

TECHNICAL DATA
DATA SHEET 780, REV. -

**HERMETIC POWER MOSFET
N-CHANNEL**

FEATURES:

- 1000 Volt, 3.0 Ohm, 3A MOSFET
- Electrically Isolated, Hermetically Sealed
- Electrically Equivalent to MTC3N100E

MAXIMUM RATINGS

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

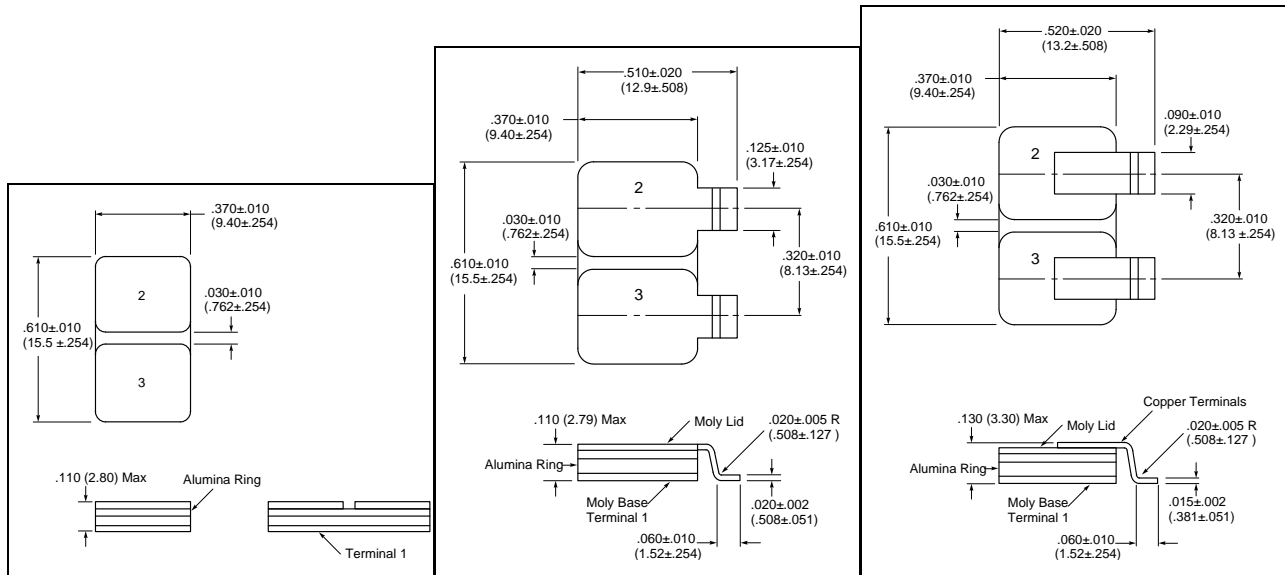
RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
GATE TO SOURCE VOLTAGE	V_{GS}	-	-	± 20	Volts
CONTINUOUS DRAIN CURRENT $V_{GS}=10\text{V}, T_C=25^\circ\text{C}$ $V_{GS}=10\text{V}, T_C=100^\circ\text{C}$	I_D	-	-	3.0 2.4	Amps
PULSED DRAIN CURRENT @ $T_C=25^\circ\text{C}$	I_{DM}	-	-	9.0	Amps
OPERATING AND STORAGE TEMPERATURE	T_{OP}/T_{STG}	-55	-	+150	$^\circ\text{C}$
TERMAL RESISTANCE JUNCTION TO CASE	$R_{\theta JC}$	-	-	0.89	$^\circ\text{C/W}$
TOTAL DEVICE DISSIPATION @ $T_C=25^\circ\text{C}$	P_D	-	-	140	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}	1000	-	-	Volts
DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS}=10\text{V}, I_D=1.5\text{A}$	$R_{DS(ON)}$	-	3.0	4.0	Ω
GATE THRESHOLD VOLTAGE $V_{DS}=V_{GS}, I_D=250\mu\text{A}$	$V_{GS(th)}$	2.0	-	4.0	Volts
FORWARD TRANSCONDUCTANCE $V_{DS}=15\text{V}, I_D=1.5\text{A}$	g_{fs}	2.0	3.56	-	$\text{S}(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT $V_{DS}=\text{Max. Rating}, V_{GS}=0\text{V}$ $V_{DS}=\text{Max. Rating}$ $V_{GS}=0\text{V}, T_J=125^\circ\text{C}$	I_{DSS}	-	-	10 100	μA
GATE TO SOURCE LEAKAGE FORWARD $V_{GS}=-20\text{V}$ 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 $V_{DS}=\text{Max. Rating} \times 0.5$ GATE TO DRAIN CHARGE $I_D=3.0\text{A}$	Q_g Q_{gs} Q_{gd}	-	32.5 6.0 14.6	-	nC
TURN ON DELAY TIME $V_{DD}=400\text{V}$ RISE TIME $I_D=3.0\text{A}$ TURN OFF DELAY TIME $R_G=9.1\Omega$ FALL TIME $V_{GS}=10\text{V}$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	-	13 19 42 33	25 40 90 55	nsec
DIODE FORWARD VOLTAGE $T_J=25^\circ\text{C}, I_S=3.0\text{A},$ $V_{GS}=0\text{V}$ $T_J=125^\circ\text{C}$	V_{SD}	-	-	1.1	Volts
DIODE REVERSE RECOVERY TIME $T_J=25^\circ\text{C},$ REVERSE RECOVERY CHARGE $I_S=3.0\text{A},$ $diS/dt=-100\text{A}/\mu\text{sec}$	t_{rr} Q_{rr}	-	615 2.92	-	nsec μC
INPUT CAPACITANCE $V_{GS}=0\text{V},$ OUTPUT CAPACITANCE $V_{DS}=25\text{V},$ REVERSE TRANSFER CAPACITANCE $f=1.0\text{MHz}$	C_{iss} C_{oss} C_{rss}	-	1316 117 26	1800 260 75	pF

**SENSITRON
DATA SHEET 780
REVISION -**

MECHANICAL DIMENSIONS: in Inches / mm



SHD-5

SHD-5A

SHD-5B

PINOUT TABLE

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

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