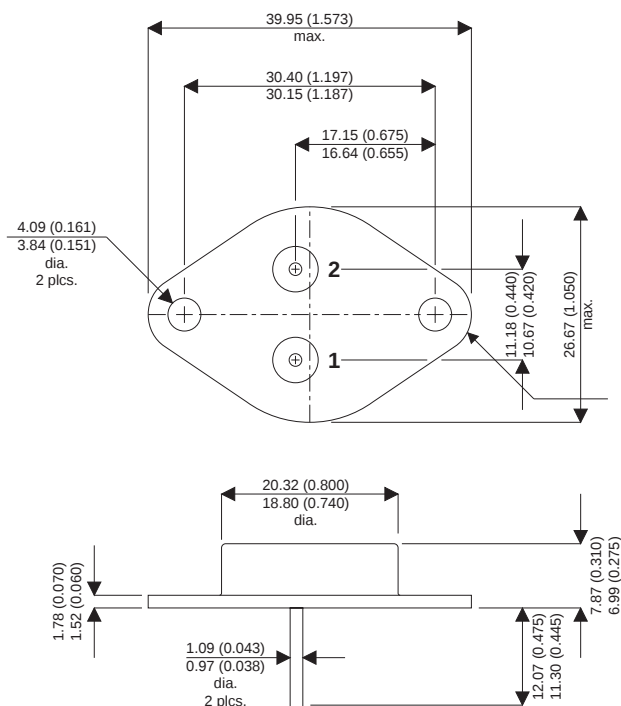


MECHANICAL DATA

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**
 $R_{DS(on)}$ **0.2 Ω**
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 ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS							
B _V D _{SS}	Drain – Source Breakdown Voltage	V _{GS} = 0	I _D = –1mA	–100			V
ΔB _V D _{SS}	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I _D = –1mA			–0.087		V/°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} ≥ –15V	I _{DS} = –7.0A	3			S (V)
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} = 0	V _{DS} = 0.8 x Max			–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 _{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 _{rss}	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 x max		2.0		21	
t _{d(on)}	Turn–On Delay Time	V _{DD} = –50V I _D = –11A R _G = 7.5Ω				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°C			–4.7	V
		V _{GS} = 0					
t _{rr}	Reverse Recovery Time	I _F = –11A	V _{DD} ≤ –50V			250	ns
Q _{rr}	Reverse Recovery Charge	d _i / d _t ≤ –100A/μs T _J = 25°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 _{θJC}	Thermal Resistance Junction – Case				1.67		°C/W
R _{θCS}	Thermal Resistance Case – Sink				0.12		
R _{θJA}	Thermal Resistance Junction – Ambient				30		

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