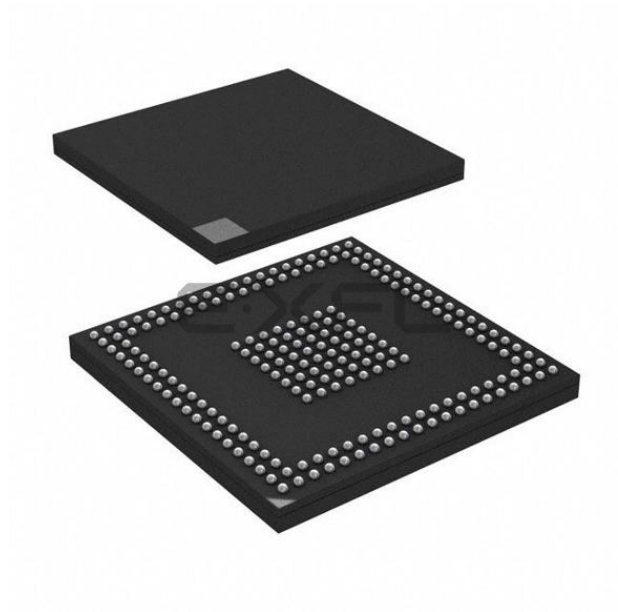

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Understanding Embedded - DSP (Digital Signal Processors)

Embedded - DSP (Digital Signal Processors) are specialized microprocessors designed to perform complex mathematical computations on digital signals in real-time. Unlike general-purpose processors, DSPs are optimized for high-speed numeric processing tasks, making them ideal for applications that require efficient and precise manipulation of digital data. These processors are fundamental in converting and processing signals in various forms, including audio, video, and communication signals, ensuring that data is accurately interpreted and utilized in embedded systems.

Applications of Embedded - DSP (Digital Signal Processors)

Details	
Product Status	Active
Type	Fixed Point
Interface	DMA, Ethernet, I²C, PPI, SPI, SPORT, UART, USB
Clock Rate	300MHz
Non-Volatile Memory	ROM (32kB)
On-Chip RAM	132kB
Voltage - I/O	1.8V, 2.5V, 3.3V
Voltage - Core	1.30V
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	208-FBGA, CSPBGA
Supplier Device Package	208-CSPBGA (17x17)
Purchase URL	https://www.e-xfl.com/product-detail/analog-devices/adsp-bf526bbcz-3a

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REVISION HISTORY

7/13—Rev. C to Rev. D

Updated Development Tools 20

Corrected footnote 9 and added footnote 11 in Operating Conditions for ADSP-BF523/ADSP-BF525/ADSP-BF527 Processors 30

Table 70. 208-Ball CSP_BGA Ball Assignment (Numerically by Ball Number)

Ball No.	Signal	Ball No.	Signal	Ball No.	Signal	Ball No.	Signal	Ball No.	Signal	Ball No.	Signal
A1	GND	B16	PH14	H7	V_{DDEXT}	L2	PG8	P1	PG1	W8	DATA1
A2	PF9	B17	PH15	H8	V_{DDEXT}	L7	V_{DDEXT}	P2	PG2	W9	BMODE3
A3	PF11	B18	$\overline{\text{RESET}}$	H9	GND	L8	V_{DDMEM}	P7	V_{DDMEM}	W10	BMODE1
A4	SCL	B19	$\overline{\text{NMI}}$	H10	GND	L9	GND	P8	V_{DDMEM}	W11	ADDR18
A5	PF13	B20	GND	H11	GND	L10	GND	P9	V_{DDMEM}	W12	ADDR16
A6	PF15	C1	PF5	H12	GND	L11	GND	P10	V_{DDMEM}	W13	ADDR14
A7	PH0	C2	PF6	H13	GND	L12	GND	P11	V_{DDMEM}	W14	ADDR12
A8	PH2	C19	CLKBUF	H14	V_{DDINT}	L13	GND	P12	V_{DDINT}	W15	ADDR10
A9	PH4	C20	USB_ID	H19	USB_VREF	L14	V_{DDINT}	P13	V_{DDINT}	W16	ADDR8
A10	XTAL	D1	PF3	H20	VR_{OUT}/**EXT_WAKE1**	L19	VPPOTP	P14	V_{DDINT}	W17	ADDR6
A11	CLKIN	D2	PF4	J1	PG11	L20	$\overline{\text{AMS3}}$	P19	ARDY	W18	ADDR4
A12	PH8	D19	V_{DDUSB}	J2	PG12	M1	PG5	P20	SCKE	W19	ADDR2
A13	PH10	D20	USB_RSET	J7	V_{DDEXT}	M2	PG6	R1	TDI	W20	ADDR1
A14	RTXI	E1	PF1	J8	V_{DDEXT}	M7	V_{DDMEM}	R2	PG0	Y1	GND
A15	RTXO	E2	PF2	J9	GND	M8	V_{DDMEM}	R19	$\overline{\text{SMS}}$	Y2	DATA12
A16	V_{DDRTC}	E19	USB_VBUS	J10	GND	M9	GND	R20	V_{DDOTP}	Y3	DATA10
A17	GND	E20	USB_DP	J11	GND	M10	GND	T1	TDO	Y4	DATA8
A18	USB_XO	F1	PF0	J12	GND	M11	GND	T2	EMU	Y5	DATA6
A19	USB_XI	F2	PPI_FS1/TMR0	J13	GND	M12	GND	T19	$\overline{\text{SRAS}}$	Y6	DATA4
A20	GND	F19	VR_{SEL}/**V_{DDEXT}**	J14	V_{DDINT}	M13	GND	T20	$\overline{\text{SWE}}$	Y7	DATA2
B1	PF7	F20	USB_DM	J19	$\overline{\text{AMS0}}$	M14	V_{DDINT}	U1	$\overline{\text{TRST}}$	Y8	DATA0
B2	PF8	G1	PG15	J20	EXT_WAKE0	M19	$\overline{\text{AMS2}}$	U2	TMS	Y9	BMODE2
B3	PF10	G2	PPI_CLK/TMRCLK	K1	PG9	M20	$\overline{\text{ARE}}$	U19	SA10	Y10	BMODE0
B4	SDA	G7	V_{DDEXT}	K2	PG10	N1	PG3	U20	$\overline{\text{SCAS}}$	Y11	ADDR19
B5	PF12	G8	V_{DDEXT}	K7	V_{DDEXT}	N2	PG4	V1	DATA15	Y12	ADDR17
B6	PF14	G9	V_{DDEXT}	K8	V_{DDEXT}	N7	V_{DDMEM}	V2	TCK	Y13	ADDR15
B7	PH1	G10	V_{DDEXT}	K9	GND	N8	V_{DDMEM}	V19	$\overline{\text{ABE0}}$/SDQM0	Y14	ADDR13
B8	PH3	G11	V_{DDEXT}	K10	GND	N9	GND	V20	$\overline{\text{ABE1}}$/SDQM1	Y15	ADDR11
B9	PH5	G12	V_{DDINT}	K11	GND	N10	GND	W1	DATA14	Y16	ADDR9
B10	PH6	G13	V_{DDINT}	K12	GND	N11	GND	W2	DATA13	Y17	ADDR7
B11	PH7	G14	V_{DDINT}	K13	GND	N12	GND	W3	DATA11	Y18	ADDR5
B12	PH9	G19	SS/**$\overline{\text{PG}}$**	K14	V_{DDINT}	N13	GND	W4	DATA9	Y19	ADDR3
B13	PH11	G20	V_{DDUSB}	K19	$\overline{\text{AMS1}}$	N14	V_{DDINT}	W5	DATA7	Y20	GND
B14	PH12	H1	PG13	K20	CLKOUT	N19	$\overline{\text{AWE}}$	W6	DATA5		
B15	PH13	H2	PG14	L1	PG7	N20	$\overline{\text{AOE}}$	W7	DATA3		

NOTE: In this table, **BOLD TYPE** indicates the sole signal/function for that ball on ADSP-BF522/ADSP-BF524/ADSP-BF526 processors.