

TECHNICAL DATA
DATA SHEET 4146, REV. A

LOW R_{DS} HERMETIC POWER MOSFET - N-CHANNEL

FEATURES:

- 100 Volt, 0.009 Ohm, 80A MOSFET for Glidcop version
- Isolated Hermetic Metal Package
- Ultra Low $R_{DS(on)}$
- Characterised at V_{GS} of 4.5V
- Ceramic Seals with Glidcop leads (SHDCG225701)

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}	-	-	± 20	Volts
ON-STATE DRAIN CURRENT	I_{D25}	-	-	80	Amps
PULSED DRAIN CURRENT	I_{DM}	-	-	240	Amps
OPERATING AND STORAGE TEMPERATURE	T_J/T_{STG}	-55	-	+150	$^\circ\text{C}$
TOTAL DEVICE DISSIPATION	P_D	-	-	270	Watts
THERMAL RESISTANCE, JUNCTION TO CASE	$R_{\theta JC}$	-	-	0.55	$^\circ\text{C/W}$

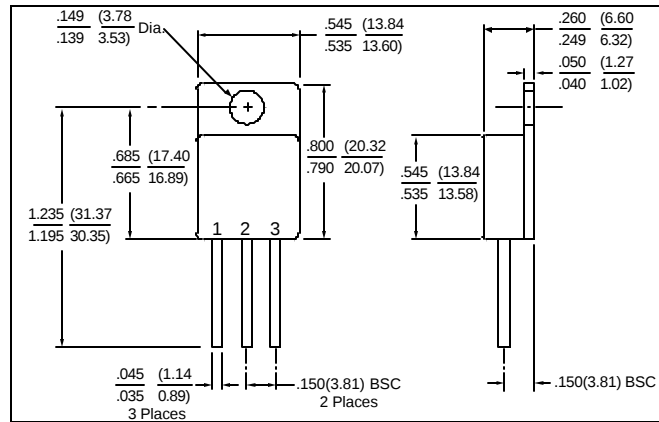
ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS
DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0V, I_D = 250\mu A$	BV_{DSS}	100	-	-	Volts
STATIC DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10V, I_D = 30A$ $V_{GS} = 4.5V, I_D = 20A$	$R_{DS(ON)}$ Glidcop Version	- -	0.009 0.010	0.010 0.012	Ω
STATIC DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10V, I_D = 30A$ $V_{GS} = 4.5V, I_D = 20A$	$R_{DS(ON)}$ Standard Version	- -	0.011 0.013	0.013 0.015	Ω
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu A$	$V_{GS(th)}$	1	-	3	Volts
FORWARD TRANSCONDUCTANCE $V_{DS} = 15V, I_D = 30A$	g_{fs}	25	-	-	$S(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT $V_{DS} = 0.8 \times \text{Max. rating}, V_{GS} = 0V, T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	I_{DSS}	-	-	1 50	μA
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 $V_{DD} = 50V$ RISE TIME $I_D = 85A$ TURN OFF DELAY TIME $V_{GS} = 10V$ FALL TIME $R_G = 2.5\Omega$	$t_{d(ON)}$ t_r $t_{d(OFF)}$ t_f	-	12 90 55 130	25 135 85 195	nsec
DIODE FORWARD VOLTAGE $I_F = 85A, V_{GS} = 0V$ Pulse test, $t \leq 300 \mu s$, duty cycle $d \leq 2\%$	V_{SD}	-	1.0	1.5	Volts
REVERSE RECOVERY TIME $T_J = 25^\circ\text{C}$ $I_F = 50A, V_R = 100V$ $di/dt = 100A/\mu sec$	t_{rr}	-	85	140	nsec
INPUT CAPACITANCE $V_{GS} = 0V$ OUTPUT CAPACITANCE $V_{DS} = 25V$ REVERSE TRANSFER CAPACITANCE $f = 1.0MHz$	C_{iss} C_{oss} C_{rss}	-	6550 665 265	-	pF

SENSITRON

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MECHANICAL DIMENSIONS: in Inches / mm



TO-254

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