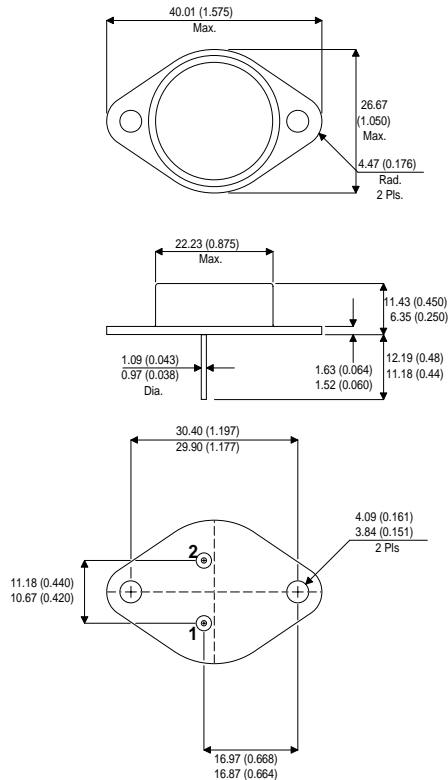


MECHANICAL DATA

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	±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/°C
T_J, T_{stg}	Operating and Storage Temperature Range	-55 to 150°C
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.0°C/W max.
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	30°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	$V_{GS} = 0$ $I_D = 1\text{mA}$	200		V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = 1\text{mA}$		0.29	$\text{V}/^\circ\text{C}$
$R_{DS(on)}$	Static Drain – Source On–State Resistance	$V_{GS} = 10\text{V}$ $I_D = 11\text{A}^*$		0.18	Ω
		$V_{GS} = 10\text{V}$ $I_D = 18\text{A}^*$		0.21	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250\mu\text{A}$	2	4	V
g_{fs}	Forward Transconductance	$V_{DS} \geq 15\text{V}$ $I_{DS} = 11\text{A}^*$	6.1		$\text{S}(\bar{v})$
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 0.8BV_{DSS}$ $T_J = 125^\circ\text{C}$		25	μA
				250	
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = 20\text{V}$		100	nA
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = -20\text{V}$		-100	
DYNAMIC CHARACTERISTICS					
C_{iss}	Input Capacitance	$V_{GS} = 0$		1300	pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		400	
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		130	
Q_g	Total Gate Charge	$V_{GS} = 10\text{V}$ $I_D = 18\text{A}$ $V_{DS} = 0.5BV_{DSS}$	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	$V_{DD} = 100\text{V}$		152	ns
$t_{d(off)}$	Turn–Off Delay Time	$I_D = 18\text{A}$		58	
t_f	Fall Time	$R_G = 9.1\Omega$		67	
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current			18	A
I_{SM}	Pulse Source Current			72	
V_{SD}	Diode Forward Voltage	$I_S = 18\text{A}$ $T_J = 25^\circ\text{C}$ $V_{GS} = 0$		1.5	V
t_{rr}	Reverse Recovery Time	$I_S = 18\text{A}$ $T_J = 25^\circ\text{C}$		500	ns
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq 100\text{A}/\mu\text{s}$ $V_{DD} \leq 50\text{V}$		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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