

TECHNICAL DATA  
DATA SHEET 5404, REV. -

## HERMETIC RAD HARD POWER MOSFET

### FEATURES:

- Low RDS(on)
- Single Event Effect (SEE) hardened,
  - LET 55, Range: 90 $\mu$ m
    - VGS = -20V, VDS = 100V
- Total Ionization Dose (TID) hardened, 100kRad
- Isolated TO-257 package
- Near equivalent to IRHY7130CM

### MAXIMUM RATINGS

ALL RATINGS ARE AT T<sub>c</sub> = 25°C UNLESS OTHERWISE SPECIFIED.

RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
DRAIN TO SOURCE VOLTAGE	V <sub>DS</sub>	-	-	100	Volts
GATE TO SOURCE VOLTAGE	V <sub>GS</sub>	-	-	±20	Volts
ON-STATE DRAIN CURRENT (T <sub>c</sub> = 25°C)	I <sub>D</sub>	-	-	12.4	Amps
ON-STATE DRAIN CURRENT (T <sub>c</sub> = 100°C)	I <sub>D</sub>	-	-	8	Amps
PULSED DRAIN CURRENT (LIMITED BY T <sub>JMAX</sub> )	I <sub>DM</sub>	-	-	50	Amps
OPERATING AND STORAGE TEMPERATURE	T <sub>OP</sub> /T <sub>STG</sub>	-55	-	+150	°C
TOTAL DEVICE DISSIPATION	P <sub>D</sub>	-	-	75	Watts
THERMAL RESISTANCE, JUNCTION TO CASE	R <sub>thJC</sub>	-	-	1.66	°C/W
SINGLE PULSE AVALANCHE (LIMITED BY T <sub>JMAX</sub> )	E <sub>AS</sub>	-	60	-	mJ

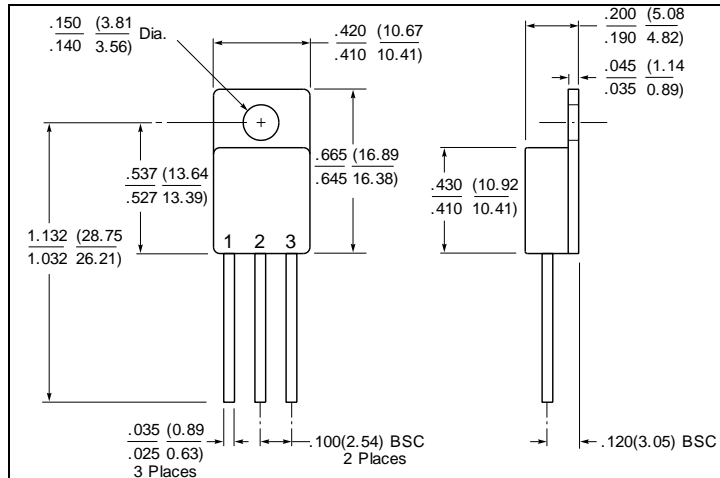
### ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS
DRAIN SOURCE BREAKDOWN V <sub>GS</sub> = 0V, I <sub>D</sub> = 250 $\mu$ A	B <sub>VDSS</sub>	100	-	-	Volts
STATIC DRAIN TO SOURCE ON STATE RESISTANCE V <sub>GS</sub> = 10V, I <sub>D</sub> = 8A	R <sub>DS(ON)</sub>	-	-	0.13	$\Omega$
GATE THRESHOLD VOLTAGE V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 1mA	V <sub>GS(th)</sub>	2.0	-	4.0	Volts
ZERO GATE VOLTAGE DRAIN CURRENT V <sub>DS</sub> = 80V, V <sub>GS</sub> = 0V	I <sub>DSS</sub>	-	-	25	$\mu$ A
GATE TO SOURCE LEAKAGE FORWARD V <sub>GS</sub> = 20V	I <sub>GSS</sub>	-	-	100	nA
GATE TO SOURCE LEAKAGE REVERSE V <sub>GS</sub> = -20V	I <sub>GSS</sub>	-	-	-100	nA
TURN ON DELAY TIME V <sub>DD</sub> = 0.5V <sub>DS</sub> , I <sub>D</sub> = 8A,	t <sub>d(ON)</sub>	-	-	25	nsec
RISE TIME	t <sub>r</sub>	-	-	25	
TURN OFF DELAY TIME R <sub>G</sub> = 4.7 $\Omega$	t <sub>d(OFF)</sub>	-	-	35	
FALL TIME	t <sub>f</sub>	-	-	20	
DIODE FORWARD VOLTAGE I <sub>S</sub> = 12.4A	V <sub>SD</sub>	-	-	1.2	Volts
REVERSE RECOVERY TIME I <sub>f</sub> = 12.4A, di/dt = 100A/ $\mu$ s	t <sub>rr</sub>	-	-	400	nsec
INPUT CAPACITANCE V <sub>GS</sub> = 0 V	C <sub>iss</sub>	-	1600	-	pF
OUTPUT CAPACITANCE V <sub>DS</sub> = 100 V	C <sub>oss</sub>	-	120	-	
REVERSE TRANSFER CAPACITANCE f = 1.0MHZ	C <sub>riss</sub>	-	3	-	
TOTAL GATE CHARGE V <sub>DD</sub> = 0.5V <sub>DS</sub> , I <sub>D</sub> = 12.4A, V <sub>GS</sub> = 10V	Q <sub>G</sub>	-	-	42	nC

**\*\*NOTE:** This product is subject to the International Traffic in Arms Regulations (ITAR), 22 C.F.R. Parts 120 - 130, and may not be exported without the appropriate U.S. Department of State authorization.

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**MECHANICAL DIMENSIONS: in Inches / mm**



**TO-257**

DEVICE TYPE	PIN-1	PIN-2	PIN-3
N-CHANNEL MOSFET TO-257 PACKAGE	DRAIN	SOURCE	GATE

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