XC866-4FRI BE-Step        | SP000245780   | XC8664FRIBEFXUMA1       | 12   |
| SAF-C161O-LM HA-Step         | SP000011623   | C161OLMHAFXUMA1        | 25   | SAF-XC866-4FRI BE-Step        | SP000232710   | XC8664FRIABFAZZA1       | 12   |
| SAF-C161O-LM3V HA-Step       | SP000011624   | C161OLM3VHAFXUMA1      | 25   | SAF-XC878-13F5A 5V AC-Step    | SP000756808   | XC87813F5AVACFXUMA1     | 14   |
| SAF-C161PI-L25F CA-Step      | SP000014363   | C161PIL25FCAFXUMA1     | 26   | SAF-XC878-16FFI 5V AC-Step    | SP000696772   | XC87816FFI5VACFXUMA1    | 14   |
| SAF-C161PI-L25M CA-Step      | SP000014368   | C161PIL25MCAFXUMA1     | 26   | SAF-XC878CM-16FFA 5V AC-Step  | SP000772210   | XC878CM16FFA5VACFXUMA1  | 14   |
| SAF-C161PI-LF CA-Step        | SP000014359   | C161PILFCAFXUMA1       | 26   | SAF-XC878CM-16FFI 3V3 AC-Step | SP000696786   | XC878CM16FFI3V3ACFXUMA1 | 14   |
| SAF-C161PI-LF3V CA-Step      | SP000014361   | C161PILF3VCAFXUMA1     | 26   | SAF-XC878CM-16FFI 5V AC-Step  | SP000679860   | XC878CM16FFI5VACFXUMA1  | 14   |
| SAF-C161PI-LM CA-Step        | SP000014364   | C161PILMCAFXUMA1       | 26   | SAF-XC878M-13FFI 3V3 AC-Step  | SP000696774   | XC878M13FFI3V3ACFXUMA1  | 14   |
| SAF-C161PI-LM3V CA-Step      | SP000014366   | C161PILM3VCAFXUMA1     | 26   | SAF-XC878M-16FFI 3V3 AC-Step  | SP000696778   | XC878M16FFI3V3ACFXUMA1  | 14   |
| SAF-C161S-L25M AA-Step       | SP000014947   | C161SL25MAAFXUMA1      | 26   | SAF-XC878M-16FFI 5V AC-Step   | SP000696780   | XC878M16FFI5VACFXUMA1   | 14   |
| SAF-C161S-LM3V AA-Step       | SP000014948   | C161SLM3VAAFXUMA1      | 26   | SAF-XC886-6FFI 5V AC-Step     | SP000607048   | XC8866FFI5VACFXUMA1     | 15   |
| SAF-C164CI-8E25M DB-Step     | SP000104053   | C164CI8E25MDBFXQMA1    | 27   | SAF-XC886-8FFI 5V AC-Step     | SP000607054   | XC8868FFI5VACFXUMA1     | 15   |
| SAF-C164CI-8E25M DB-Step     | SP000104054   | C164CI8E25MDBFXUMA1    | 27   | SAF-XC886C-6FFA 5V AC-Step    | SP000607068   | XC886C6FFA5VACFXUMA1    | 15   |
| SAF-C164CI-8EM CB-Step       | SP000103498   | C164CI8EMCBFXQMA1      | 27   | SAF-XC886C-6FFI 3V3 AC-Step   | SP000655548   | XC886C6FFI3V3ACFXUMA1   | 15   |
| SAF-C164CI-8EM CB-Step       | SP000103499   | C164CI8EMCBFXUMA1      | 27   | SAF-XC886C-6FFI 5V AC-Step    | SP000607056   | XC886C6FFI5VACFXUMA1    | 15   |
| SAF-C164CI-8EM DB-Step       | SP000104055   | C164CI8EMDBFXQMA1      | 27   | SAF-XC886C-8FFI 5V AC-Step    | SP000607010   | XC886C8FFI5VACFXUMA1    | 15   |
| SAF-C164CI-8EM DB-Step       | SP000104056   | C164CI8EMDBFXUMA1      | 27   | SAF-XC886CM-6RFA              | SP000254732   | XC886CM6RFAFZZA1        | 16   |
| SAF-C164CI-8RM CA-Step       | SP000957756   | C164CI8RMCAFFZZA1      | 27   | SAF-XC886CM-8FFI 5V AC-Step   | SP000607014   | XC886CM8FFI5VACFXUMA1   | 17   |
| SAF-C164CI-LM CA+-Step       | SP000103495   | C164CILMCAFXUMA1       | 27   | SAF-XC886CM-8RFA AA-Step      | SP000235443   | XC886CM8RFAAFZZA1       | 17   |
| SAF-C164CM-4EF AB-Step       | SP000104062   | C164CM4EFABFXUMA1      | 28   | SAF-XC886LM-6FFA 5V AC-Step   | SP000857428   | XC886LM6FFA5VACFXUMA1   | 17   |
| SAF-C165-L25F HA-Step        | SP000012870   | C165L25FHAFXUMA1       | 28   | SAF-XC886LM-6FFI 5V AC-Step   | SP000607050   | XC886LM6FFI5VACFXUMA1   | 17   |
| SAF-C165-L25M HA-Step        | SP000011629   | C165L25MHAFXQMA1       | 28   | SAF-XC886LM-8FFI 5V AC-Step   | SP000607052   | XC886LM8FFI5VACFXUMA1   | 17   |
| SAF-C165-L25M HA-Step        | SP000011630   | C165L25MHAFXUMA1       | 28   | SAF-XC888-6FFI 5V AC-Step     | SP000607062   | XC8886FFI5VACFXUMA1     | 18   |
| SAF-C165-LF HA-Step          | SP000011631   | C165LFHAFXUMA1         | 28   | SAF-XC888-8FFI 5V AC-Step     | SP000646588   | XC8888FFI5VACFXUMA1     | 18   |
| SAF-C165-LF3V HA-Step        | SP000011632   | C165LF3VHAFXUMA1       | 28   | SAF-XC888CLM-8FFI 5V AC-Step  | SP000253397   | XC888CLM8FFI5VACFXUMA1  | 18   |
| SAF-C165-LM HA-Step          | SP000011633   | C165LMHAFXQMA1         | 28   | SAF-XC888CM-6RFA              | SP000257476   | XC888CM6RFAFZZA1        | 19   |
| SAF-C165-LM HA-Step          | SP000011634   | C165LMHAFXUMA1         | 28   | SAF-XC888CM-8FFI 3V3 AC-Step  | SP000607084   | XC888CM8FFI3V3ACFXUMA1  | 19   |
| SAF-C165-LM3V HA-Step        | SP000011635   | C165LM3VHAFXUMA1       | 28   | SAF-XC888CM-8FFI 5V AC-Step   | SP000655550   | XC888CM8FFI5VACFXUMA1   | 19   |
| SAF-C167CR-LM HA+-Step       | SP000103464   | C167CRLMHABXQLA1       | 29   | SAF-XC888CM-8RFA AA-Step      | SP000245812   | XC888CM8RFAAFZZA1       | 19   |
| SAF-C167CR-LM HA+-Step       | SP000103465   | C167CRLMHABXUMA1       | 29   | SAF-XC888LM-6FFI 3V3 AC-Step  | SP000307472   | XC888LM6FFI3V3ACFXUMA1  | 19   |
| SAF-C167CS-L16M3V CA+-Step   | SP000103469   | C167CSL16M3VCAFXQLA1   | 29   | SAF-XC888LM-8FFI 5V AC-Step   | SP000607064   | XC888LM8FFI5VACFXUMA1   | 19   |
| SAF-C167CS-L16M3V CA+-Step   | SP000103470   | C167CSL16M3VCAFXUMA1   | 29   | SAF-XE160FU-4F66R AA-Step     | SP000859274   | XE160FU4F66RAAFXUMA1    | 31   |
| SAF-C167CS-L33M CA+-Step     | SP000103485   | C167CSL33MCAFXQLA1     | 29   | SAF-XE160FU-8F66R AA-Step     | SP000859278   | XE160FU8F66RAAFXUMA1    | 31   |
| SAF-C167CS-L33M CA+-Step     | SP000103486   | C167CSL33MCAFXUMA1     | 29   | SAF-XE161FL-12F80V AA-Step    | SP000859298   | XE161FL12F80VAAFXUMA1   | 31   |
| SAF-C167CS-LM CA+-Step       | SP000103487   | C167CSLMCAFXQLA1       | 29   | SAF-XE161FL-20F80V AA-Step    | SP000859290   | XE161FL20F80VAAFXUMA1   | 32   |
| SAF-C167CS-LM CA+-Step       | SP000103488   | C167CSLMCAFXUMA1       | 29   | SAF-XE161FU-4F66V AA-Step     | SP000859282   | XE161FU4F66VAAFXUMA1    | 32   |
| SAF-C505CA-4EM CA-Step       | SP000106394   | C505CA4EMCAFXQMA1      | 20   | SAF-XE161FU-8F66V AA-Step     | SP000859286   | XE161FU8F66VAAFXUMA1    | 32   |
| SAF-C505CA-4EM CA-Step       | SP000106395   | C505CA4EMCAFXUMA1      | 20   | SAF-XE161HL-12F80V AA-Step    | SP000859302   | XE161HL12F80VAAFXUMA1   | 32   |
| SAF-C505CA-LM CA-Step        | SP000106669   | C505CALMCAFXQMA1       | 20   | SAF-XE161HL-20F80V AA-Step    | SP000966484   | XE161HL20F80VAAFXLXA1   | 32   |
| SAF-C505CA-LM CA-Step        | SP000106390   | C505CALMCAFXUMA1       | 20   | SAF-XE161HL-20F80V AA-Step    | SP000859294   | XE161HL20F80VAAFXUMA1   | 32   |
| SAF-C515C-8EM CA-Step        | SP000106398   | C515C8EMCAFXQMA1       | 20   | SAF-XE162FL-12F80L AA-Step    | SP000859314   | XE162FL12F80LAAFXQSA1   | 33   |
| SAF-C515C-8EM CA-Step        | SP000106399   | C515C8EMCAFXUMA1       | 20   | SAF-XE162FL-20F80L AA-Step    | SP000859306   | XE162FL20F80LAAFXQSA1   | 33   |
| SAF-TC1167-128F133HL AD-Step | SP000674708   | TC1167128F133HLADFUMA1 | 61   | SAF-XE162FM-24F80L AA-Step    | SP000397634   | XE162FM24F80LAAFXUMA1   | 33   |
| SAF-XC161CJ-16F40F BB-Step   | SP000280516   | XC161CJ16F40FBBFXQMA1  | 21   | SAF-XE162FM-72F80L AA-Step    | SP000397630   | XE162FM72F80LAAFXUMA1   | 33   |