

TECHNICAL DATA  
DATA SHEET 303, REV. B  
Formerly Part Number SHD2181/A/B

## HERMETIC POWER MOSFET N-CHANNEL

### FEATURES:

- 60 Volt, 0.027 Ohm, 45A MOSFET
- Isolated Hermetic Metal Package
- Fast Switching
- Low  $R_{DS(on)}$
- Equivalent to IRFM054 Series

### MAXIMUM RATINGS

ALL RATINGS ARE AT  $T_C = 25^\circ\text{C}$  UNLESS OTHERWISE SPECIFIED.

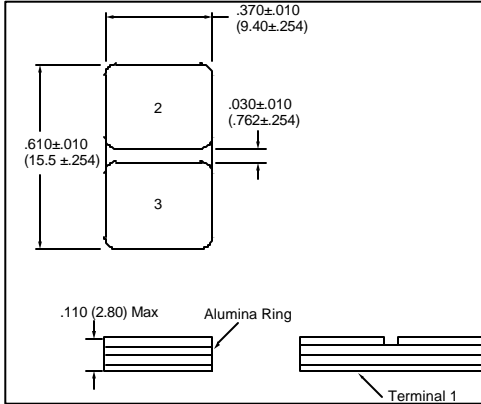
RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
GATE TO SOURCE VOLTAGE	$V_{GS}$	-	-	$\pm 20$	Volts
ON-STATE DRAIN CURRENT $V_{GS} = 10\text{V}$	$I_D$	-	-	45 35	Amps
					@ $T_C = 25^\circ\text{C}$ @ $T_C = 100^\circ\text{C}$
PULSED DRAIN CURRENT	$I_{DM}$	-	-	220	Amps
OPERATING AND STORAGE TEMPERATURE	$T_{OP}/T_{STG}$	-55	-	+150	$^\circ\text{C}$
TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$	$P_D$	-	-	200	Watts

### ELECTRICAL CHARACTERISTICS

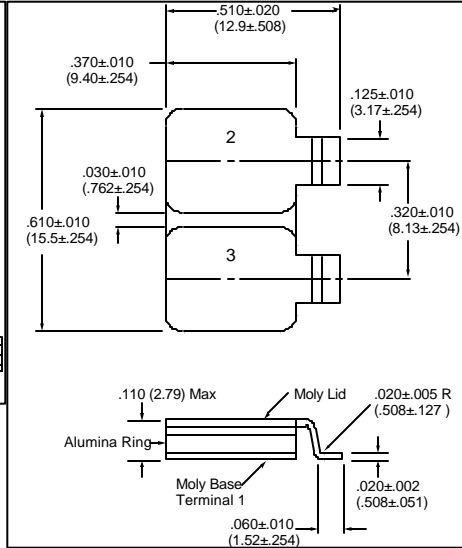
DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0\text{V}, I_D = 1.0\text{mA}$	$BV_{DSS}$	60	-	-	Volts
STATIC DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10\text{V}, I_D = 35\text{A}$	$R_{DS(ON)}$	-	-	0.027	$\Omega$
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	$V_{GS(th)}$	2.0	-	4.0	Volts
FORWARD TRANSCONDUCTANCE $V_{DS} \geq 15\text{V}, I_{DS} = 35\text{A}$	$g_{fs}$	20	-	-	$\text{S}(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT $V_{DS} = 0.8 \times \text{Max. Rating}, V_{GS} = 0\text{V}$ $V_{DS} = 0.8 \times \text{Max. Rating}, V_{GS} = 0\text{V}, T_J = 125^\circ\text{C}$	$I_{DSS}$	-	-	25 250	$\mu\text{A}$
GATE TO SOURCE LEAKAGE FORWARD $V_{GS} = 20\text{V}$	$I_{GSS}$	-	-	100	nA
GATE TO SOURCE LEAKAGE REVERSE $V_{GS} = -20\text{V}$				-100	
TURN ON DELAY TIME RISE TIME TURN OFF DELAY TIME FALL TIME $V_{DD} = 30\text{V}, I_D = 35\text{A}, R_G = 2.35\Omega$	$t_{d(ON)}$ $t_r$ $t_{d(OFF)}$ $t_f$	-	-	33 180 100 100	nsec
DIODE FORWARD VOLTAGE $T_C = 25^\circ\text{C}, I_S = 35\text{A}, V_{GS} = 0\text{V}$	$V_{SD}$	-	-	2.5	Volts
REVERSE RECOVERY TIME $T_J = 25^\circ\text{C}, I_F = 35\text{A}, di/ds \leq 100\text{A}/\mu\text{sec}, V_{DD} \leq 50\text{V}$	$t_{rr}$	-	-	280	nsec
INPUT CAPACITANCE OUTPUT CAPACITANCE REVERSE TRANSFER CAPACITANCE $V_{GS} = 0\text{V}$ $V_{DS} = 25\text{V}$ $f = 1.0\text{MHz}$	$C_{iss}$ $C_{oss}$ $C_{rss}$	-	4600 2000 340	-	pF
THERMAL RESISTANCE, JUNCTION TO CASE	$R_{thJC}$	-	-	0.6	$^\circ\text{C}/\text{W}$

**SENSITRON**  
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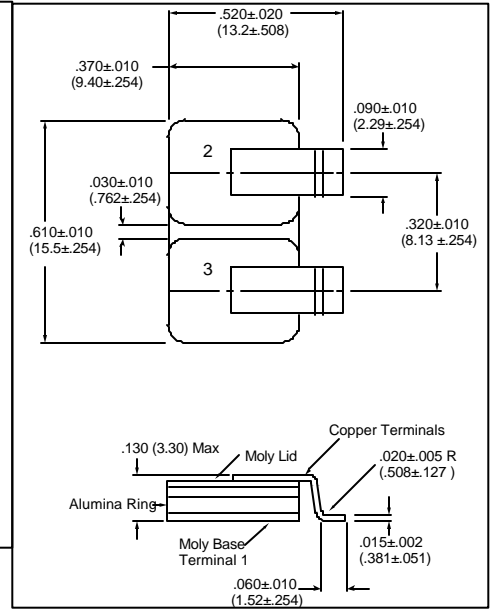
**MECHANICAL DIMENSIONS: in Inches / mm**



**SHD-5**



**SHD-5A**



**SHD-5B**

**PINOUT TABLE**

DEVICE TYPE	PIN 1	PIN 2	PIN 3
MOSFET, SURFACE MOUNT SHD-5, 5A, 5B PACKAGE	DRAIN	SOURCE	GATE

**TECHNICAL DATA**

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