

TECHNICAL DATA  
DATA SHEET 623, REV -

## HERMETIC POWER MOSFET N-CHANNEL

### FEATURES:

- 600 Volt, 0.35 Ohm MOSFET
- Isolated and Hermetically Sealed
- Surface Mount Package
- Electrically equivalent to IXTM20N60

### MAXIMUM RATINGS

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

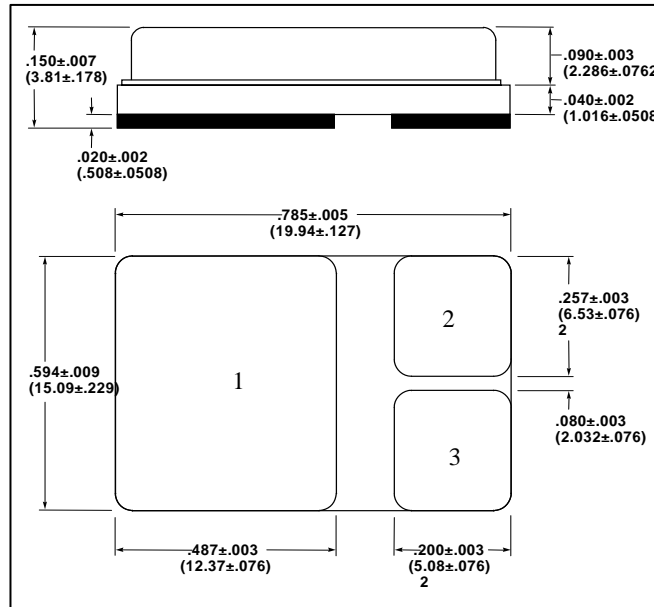
RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
GATE TO SOURCE VOLTAGE	$V_{GS}$	-	-	$\pm 20$	Volts
CONTINUOUS DRAIN CURRENT $V_{GS}=10\text{V}, T_C = 25^\circ\text{C}$	$I_D$	-	-	20	Amps
PULSED DRAIN CURRENT @ $T_C = 25^\circ\text{C}$	$I_{DM}$	-	-	80	Amps
OPERATING AND STORAGE TEMPERATURE	$T_{OP}/T_{STG}$	-55	-	+150	$^\circ\text{C}$
TERMAL RESISTANCE JUNCTION TO CASE	$R_{\theta JC}$	-	-	0.27	$^\circ\text{C}/\text{W}$
TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$	$P_D$	-	-	450	Watts

### ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS
DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	$BV_{DSS}$	600	-	-	Volts
DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10\text{V}, I_D = 10\text{A}$	$R_{DS(ON)}$	-	-	0.35	$\Omega$
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	$V_{GS(th)}$	2.0	-	4.5	Volts
FORWARD TRANSCONDUCTANCE $V_{DS} = 10\text{V}, I_D = 10\text{A}$	$g_{fs}$	11	18	-	$\text{S}(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT, $T_J = 25^\circ\text{C}$ ( $V_{DS} = 0.8 \times \text{Max. Rating}, V_{GS} = 0\text{V}$ ), $T_J = 125^\circ\text{C}$	$I_{DSS}$	-	-	250 1000	$\mu\text{A}$
GATE TO SOURCE LEAKAGE FORWARD GATE TO SOURCE LEAKAGE REVERSE $V_{GS} = -20\text{V}$	$I_{GSS}$	-	-	100 -100	nA
TOTAL GATE CHARGE $V_{GS} = 10\text{V},$ GATE TO SOURCE CHARGE $V_{DS} = 300\text{V},$ GATE TO DRAIN CHARGE $I_D = 10\text{A}$	$Q_g$ $Q_{gs}$ $Q_{gd}$	-	150 29 60	170 40 85	nC
TURN ON DELAY TIME $V_{DS} = 300\text{V},$ RISE TIME $I_D = 10\text{A},$ TURN OFF DELAY TIME $R_G = 2.0\Omega,$ FALL TIME $V_{GS} = 10\text{V}$	$t_{d(ON)}$ $t_r$ $t_{d(OFF)}$ $t_f$	-	20 43 70 40	40 60 90 60	nsec
DIODE FORWARD VOLTAGE $T_J = 25^\circ\text{C}, I_F = I_S,$ $V_{GS} = 0\text{V}$	$V_{SD}$	-	-	1.5	Volts
REVERSE RECOVERY TIME $T_J = 25^\circ\text{C},$ $I_F = I_S,$ $di/dt \leq 100\text{A}/\mu\text{sec}$	$t_{rr}$	-	600	-	nsec
INPUT CAPACITANCE $V_{GS} = 0\text{V}, V_{DS} = 25\text{V},$ OUTPUT CAPACITANCE $f=1\text{MHz}$ REVERSE TRANSFER CAPACITANCE	$C_{iss}$ $C_{oss}$ $C_{rss}$	-	4500 420 140	-	pF

**SENSITRON**  
**DATA SHEET 623**  
**REVISION -**

**MECHANICAL DIMENSIONS: in Inches / mm**



**SHD-6**

**PINOUT TABLE**

DEVICE TYPE	PIN 1	PIN 2	PIN 3
MOSFET SHD-6 PACKAGE	DRAIN	SOURCE	GATE

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