

TECHNICAL DATA
DATA SHEET 1012, REV -
Formerly Part Number SHD2185/A/B

HERMETIC POWER MOSFET N-CHANNEL

FEATURES:

- 500 Volt, 0.3 Ohm, 9.0A MOSFET
- Low $R_{DS(on)}$
- Equivalent to IRF450 Series

MAXIMUM RATINGS

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

RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
GATE TO SOURCE VOLTAGE	V_{GS}	-	-	± 20	Volts
CONTINUOUS DRAIN CURRENT @ $T_C = 25^\circ\text{C}$	I_D	-	-	12	Amps
PULSED DRAIN CURRENT @ $T_C = 25^\circ\text{C}$	I_{DM}	-	-	48	Amps(pk)
OPERATING AND STORAGE TEMPERATURE	T_{OP}/T_{STG}	-55	-	+150	$^\circ\text{C}$
TERMAL RESISTANCE JUNCTION TO CASE	$R_{\theta JC}$	-	-	0.6	$^\circ\text{C/W}$
TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$	P_D	-	-	200	Watts

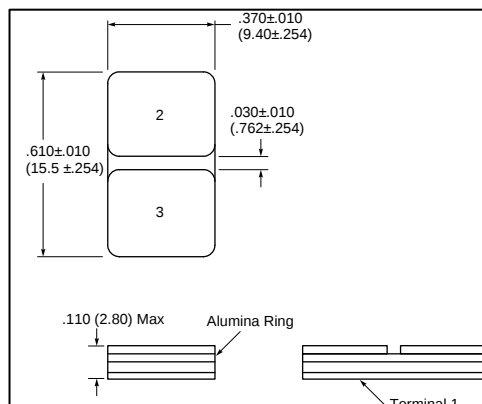
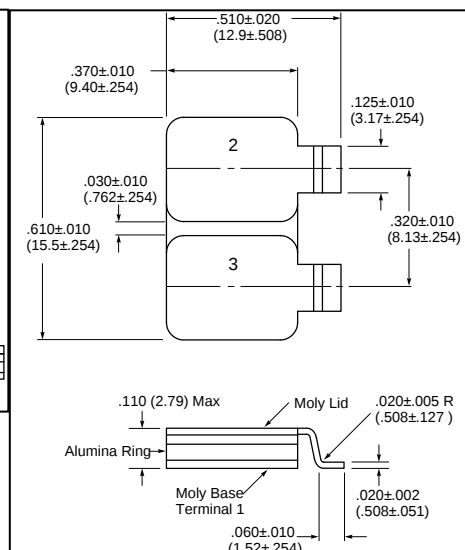
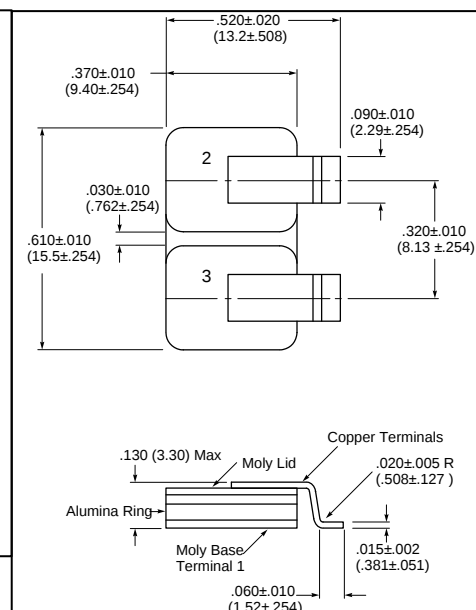
ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS
DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0V, I_D = 250\mu A$	BV_{DSS}	500	-	-	Volts
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu A$	$V_{GS(th)}$	2.0	-	4.0	
DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10Vdc, I_D = 8.0A$	$R_{DS(on)}$	-	-	0.415	Ω
PULSE TEST, $t \leq 300 \mu s$, DUTY CYCLE $d \leq 2\%$					
ZERO GATE VOLTAGE DRAIN CURRENT $V_{DS} = 0.8 \times \text{Max. Rating}, T_J = 25^\circ\text{C}$	I_{DSS}	-	-	25	μA
$V_{GS} = 0Vdc, T_J = 125^\circ\text{C}$				250	mA
GATE TO BODY LEAKAGE CURRENT $V_{GS} = \pm 20Vdc, V_{DS} = 0$	I_{GSS}	-	-	± 100	nA
TOTAL GATE CHARGE $V_{GS} = 10Vdc$	Q_g	55	-	120	nC
GATE TO SOURCE CHARGE $V_{DS} = 0.5V \times \text{Max. Rating}$	Q_{gs}	5.0	-	19	
GATE TO DRAIN CHARGE $I_D = 12A$	Q_{gd}	27	-	70	
TURN ON DELAY TIME $V_{DD} = 250V, I_D = 12,$	$t_{d(ON)}$	-	-	35	nsec
RISE TIME $R_G = 2.35\Omega$	t_r	-	-	190	
TURN OFF DELAY TIME	$t_{d(OFF)}$	-	-	170	
FALL TIME	t_f	-	-	130	
FORWARD VOLTAGE $I_S = 12A, V_{GS} = 0V$ PULSE TEST, $t \leq 300 \mu s$, DUTY CYCLE $d \leq 2\%$	V_{SD}	-	-	1.7	Volts
REVERSE RECOVERY TIME $I_F = 12A$	t_{rr}	-	1600	-	nsec
REVERSE RECOVERY CHARGE $di/dt = 100A/\mu sec, V_{DD} \leq 50V$	Q_{RR}	-	14	-	μC
INPUT CAPACITANCE $V_{DS} = 25Vdc,$	C_{iss}	-	2700	-	pF
OUTPUT CAPACITANCE $V_{GS} = 0Vdc,$	C_{oss}	-	600	-	
REVERSE TRANSFER CAPACITANCE $f = 1MHz$	C_{rss}	-	240	-	
DRAIN TO CASE CAPACITANCE	C_{DC}	-	12	-	

SENSITRON

DATA SHEET, 1012 REV. -

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

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