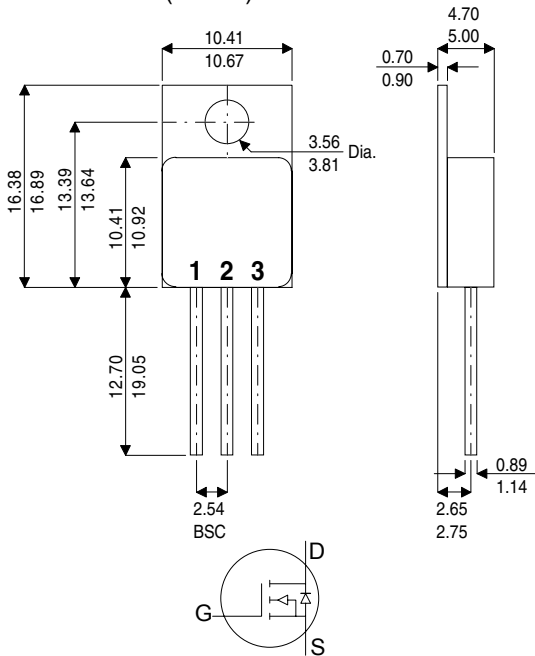


MECHANICAL DATA

Dimensions in mm (inches)



N-CHANNEL POWER MOSFET FOR HI-REL APPLICATIONS

BV_{DSS} 400V
 I_D 8.7A
 $R_{DS(on)}$ 0.55 Ω

FEATURES

- HERMETICALLY SEALED TO-220 METAL PACKAGE
- SIMPLE DRIVE REQUIREMENTS
- ALL LEADS ISOLATED FROM CASE
- LIGHTWEIGHT
- SCREENING OPTIONS AVAILABLE

TO-220M (TO-257AB)

Pin 1 – Gate Pin 2 – Drain Pin 3 – Source

ABSOLUTE MAXIMUM RATINGS $T_{CASE} = 25^\circ\text{C}$ unless otherwise stated

V_{DS}	Drain - Source Voltage	400V
V_{GS}	Gate - Source Voltage	$\pm 20\text{V}$
I_D	Drain Current - Continuous ($T_C = 25^\circ\text{C}$)	8.7A
I_D	Drain Current - Continuous ($T_C = 100^\circ\text{C}$)	5.5A
I_{DM}	Drain Current - Pulsed ¹	35A
P_D	Total Power Dissipation at $T_{CASE} \leq 25^\circ\text{C}$	100W
	De-rate Linearly above 25°C	0.8W/ $^\circ\text{C}$
T_j, T_{stg}	Operating Junction and Storage Temperature Range	-55 to $+150^\circ\text{C}$
T_L	Lead Temperature (for 5 sec)	300 $^\circ\text{C}$
$R_{thj-case}$	Thermal Resistance Junction - Case	1.25 $^\circ\text{C}/\text{W}$

NOTES: 1) Pulse Width limited by maximum junction temperature.
 2) Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle, δ 2%

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STATIC ELECTRICAL RATINGS (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain – Source Breakdown Voltage	V _{GS} = 0V I _D = 1.0mA	400	-	-	V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I _D = 1.0mA	-	0.46	-	V/°C
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 320V V _{GS} = 0V T _J = 125°C	-	-	25	μA
			-	-	250	
I _{GSS}	Gate – Source Leakage Current	V _{GS} = ±20V V _{DS} = 0V	-	-	±100	nA
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} = V _{GS} I _D = 250μA	2.0	-	4.0	V
R _{DS(ON)}	Drain – Source On State Resistance	V _{GS} = 10V I _D = 5.5A	-	-	0.55	Ω
		V _{GS} = 10V I _D = 8.7A	-	-	0.63	Ω
g _{FS}	Forward Transconductance ²	V _{DS} ≥ 15V I _D = 5.5A	4.9	-	-	S

DYNAMIC CHARACTERISTICS

C _{iss}	Input Capacitance	V _{DS} = 25V f = 1.0MHz V _{GS} = 0V	-	1400	-	pF
C _{oss}	Output Capacitance		-	350	-	
C _{rss}	Reverse Transfer Capacitance		-	230	-	
Q _g	Total Gate Charge ²	V _{DS} = 200V V _{GS} = 10V I _D = 8.7A	-	-	65	nC
Q _{gs}	Gate – Source Charge ²		-	-	10	
Q _{gd}	Gate – Drain Charge ²		-	-	40.5	
T _{d(on)}	Turn-On Delay	V _{DD} = 200V R _G = 9.1Ω I _D = 8.7A V _{GS} = 10V	-	-	25	ns
t _r	Rise Time		-	-	92	
T _{d(off)}	Turn-Off Delay Time		-	-	79	
t _f	Fall Time		-	-	58	

SOURCE – DRAIN DIODE RATINGS AND CHARACTERISTICS

I _S	Continuous Source Current (MAX)		-	-	8.7	A
I _{SM}	Pulsed Source Current (MAX)		-	-	35	
V _{SD}	Diode Forward Voltage ²	V _{GS} = 0V I _S = 8.7A	-	-	1.5	V
t _{rr}	Reverse Recovery Time ²	V _{GS} = 0V I _S = 8.7A	-	-	600	ns
Q _{rr}	Reverse Recovery Charge ²	di/dt = 100A/μs V _{DD} ≤ 50V	-	-	5.6	μC
T _{on}	Forward Turn-On Time		Negligible			

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