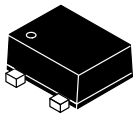
N-Channel JFET

15 V, 16 to 50 mA, 29 mS, MCPH3

MCH3914



MCPH3
CASE 419AQ

Features

- | yfs | is Large
- Ciss is Small
- Small Package
- FBET Process
- Pb−Free, Halogen Free/BFR Free and RoHS Compliant

Specifications

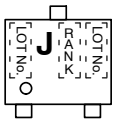
ABSOLUTE MAXIMUM RATINGS at T_A = 25°C

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 (600 mm^2 x 0.8 mm)	300	mW
Junction Temperature	T_J		150	°C
Storage Temperature	Tstg		−55 to +150	°C

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.

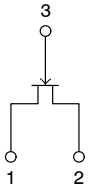
NOTE: This product is designed to “ESD immunity < 200 V*”, so please take care when handling.
* Machine Model

MARKING DIAGRAM



J = Specific Device Code

ELECTRICAL CONNECTION



1 : Source
2 : Drain
3 : Gate

ORDERING INFORMATION

Device	Package	Shipping†
MCH3914−7−TL−H	MCPH3 (Pb−Free, Halogen Free)	3000 / Tape & Reel
MCH3914−8−TL−H		

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS at T_A = 25°C

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

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

TYPICAL CHARACTERISTICS

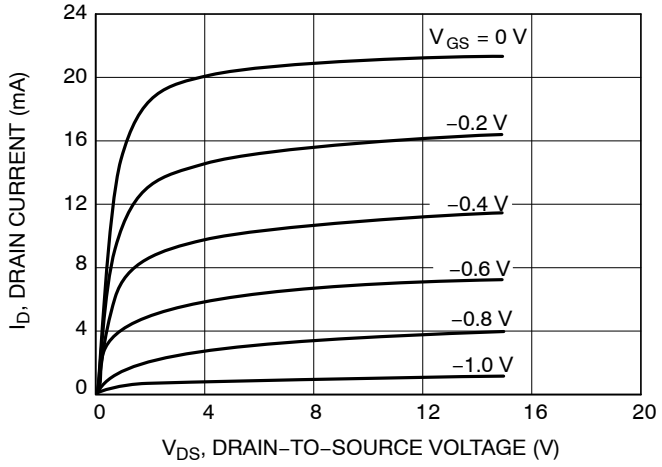


Figure 1. I_D – V_{DS}

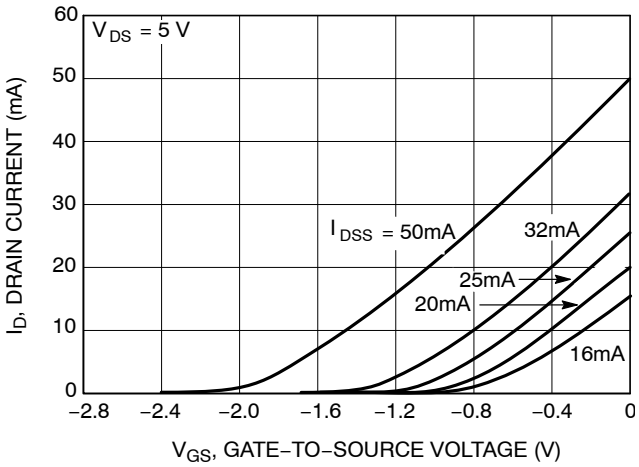


Figure 2. I_D – V_{GS}

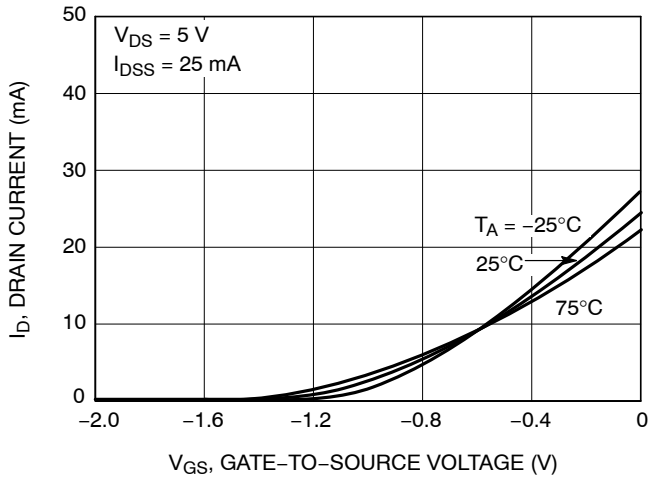


Figure 3. I_D – V_{GS}

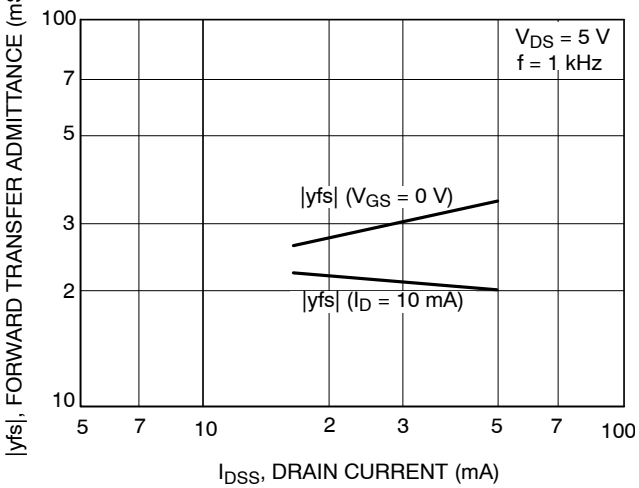


Figure 4. |yfs| – I_{DSS}

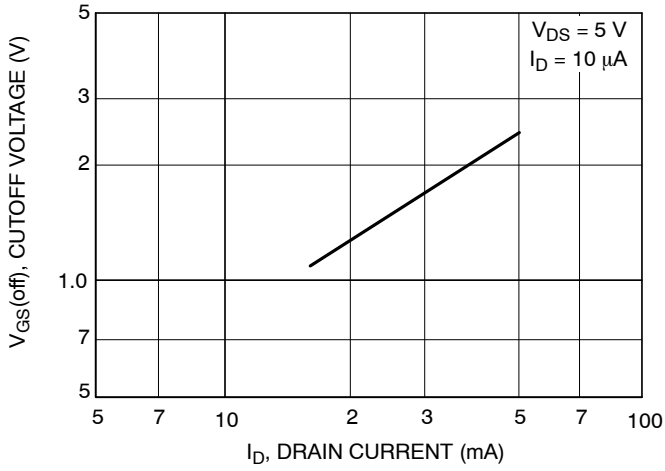


Figure 5. V_{GS}(off) – I_{DSS}

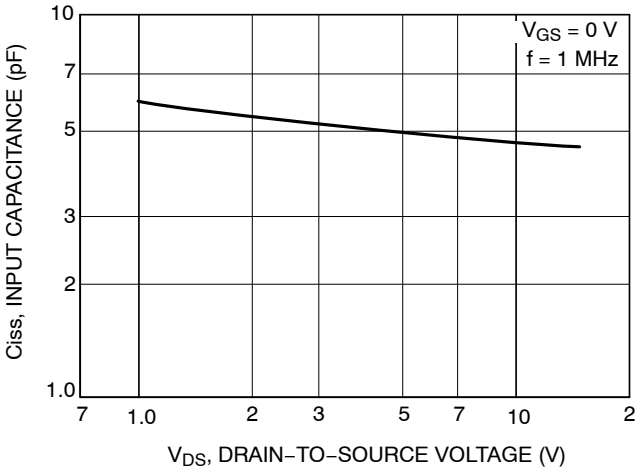


Figure 6. Ciss – V_{DS}

TYPICAL CHARACTERISTICS (CONTINUED)

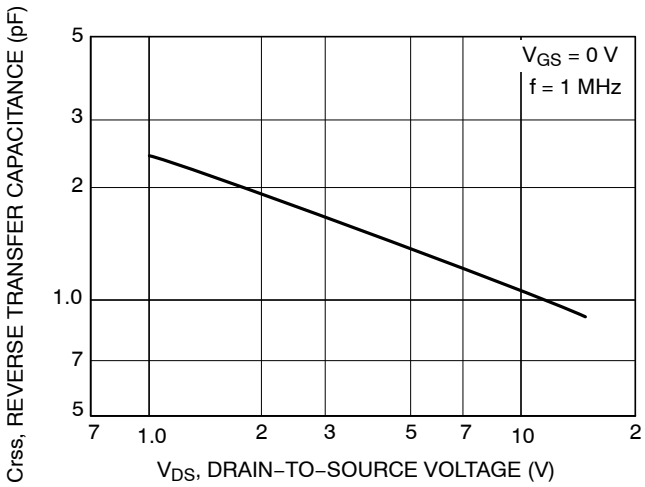


Figure 7. Crss – V_{DS}

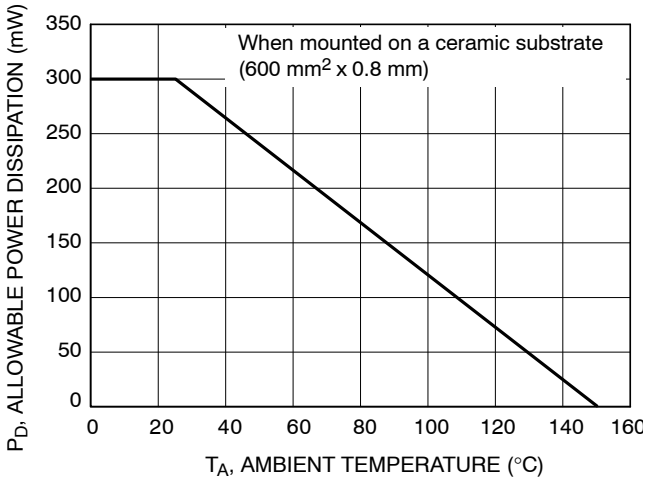


Figure 8. P_D – T_A

LAND PATTERN EXAMPLE

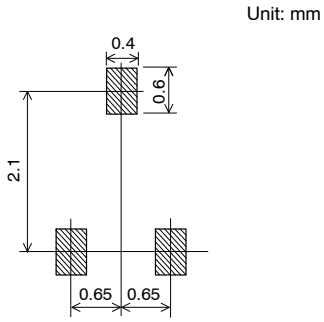
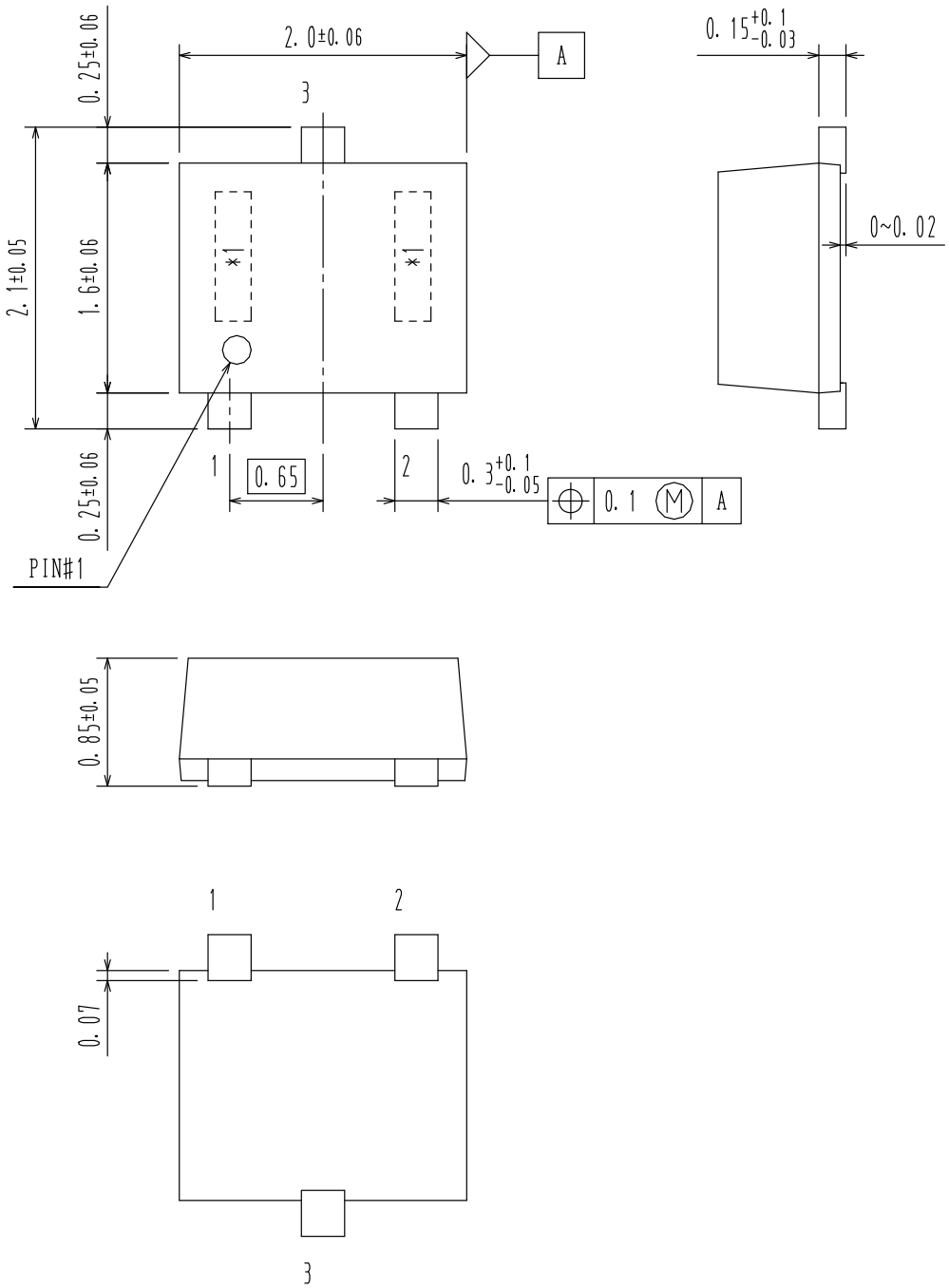


Figure 9. Land Pattern Example

SC−70FL / MCPH3
CASE 419AQ
ISSUE O

DATE 30 DEC 2011



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