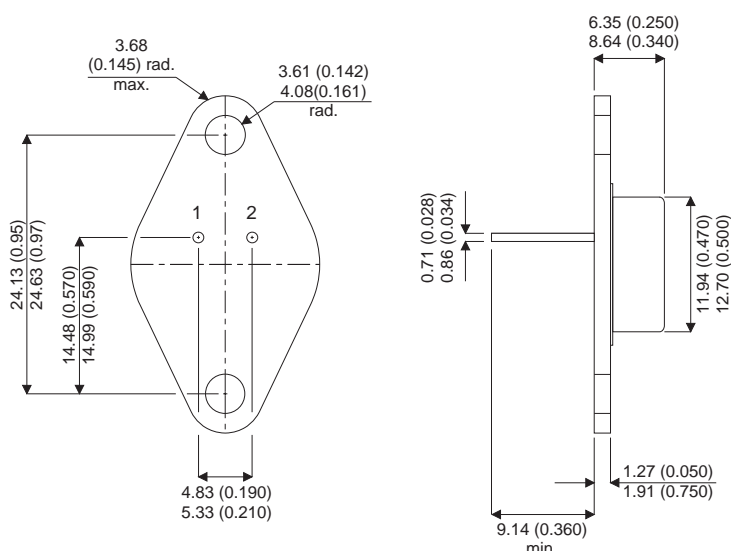


MECHANICAL DATA

Dimensions in mm (inches)


TO-66 METAL PACKAGE (TO213AA)

Underside View

Pin 1 = Gate Pin 2 = Source Case = Drain

**N-CHANNEL
POWER MOSFET
FOR HI-REL
APPLICATIONS**

V_{DSS} **200V**
 $I_{D(cont)}$ **13A**
 $R_{DS(on)}$ **0.18Ω**

FEATURES

- HERMETICALLY SEALED TO-66 METAL PACKAGE
- SIMPLE DRIVE REQUIREMENTS
- SCREENING OPTIONS AVAILABLE

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{GS}	Gate – Source Voltage	$\pm 20V$
I_D	Continuous Drain Current @ $T_{case} = 25^{\circ}C$	13A
I_D	Continuous Drain Current @ $T_{case} = 100^{\circ}C$	8A
I_{DM}	Pulsed Drain Current	50A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	70W
	Linear Derating Factor	0.56W/ $^{\circ}C$
T_J, T_{stg}	Operating and Storage Temperature Range	-55 to $150^{\circ}C$
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.8 $^{\circ}C/W$ max.
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	50 $^{\circ}C/W$ max.

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ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS							
BV _{DSS}	Drain – Source Breakdown Voltage	V _{GS} = 0	I _D = 250μA	200			V
ΔBV _{DSS} ΔT _J	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I _D = 1mA			1.42		V/°C
R _{DS(on)}	Static Drain – Source On–State Resistance	V _{GS} = 10V	I _D = 7A*		0.14	0.18	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS}	I _D = 250μA	2		4	V
g _{fs}	Forward Transconductance	V _{DS} ≥ I _D × R _{DS(on)} I _D = 7A*		6	9		S(Ω)
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} = 0	V _{DS} = 0.8BV _{DSS}			250	μA
		T _J = 125°C				1000	
I _{GSS}	Forward Gate – Source Leakage	V _{GS} = 20V				100	nA
I _{GSS}	Reverse Gate – Source Leakage	V _{GS} = –20V				-100	
DYNAMIC CHARACTERISTICS							
C _{iss}	Input Capacitance	V _{GS} = 0			1275		pF
C _{oss}	Output Capacitance	V _{DS} = 25V			500		
C _{rss}	Reverse Transfer Capacitance	f = 1MHz			160		
Q _g	Total Gate Charge	V _{GS} = 10V I _D = 16A			43	60	nC
Q _{gs}	Gate – Source Charge	V _{DS} = 0.8BV _{DSS}			16		
Q _{gd}	Gate – Drain (“Miller”) Charge				27		
t _{d(on)}	Turn–On Delay Time	V _{DD} = 75V			16	30	ns
t _r	Rise Time	I _D = 7A			27	60	
t _{d(off)}	Turn–Off Delay Time	Z ₀ = 4.7Ω			40	80	
t _f	Fall Time				31	60	
SOURCE – DRAIN DIODE CHARACTERISTICS							
I _S	Continuous Source Current					13	A
I _{SM}	Pulse Source Current					50	
V _{SD}	Diode Forward Voltage	I _S = 13A T _J = 25°C V _{GS} = 0				2	V
t _{rr}	Reverse Recovery Time	I _F = 13A T _J = 25°C				650	ns
Q _{rr}	Reverse Recovery Charge	d _i / d _t ≤ 100A/μs V _{DD} ≤ 50V				4.1	μC
PACKAGE CHARACTERISTICS							
L _D	Internal Drain Inductance	(from 6mm down drain lead pad to centre of die)			5.0		nH
L _S	Internal Source Inductance	(from 6mm down source lead to centre of source bond pad)			12.5		

* Pulse width $\leq 300\mu\text{s}$; Duty Cycle $\leq 2\%$

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