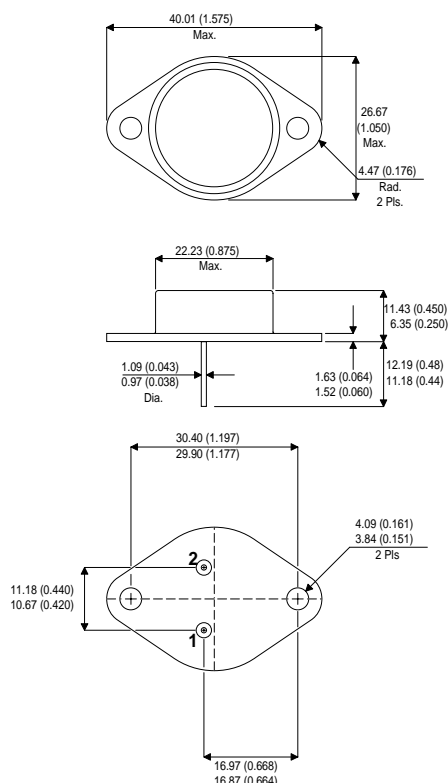


MECHANICAL DATA

Dimensions in mm (inches)


TO3 METAL PACKAGE (TO204AA)
Underside View

Pin 1 = Gate

Pin 2 = Source

Case = Drain

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

V_{DSS}	200V
$I_{D(cont)}$	18A
$R_{DS(on)}$	0.18Ω

FEATURES

- HERMETICALLY SEALED TO3 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 @ $T_{case} = 25^{\circ}C$	18A
I_D	Continuous Drain Current @ $T_{case} = 100^{\circ}C$	11A
I_{DM}	Pulsed Drain Current	72A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	125W
	Linear Derating Factor	1.0W/ $^{\circ}C$
T_J, T_{stg}	Operating and Storage Temperature Range	-55 to $150^{\circ}C$
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.0 $^{\circ}C/W$ max.
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	30 $^{\circ}C/W$ 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 = 1mA	200			V
ΔBV _{DSS}	Temperature Coefficient of	Reference to 25°C			0.29		V/°C
ΔT _J	Breakdown Voltage	I _D = 1mA					
R _{DS(on)}	Static Drain – Source On–State Resistance	V _{GS} = 10V	I _D = 11A*			0.18	Ω
		V _{GS} = 10V	I _D = 18A*			0.21	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS}	I _D = 250μA	2		4	V
g _{fs}	Forward Transconductance	V _{DS} ≥ 15V	I _{DS} = 11A*	6.1			S(Ω)
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} = 0	V _{DS} = 0.8BV _{DSS}			25	μA
			T _J = 125°C			250	
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			1300		pF
C _{oss}	Output Capacitance	V _{DS} = 25V			400		
C _{rss}	Reverse Transfer Capacitance	f = 1MHz			130		
Q _g	Total Gate Charge	V _{GS} = 10V I _D = 18A V _{DS} = 0.5BV _{DSS}		32		60	nC
Q _{gs}	Gate – Source Charge			2.2		10.6	
Q _{gd}	Gate – Drain (“Miller”) Charge			14		38	
t _{d(on)}	Turn–On Delay Time					20	
t _r	Rise Time	V _{DD} = 100V				152	ns
t _{d(off)}	Turn–Off Delay Time	I _D = 18A				58	
t _f	Fall Time	R _G = 9.1Ω				67	
SOURCE – DRAIN DIODE CHARACTERISTICS							
I _S	Continuous Source Current					18	A
I _{SM}	Pulse Source Current					72	
V _{SD}	Diode Forward Voltage	I _S = 18A	T _J = 25°C			1.5	V
		V _{GS} = 0					
t _{rr}	Reverse Recovery Time	I _S = 18A	T _J = 25°C			500	ns
Q _{rr}	Reverse Recovery Charge	d _i / d _t ≤ 100A/μs V _{DD} ≤ 50V				5.3	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)			13		

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

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