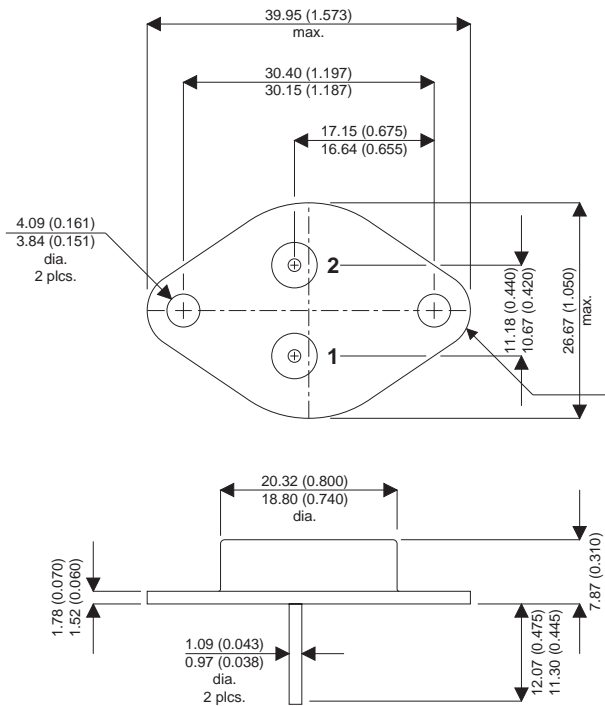


MECHANICAL DATA

Dimensions in mm (inches)



TO-3 Metal Package

Pin 1 – Gate Pin 2 – Source Case – Drain

**P-CHANNEL
POWER MOSFET**

V_{DSS} **-100V**
 $I_{D(cont)}$ **-11A**
 $R_{DS(on)}$ **0.2Ω**

FEATURES

- HERMETICALLY SEALED TO-3 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 ($V_{GS} = 0, T_{case} = 25^{\circ}C$)	-11A
I_D	Continuous Drain Current ($V_{GS} = 0, T_{case} = 100^{\circ}C$)	-7.0A
I_{DM}	Pulsed Drain Current ¹	-50A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	75W
	Linear Derating Factor	0.6W/ $^{\circ}C$
E_{AS}	Single Pulse Avalanche Energy ²	81mJ
I_{AR}	Avalanche Current ¹	-11A
E_{AR}	Repetitive Avalanche Energy ¹	7.5mJ
dv/dt	Peak Diode Recovery ³	-5.5V/ns
T_J, T_{stg}	Operating and Storage Temperature Range	-55 to +150 $^{\circ}C$
T_L	Lead Temperature 1.6mm (0.63") from case for 10 sec.	300 $^{\circ}C$

Notes

- 1) Repetitive Rating – Pulse width limited by maximum junction temperature.
- 2) @ $V_{DD} = -25V, L \geq 1.0mH, R_G = 25\Omega, Peak I_L = -11A, Starting T_J = 25^{\circ}C$
- 3) @ $I_{SD} \leq -11A, di/dt \leq -140A/\mu s, V_{DD} \leq BV_{DSS}, T_J \leq 150^{\circ}C, Suggested R_G = 7.5\Omega$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit		
STATIC ELECTRICAL RATINGS							
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$	$I_D = -1mA$	-100		V	
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to $25^{\circ}C$ $I_D = -1mA$			-0.087	V/ $^{\circ}C$	
$R_{DS(on)}$	Static Drain – Source On–State Resistance ¹	$V_{GS} = -10V$	$I_D = -7.0A$		0.3	Ω	
		$V_{GS} = -10V$	$I_D = -11A$		0.35		
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = -250mA$	-2		-4	V
g_{fs}	Forward Transconductance	$V_{DS} \geq -15V$	$I_{DS} = -7.0A$	3			S (∇)
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$	$V_{DS} = 0.8 \times Max$ $T_J = 125^{\circ}C$			-25 -250	μA
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = -20V$				-100	nA
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = 20V$				100	
DYNAMIC CHARACTERISTICS							
C_{DC}	Drain to Case Capacitance	$V_{GS} = 0$ $V_{DS} = -25V$ $f = 1MHz$			12		pF
C_{iss}	Input Capacitance				860		
C_{oss}	Output Capacitance				350		
C_{riss}	Reverse Transfer Capacitance				125		
Q_g	Total Gate Charge	$V_{GS} = -10V$		15		29	nC
Q_{gs}	Gate – Source Charge	$I_D = -11A$		1.0		7.1	
Q_{gd}	Gate – Drain (“Miller”) Charge	$V_{DS} = 0.5 \times max$		2.0		21	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = -50V$ $I_D = -11A$ $R_G = 7.5\Omega$				60	ns
t_r	Rise Time					140	
$t_{d(off)}$	Turn–Off Delay Time					140	
t_f	Fall Time					140	
SOURCE – DRAIN DIODE CHARACTERISTICS							
I_S	Continuous Source Current					-11	A
I_{SM}	Pulse Source Current ²					-50	
V_{SD}	Diode Forward Voltage	$I_S = -11A$	$T_J = 25^{\circ}C$			-4.7	V
		$V_{GS} = 0$					
t_{rr}	Reverse Recovery Time	$I_F = -11A$	$V_{DD} \leq -50V$			250	ns
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq -100A/\mu s$	$T_J = 25^{\circ}C$			3.0	μC
t_{on}	Forward Turn–On Time					Negligible	
PACKAGE CHARACTERISTICS							
L_D	Internal Drain Inductance (measured from 6mm down drain lead to centre of die)				5.0		nH
L_S	Internal Source Inductance (from 6mm down source lead to source bond pad)				13		
THERMAL CHARACTERISTICS							
$R_{\theta JC}$	Thermal Resistance Junction – Case				1.67		$^{\circ}C/W$
$R_{\theta CS}$	Thermal Resistance Case – Sink				0.12		
$R_{\theta JA}$	Thermal Resistance Junction – Ambient				30		

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