

TECHNICAL DATA  
DATA SHEET 4151, REV. B

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

FEATURES:

- 100 Volt, 0.011 Ohm, 90A MOSFET for Glidcop version
- Isolated Hermetic Metal Package
- Ultra Low  $R_{DS(on)}$
- Ceramic Seals with Glidcop leads (SHDCG224701)

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	$V_{GS}$	-	-	$\pm 20$	Volts
ON-STATE DRAIN CURRENT	$I_{D25}$	-	-	70*	Amps
PULSED DRAIN CURRENT	$I_{DM}$	-	-	240	Amps
OPERATING AND STORAGE TEMPERATURE	$T_J/T_{STG}$	-55	-	+150	$^\circ\text{C}$
TOTAL DEVICE DISSIPATION	$P_D$	-	-	210	Watts
THERMAL RESISTANCE, JUNCTION TO CASE	$R_{\theta JC}$	-	-	0.6	$^\circ\text{C}/\text{W}$

Note: \* current limited by package; die rating is 90A

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS
DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	$BV_{DSS}$	100	-	-	Volts
STATIC DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10\text{V}, I_D = 30\text{A}$	$R_{DS(ON)}$ Glidcop Version	-	0.011	0.013	$\Omega$
STATIC DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10\text{V}, I_D = 30\text{A}$	$R_{DS(ON)}$ Standard Version	-	0.013	0.015	$\Omega$
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	$V_{GS(th)}$	2	-	4	Volts
FORWARD TRANSCONDUCTANCE $V_{DS} = 15\text{V}, I_D = 30\text{A}$	$g_{fs}$	25	-	-	$\text{S}(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT $V_{DS} = 0.8 \times \text{Max. rating}, V_{GS} = 0\text{V}, T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	$I_{DSS}$	-	-	1 50	$\mu\text{A}$
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
TURN ON DELAY TIME $V_{DD} = 50\text{V}$ RISE TIME $I_D = 55\text{A}$	$t_{d(ON)}$ $t_r$	-	20 110	30 170	nsec
TURN OFF DELAY TIME $V_{GS} = 10\text{V}$ FALL TIME $R_G = 2.5\Omega$	$t_{d(OFF)}$ $t_f$	-	65 100	100 150	nsec
DIODE FORWARD VOLTAGE $I_F = 30\text{A}, V_{GS} = 0\text{V}$ Pulse test, $t \leq 300 \mu\text{s}$ , duty cycle $d \leq 2\%$	$V_{SD}$	-	1.0	1.2	Volts
REVERSE RECOVERY TIME $T_J = 25^\circ\text{C}$ , $I_F = 30\text{A}, V_R = 100\text{V}$ $di/dt = 100\text{A}/\mu\text{sec}$	$t_{rr}$	-	70	140	nsec
INPUT CAPACITANCE $V_{GS} = 0\text{V}$ , OUTPUT CAPACITANCE $V_{DS} = 25\text{V}$ , REVERSE TRANSFER CAPACITANCE $f = 1.0\text{MHz}$	$C_{iss}$ $C_{oss}$ $C_{rss}$	-	8700 740 450	-	pF

