

TECHNICAL DATA
DATA SHEET 850, REV. A

HERMETIC POWER MOSFET N-CHANNEL

FEATURES:

- 60 Volt, 0.035 Ohm, 20A MOSFET
- Hermetic Surface Mount Package
- Fast Switching
- Low $R_{DS(on)}$
- Electricly Equivalent to IRFY044 Series

MAXIMUM RATINGS

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

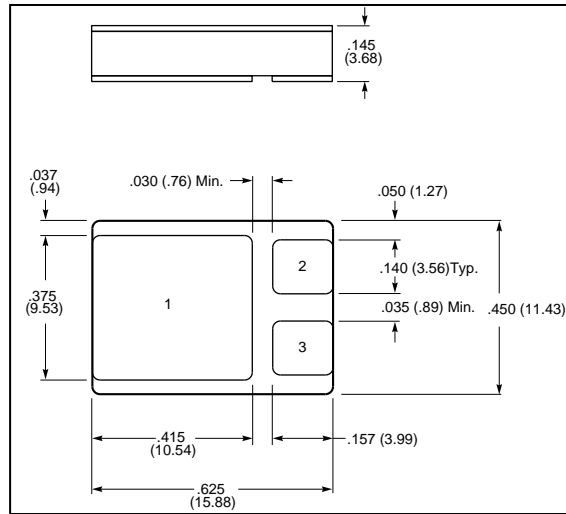
RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
GATE TO SOURCE VOLTAGE	V_{GS}	-	-	± 20	Volts
ON-STATE DRAIN CURRENT @ $T_C = 25^\circ\text{C}$	I_D	-	-	20	Amps
PULSED DRAIN CURRENT @ $T_C = 25^\circ\text{C}$	I_{DM}	-	-	128	Amps
OPERATING AND STORAGE TEMPERATURE	T_{OP}/T_{STG}	-55	-	+150	$^\circ\text{C}$
THERMAL RESISTANCE, JUNCTION TO CASE	R_{thJC}	-	-	0.65	$^\circ\text{C}/\text{W}$
TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$	P_D	-	-	80	Watts

ELECTRICAL CHARACTERISTICS

DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0\text{V}, I_D = 1.0\text{mA}$	BV_{DSS}	60	-	-	Volts
TOTAL GATE CHARGE $V_{GS} = 10\text{V}, I_D = 20\text{A}, V_{DS} = 0.5 \times V_{DS} \text{ Max.}$	Q_g	29	-	88	nC
GATE TO SOURCE ON-STATE VOLTAGE $V_{GS} = 10\text{V}, I_D = 20\text{A}, V_{DS} = 0.5 \times V_{DS} \text{ Max.}$	Q_{gs}	6.7	-	15	nC
GATE DRAIN CHARGE $V_{GS} = 10\text{V}, I_D = 20\text{A}, V_{DS} = 0.5 \times V_{DS} \text{ Max.}$	Q_{gd}	18	-	52	nC
STATIC DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10\text{V}, I_D = 10\text{A}$	$R_{DS(ON)}$	-	-	0.040	Ω
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	$V_{GS(th)}$	2.0	-	4.0	Volts
FORWARD TRANSCONDUCTANCE $V_{DS} \geq 15\text{V}, I_D = 20\text{A}$	g_{fs}	17	-	-	S(1/ Ω)
ZERO GATE VOLTAGE DRAIN CURRENT $V_{DS} = 0.8 \times \text{Max. Rating}, V_{GS} = 0\text{V}$ $V_{DS} = 0.8 \times \text{Max. Rating}, V_{GS} = 0\text{V}, T_J = 125^\circ\text{C}$	I_{DSS}	-	-	25 250	μA
GATE TO SOURCE LEAKAGE FORWARD $V_{GS} = 20\text{V}$	I_{GSS}	-	-	100	nA
GATE TO SOURCE LEAKAGE REVERSE $V_{GS} = -20\text{V}$				-100	
TURN ON DELAY TIME $V_{DD} = 30\text{V}, I_D = 20\text{A}$	$t_{d(ON)}$	-	-	23	nsec
RISE TIME	t_r			130	
TURN OFF DELAY TIME $R_G = 9.1\Omega, V_{GS} = 10\text{V}$	$t_{d(OFF)}$			81	
FALL TIME	t_f			79	
DIODE FORWARD VOLTAGE $T_C = 25^\circ\text{C}, I_S = 20\text{A}, V_{GS} = 0\text{V}$	V_{SD}	-	-	2.5	Volts
REVERSE RECOVERY TIME $T_J = 25^\circ\text{C}, I_S = 20\text{A}, di/ds \leq 100\text{A}/\mu\text{sec}, V_{DD} \leq 50\text{V}$	t_{rr}	-	-	220	nsec
INPUT CAPACITANCE $V_{GS} = 0\text{V}$	C_{iss}	-	2400	-	pF
OUTPUT CAPACITANCE $V_{DS} = 25\text{V}$	C_{oss}		1100		
REVERSE TRANSFER CAPACITANCE $f = 1.0\text{MHz}$	C_{rss}		230		

SENSITRON
DATA SHEET 850, REV A

MECHANICAL DIMENSIONS: in Inches / mm



SMD-1

PINOUT TABLE

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

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