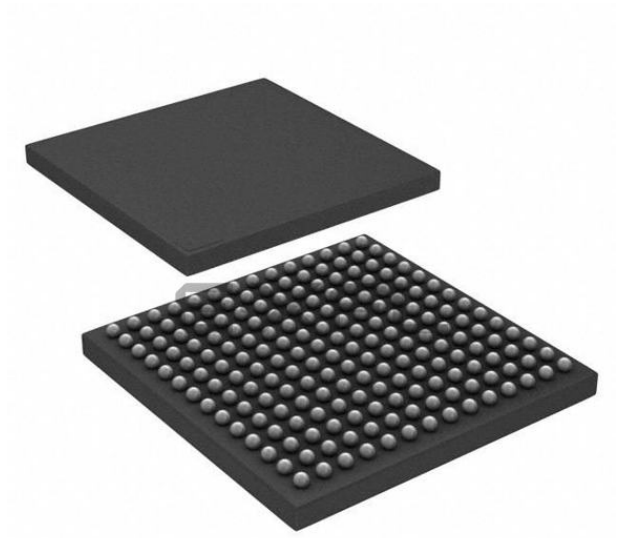
AMD Xilinx - XC7S6-1FTGB196Q Datasheet



Welcome to E-XFL.COM

Understanding Embedded - FPGAs (Field Programmable Gate Array)

Embedded - FPGAs, or Field Programmable Gate Arrays, are advanced integrated circuits that offer unparalleled flexibility and performance for digital systems. Unlike traditional fixed-function logic devices, FPGAs can be programmed and reprogrammed to execute a wide array of logical operations, enabling customized functionality tailored to specific applications. This reprogrammability allows developers to iterate designs quickly and implement complex functions without the need for custom hardware.

Applications of Embedded - FPGAs

The versatility of Embedded - FPGAs makes them indispensable in numerous fields. In telecommunications.

Details	
Product Status	Active
Number of LABs/CLBs	469
Number of Logic Elements/Cells	6000
Total RAM Bits	184320
Number of I/O	100
Number of Gates	-
Voltage - Supply	0.95V ~ 1.05V
Mounting Type	Surface Mount
Operating Temperature	-40°C ~ 125°C (TJ)
Package / Case	196-LBGA, CSPBGA
Supplier Device Package	196-CSBGA (15x15)
Purchase URL	https://www.e-xfl.com/product-detail/xilinx/xc7s6-1ftgb196q

Ordering number : ENA1511B

MCH3914

N-Channel JFET
15V, 16 to 50mA, 29mS, MCPH3

ON Semiconductor®
http://onsemi.com

Features

- | yfs | is large
- Ciss is small
- Small package
- FBET process
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSX}		15	V
Gate-to-Drain Voltage	V_{GDS}		−15	V
Gate Current	I_G		5	mA
Drain Current	I_D		50	mA
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (600mm^2×0.8mm)	300	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

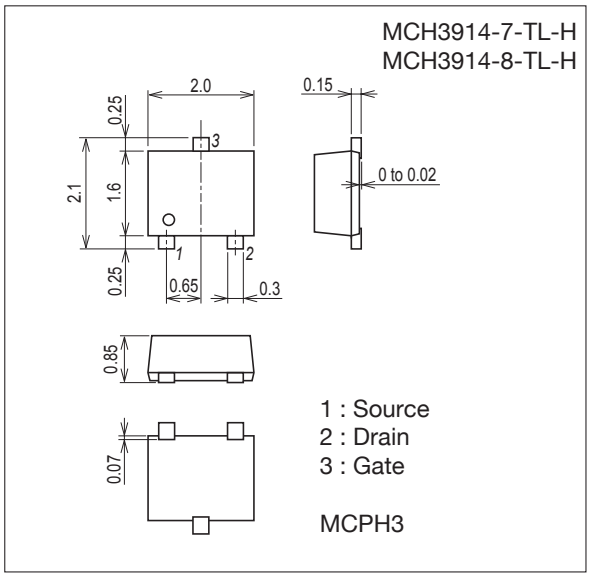
This product is designed to "ESD immunity < 200V*", so please take care when handling.

* Machine Model

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Package Dimensions

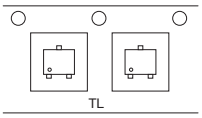
unit : mm (typ)
7019A-006



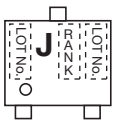
Product & Package Information

- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

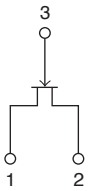
Packing Type : TL



Marking



Electrical Connection



ORDERING INFORMATION
See detailed ordering and shipping information on page 2 of this data sheet.

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G=−10μA, V_{DS}=0V	−15			V
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=−10V, V_{DS}=0V			−1.0	nA
Cutoff Voltage	V_{GS}(off)	V_{DS}=5V, I_D=10μA	−0.6	−1.4	−3.0	V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=5V, V_{GS}=0V	16.0*		50.0*	mA
Forward Transfer Admittance	| yfs |1	V_{DS}=5V, I_D=10mA, f=1kHz	14	21		mS
	| yfs |2	V_{DS}=5V, V_{GS}=0V, f=1kHz	14	29		mS
Input Capacitance	Ciss	V_{DS}=5V, V_{GS}=0V, f=1MHz		4.9		pF
Reverse Transfer Capacitance	Crss			1.4		pF

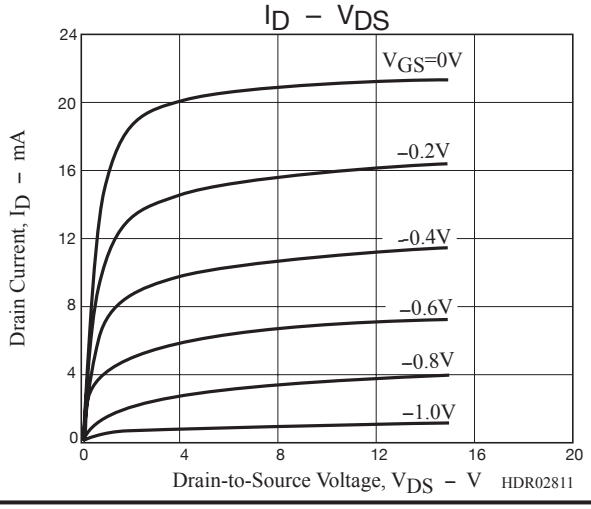
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

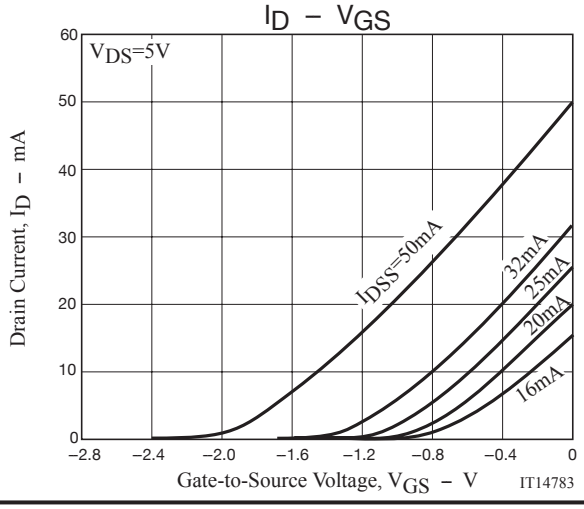
* : The MCH3914 is classified by I_{DSS} as follows : (unit : mA)

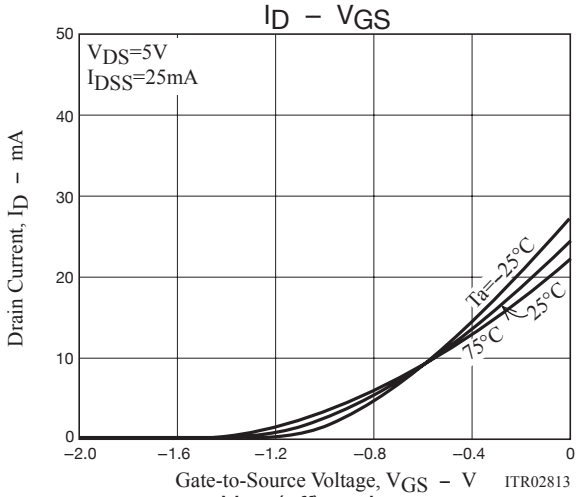
Rank	7	8
I_{DSS}	16.0 to 32.0	25.0 to 50.0

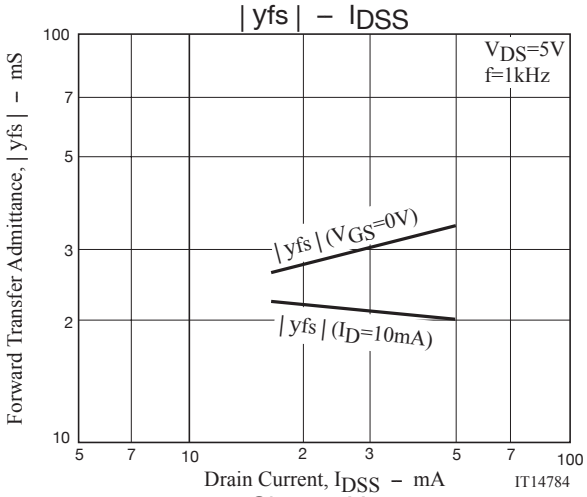
Ordering Information

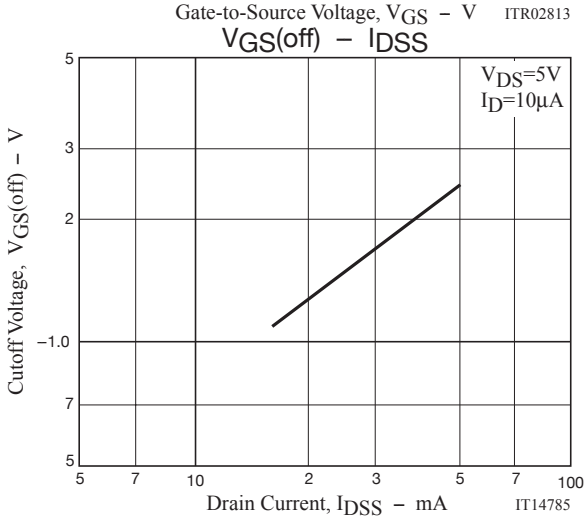
Device	Package	Shipping	memo
MCH3914-7-TL-H	MCPH3	3,000pcs./reel	Pb Free and Halogen Free
MCH3914-8-TL-H	MCPH3	3,000pcs./reel	

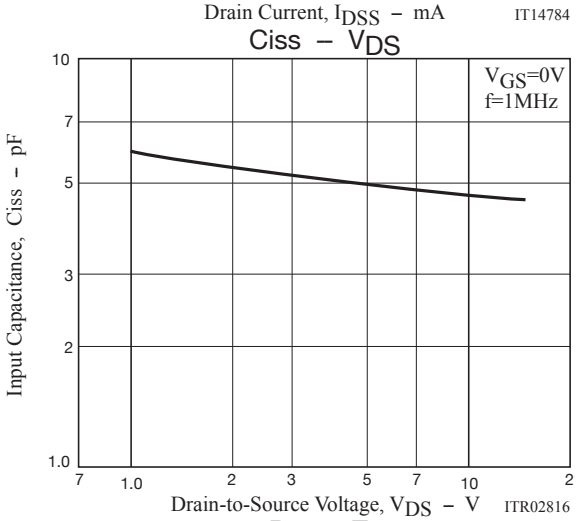


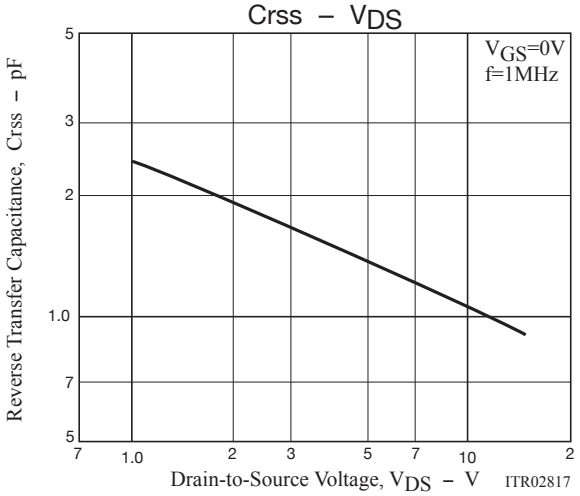


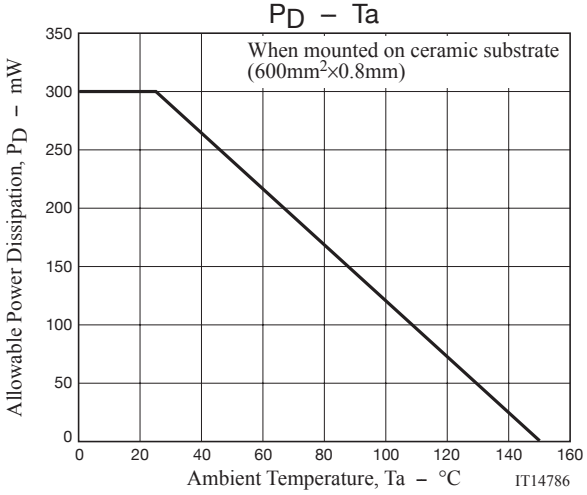

ID – VGS
VDS=5V
IDSS=25mA
Ta=–25°C
25°C
75°C
Drain Current, ID – mA
Gate-to-Source Voltage, VGS – V
ITR02813


| yfs | – IDSS
VDS=5V
f=1kHz
| yfs | (VGS=0V)
| yfs | (ID=10mA)
Forward Transfer Admittance, | yfs | – mS
Drain Current, IDSS – mA
IT14784


VGS(off) – IDSS
VDS=5V
ID=10μA
Cutoff Voltage, VGS(off) – V
Drain Current, IDSS – mA
IT14785

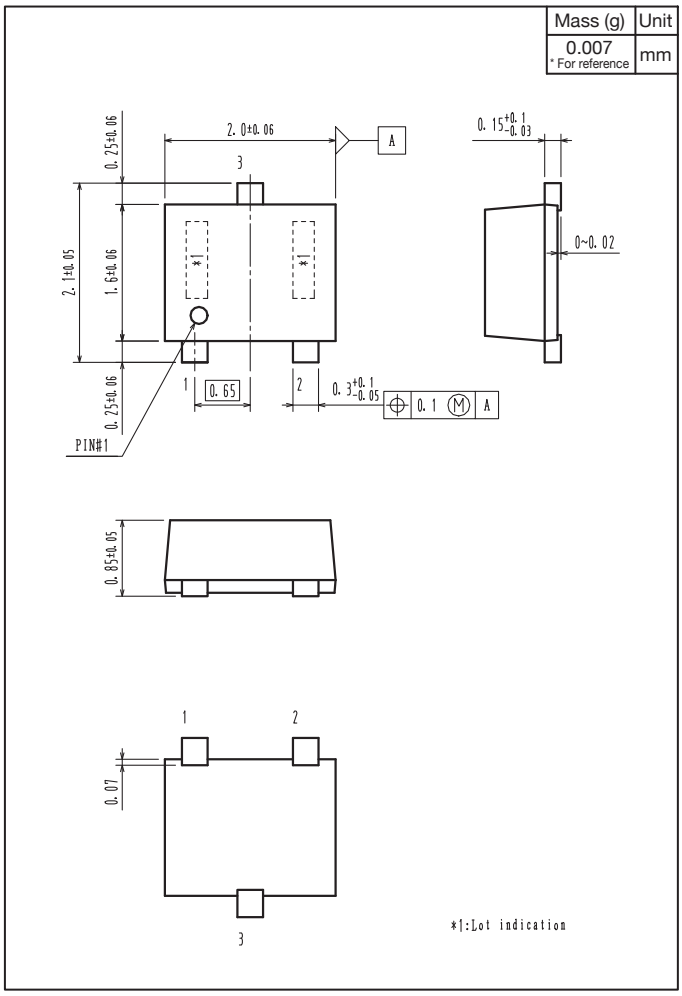

Ciss – VDS
VGS=0V
f=1MHz
Input Capacitance, Ciss – pF
Drain-to-Source Voltage, VDS – V
ITR02816


Crss – VDS
VGS=0V
f=1MHz
Reverse Transfer Capacitance, Crss – pF
Drain-to-Source Voltage, VDS – V
ITR02817


PD – Ta
When mounted on ceramic substrate
(600mm2×0.8mm)
Allowable Power Dissipation, PD – mW
Ambient Temperature, Ta – °C
IT14786

Outline Drawing

MCH3914-7-TL-H, MCH3914-8-TL-H



Land Pattern Example