

TECHNICAL DATA
DATASHEET 307, REV –
Formerly Part Number SHD2257

HERMETIC POWER MOSFET N-CHANNEL

FEATURES:

- 900 Volt, 0.90 Ohm, 12A MOSFET
- Isolated Hermetic Metal Package
- Fast Switching
- Low $R_{DS(on)}$
- Similar to Industry Part Type - IXTM12N90

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 (continuous)	V_{GS}	-	-	± 20	Volts
ON-STATE DRAIN CURRENT	I_D	-	-	12	Amps
PULSED DRAIN CURRENT @ $T_C = 25^\circ\text{C}$	I_{DM}	-	-	48	Amps
OPERATING AND STORAGE TEMPERATURE	T_J/T_{STG}	-55	-	+150	$^\circ\text{C}$
TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$	P_D	-	-	180	Watts

ELECTRICAL CHARACTERISTICS

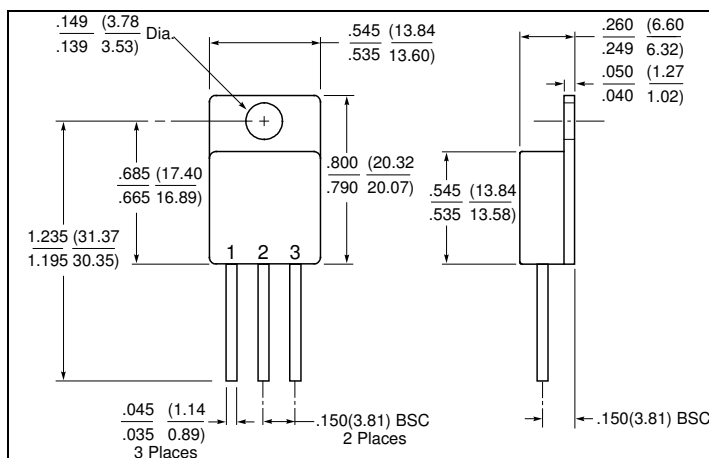
DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0V, I_D = 3.0$ mA	BV_{DSS}	900	-	-	Volts
STATIC DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10V, I_D = 0.5 \cdot I_{D25}$	$R_{DS(ON)}$	-	-	0.90	Ω
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	$V_{GS(th)}$	2.0	-	4.5	Volts
FORWARD TRANSCONDUCTANCE $V_{DS} = 10V; I_D = 0.5 \cdot I_{D25}$	g_{fs}	6.0	12	-	S(1/ Ω)
ZERO GATE VOLTAGE DRAIN CURRENT $V_{GS} = 0V, V_{DS} = 0.8 \cdot V_{DSS}$ $T_J = 125^\circ\text{C}$	I_{DSS}	-	-	0.25 1.0	mA
GATE TO SOURCE LEAKAGE FORWARD $V_{GS} = 20V$ GATE TO SOURCE LEAKAGE REVERSE $V_{GS} = -20V$	I_{GSS}	-	-	100 -100	nA
TURN ON DELAY TIME $V_{DS} = 0.5 \cdot V_{DSS},$ RISE TIME $I_D = 0.5 I_{D25},$ TURN OFF DELAY TIME $R_G = 2.0\Omega,$ FALL TIME $V_{GS} = 10V$	$t_{d(ON)}$ t_r $t_{d(OFF)}$ t_f	-	20 33 63 32	50 50 100 50	nsec
DIODE FORWARD VOLTAGE $I_F = I_S, V_{GS} = 0V$ Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2\%$	V_{SD}	-	-	1.5	Volts
REVERSE RECOVERY TIME $I_f = I_S,$ $di/dt = 100A/\mu\text{sec}, V_R = 100V$	t_{rr}	-	900	-	nsec
INPUT CAPACITANCE $V_{GS} = 0V$	C_{iss}	-	4500	-	pF
OUTPUT CAPACITANCE $V_{DS} = 25V$	C_{oss}	-	315	-	
REVERSE TRANSFER CAPACITANCE $f = 1.0\text{MHz}$	C_{rss}	-	65	-	
THERMAL RESISTANCE, JUNCTION TO CASE	R_{thJC}	-	-	0.7	$^\circ\text{C/W}$

SENSITRON

DATA SHEET 307

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MECHANICAL DIMENSIONS: in Inches / mm**TO-254****PINOUT TABLE**

DEVICE TYPE	PIN 1	PIN 2	PIN 3
MOSFET TO-254 PACKAGE	DRAIN	SOURCE	GATE

TECHNICAL DATA

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