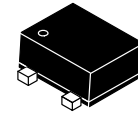


# N-Channel JFET

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 $T_A = 25^\circ\text{C}$

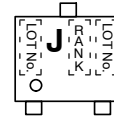
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSX}$		15	V
Gate-to-Drain Voltage	$V_{GDS}$		-15	V
Gate Current	$I_G$		5	mA
Drain Current	$I_D$		50	mA
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (600 mm <sup>2</sup> x 0.8 mm)	300	mW
Junction Temperature	$T_J$		150	°C
Storage Temperature	$T_{stg}$		-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.

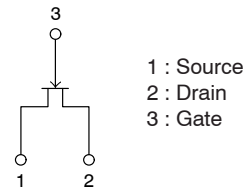
\* Machine Model

### MARKING DIAGRAM



J = Specific Device Code

### ELECTRICAL CONNECTION



### 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](#).

# MCH3914

## ELECTRICAL CHARACTERISTICS at $T_A = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			Min	Typ	Max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -10 \mu\text{A}, V_{DS} = 0 \text{ V}$	-15	-	-	V
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = -10 \text{ V}, V_{DS} = 0 \text{ V}$	-	-	-1.0	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 5 \text{ V}, I_D = 10 \mu\text{A}$	-0.6	-1.4	-3.0	V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 5 \text{ V}, V_{GS} = 0 \text{ V}$	16.0*	-	50.0*	mA
Forward Transfer Admittance	$ y_{fs} 1$	$V_{DS} = 5 \text{ V}, I_D = 10 \text{ mA}, f = 1 \text{ kHz}$	14	21	-	mS
	$ y_{fs} 2$	$V_{DS} = 5 \text{ V}, V_{GS} = 0 \text{ V}, f = 1 \text{ kHz}$	14	29	-	mS
Input Capacitance	$C_{iss}$	$V_{DS} = 5 \text{ V}, V_{GS} = 0 \text{ V}, f = 1 \text{ MHz}$	-	4.9	-	pF
Reverse Transfer Capacitance	$C_{rss}$		-	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

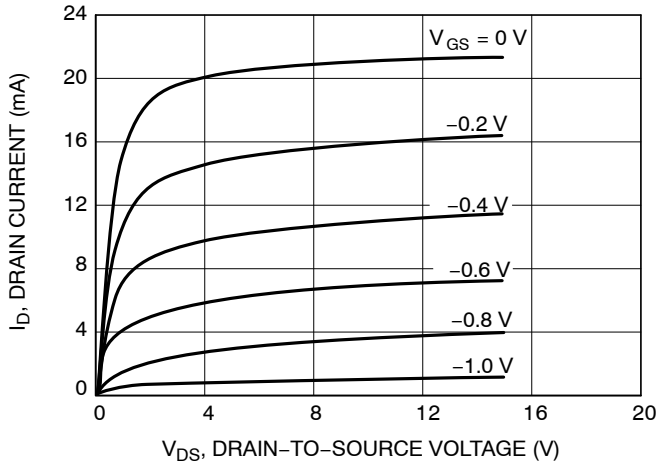


Figure 1.  $I_D - V_{DS}$

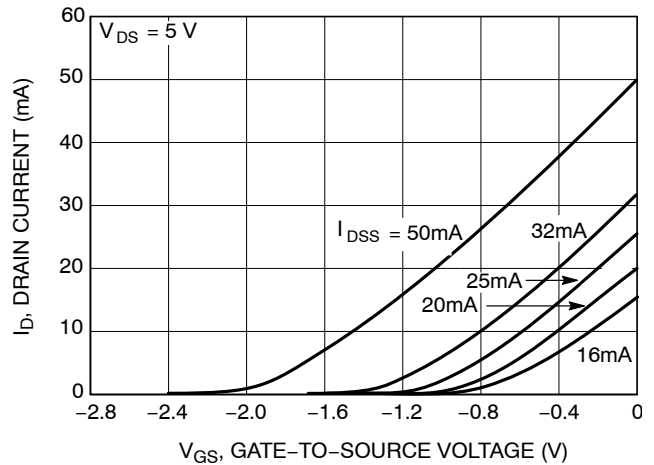


Figure 2.  $I_D - V_{GS}$

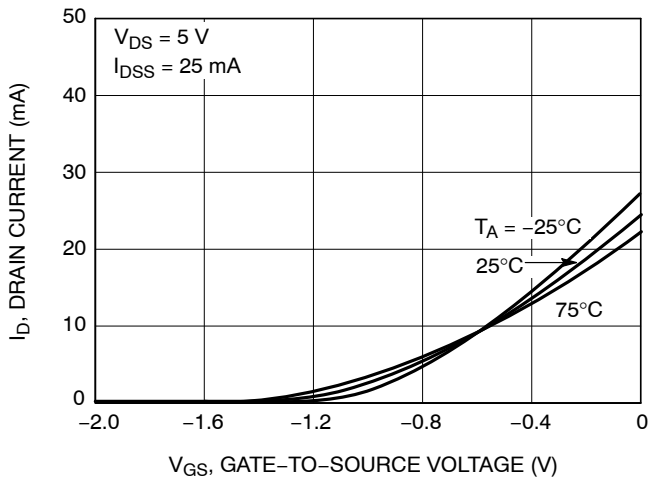


Figure 3.  $I_D - V_{GS}$

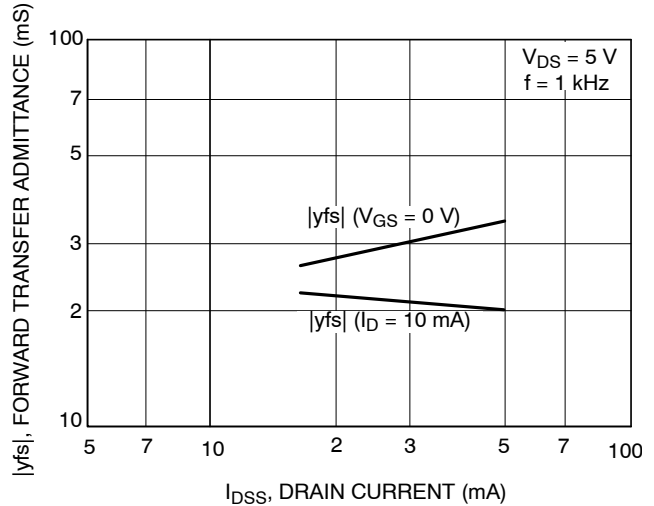


Figure 4.  $|y_{fs}| - I_{DSS}$

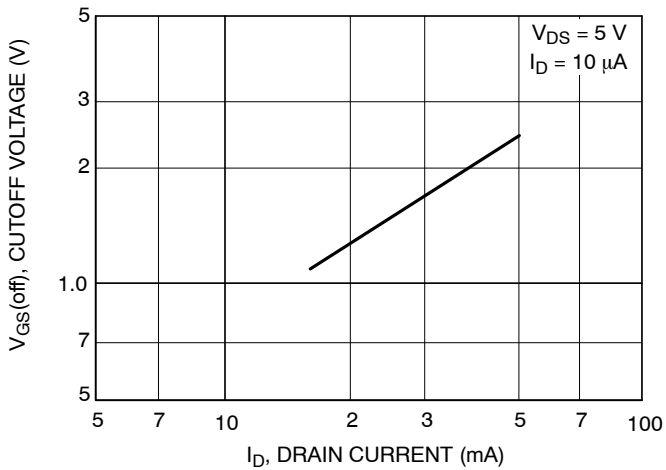


Figure 5.  $V_{GS(off)} - I_{DSS}$

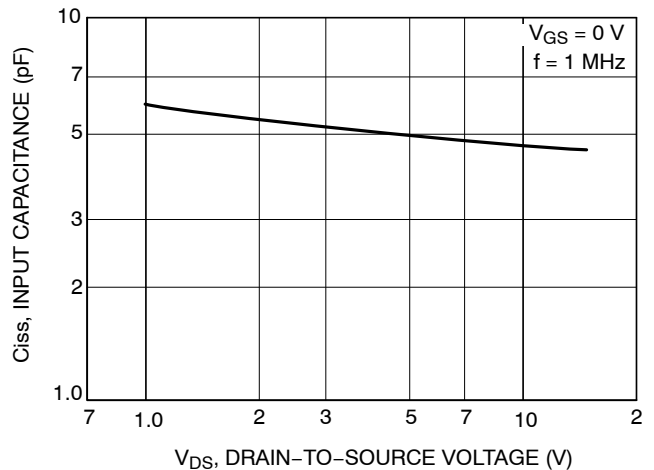


Figure 6.  $C_{iss} - V_{DS}$

TYPICAL CHARACTERISTICS (CONTINUED)

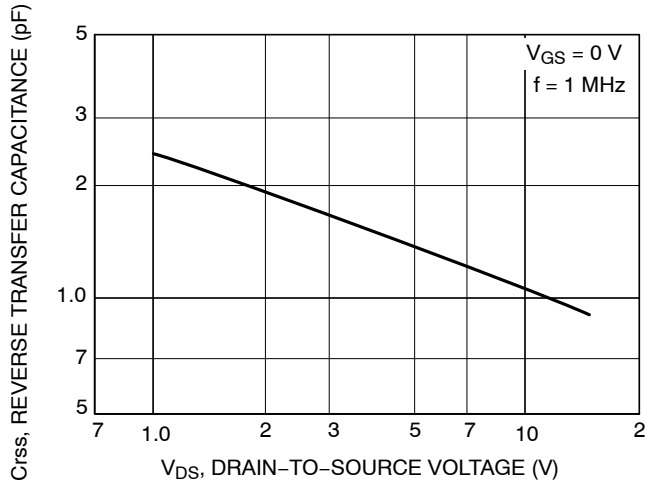


Figure 7. Crss - V<sub>DS</sub>

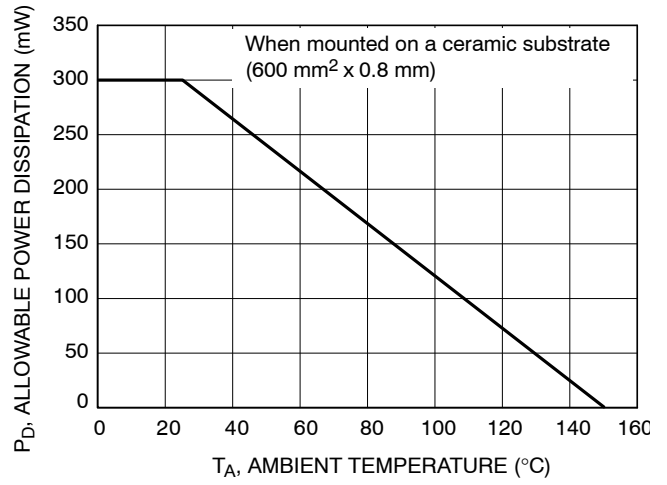


Figure 8. P<sub>D</sub> - T<sub>A</sub>

LAND PATTERN EXAMPLE

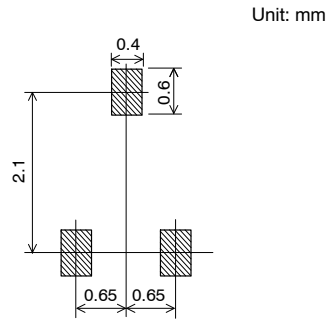
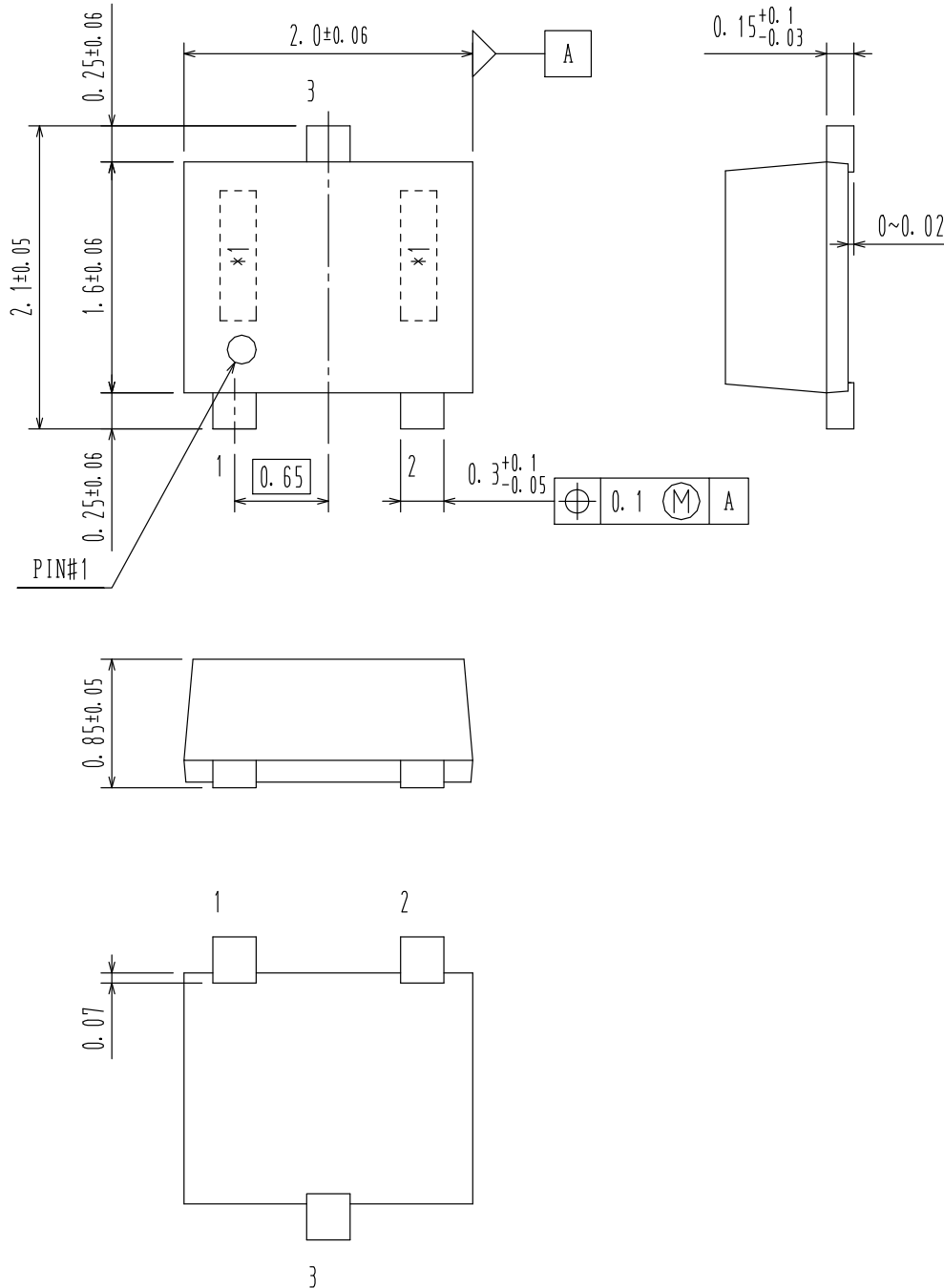


Figure 9. Land Pattern Example

SC-70FL / MCPH3  
CASE 419AQ  
ISSUE O

DATE 30 DEC 2011



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