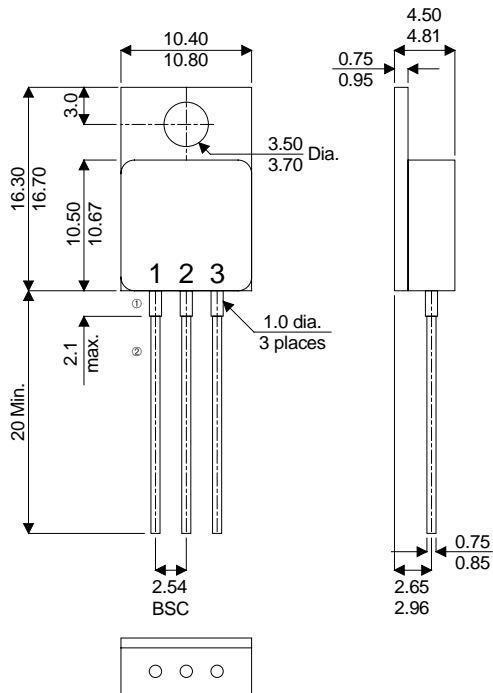


MECHANICAL DATA

Dimensions in mm (inches)



TO220 FLEX

PIN1 – Gate

PIN 2 – Drain

PIN 3 – Source

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

V_{DSS} **400V**

$I_{D(cont)}$ **1.8A**

$R_{DS(on)}$ **7.0Ω**

FEATURES

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


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

V_{GS}	Gate – Source Voltage	$\pm 20V$
I_D	Continuous Drain Current ($V_{GS} = 0, T_{case} = 25^{\circ}C$)	A
I_D	Continuous Drain Current ($V_{GS} = 0, T_{case} = 100^{\circ}C$)	1.1A
I_{DM}	Pulsed Drain Current ¹	7.2A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	50W
	Linear Derating Factor	0.4W/ $^{\circ}C$
T_J, T_{stg}	Operating and Storage Temperature Range	-55 to 150 $^{\circ}C$
T_L	Package Mounting Surface Temperature (for 5 sec)	300 $^{\circ}C$
$R_{\theta JC}$	Thermal Resistance Junction to Case	2.5 $^{\circ}C/W$ max.

Notes

1) Pulse Test: Pulse Width $\leq 300ms, \delta \leq 2\%$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
STATIC ELECTRICAL RATINGS						
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = -250\mu\text{A}$	- 400		V	
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = -1\text{mA}$		- 0.41	$\text{V}/^{\circ}\text{C}$	
$R_{DS(on)}$	Static Drain – Source On–State Resistance ¹	$V_{GS} = -10\text{V}$ $I_D = -1.1\text{A}$		7.0	Ω	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = -250\mu\text{A}$	- 2	- 4	V	
g_{fs}	Forward Transconductance	$V_{DS} = -50\text{V}$ $I_D = -1.1\text{A}$	0.91		S	
I_{DSS}	Drain-to-Source Leakage Current	$V_{DS} = -400\text{V}$ $V_{GS} = 0$ $V_{DS} = -320\text{V}$ $T_J = 125^{\circ}\text{C}$		-100 -500	μA	
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	nA	
DYNAMIC CHARACTERISTICS						
C_{iss}	Input Capacitance	$V_{GS} = 0$		270	pF	
C_{oss}	Output Capacitance	$V_{DS} = -25\text{V}$		50		
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		8.0		
Q_g	Total Gate Charge ¹	$V_{GS} = -10\text{V}$ $I_D = 1.1\text{A}$ $V_{DS} = -320\text{V}$		13	nC	
Q_{gs}	Gate – Source Charge ¹			3.2		
Q_{gd}	Gate – Drain (“Miller”) Charge ¹			5		
$t_{d(on)}$	Turn–On Delay Time ¹	$V_{DD} = 200\text{V}$		11	ns	
t_r	Rise Time ¹	$I_D = -1.1\text{A}$		10		
$t_{d(off)}$	Turn–Off Delay Time ¹	$R_G = 21\Omega$		25		
t_f	Fall Time ¹	$R_D = 180\Omega$		24		
SOURCE – DRAIN DIODE CHARACTERISTICS						
I_S	Continuous Source Current	Mosfet symbol showing the integral reverse p-n junction diode 		- 1.8	A	
I_{SM}	Pulse Source Current			- 7.2		
V_{SD}	Diode Forward Voltage ¹	$I_S = -1.1\text{A}$ $T_J = 25^{\circ}\text{C}$ $V_{GS} = 0\text{V}$		- 4	V	
t_{rr}	Reverse Recovery Time ¹	$I_F = -1.1\text{A}$ $T_J = 25^{\circ}\text{C}$		170	260	ns
Q_{rr}	Reverse Recovery Charge ¹	$d_i / d_t \leq 100\text{A}/\mu\text{s}$ $V_{DD} \leq 50\text{V}$		640	960	μC
t_{on}	Forward Turn–On Time		Negligible			
PACKAGE CHARACTERISTICS						
L_D	Internal Drain Inductance (6mm down drain lead to centre of die)		4.5		nH	
L_S	Internal Source Inductance (6mm down source lead to centre of source bond pad)		7.5			

Notes

- 1) Pulse Test: Pulse Width $\leq 300\text{ms}$, $\delta \leq 2\%$
- 2) Repetitive Rating – Pulse width limited by maximum junction temperature.