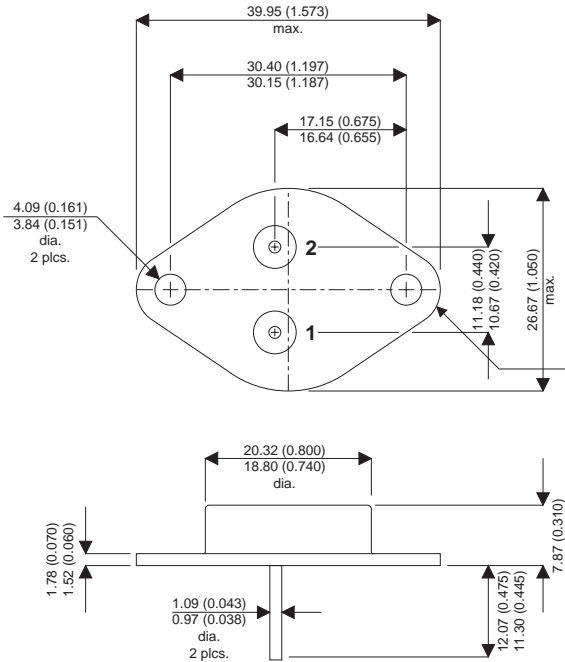


MECHANICAL DATA

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) @ $I_{SD} \leq -11A, di/dt \leq -140A/\mu s, V_{DD} \leq BV_{DSS}, T_J \leq 150^{\circ}C, Suggested R_G = 7.5\Omega$

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Issue 1

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
ΔBV_{DSS}	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	$V_{GS} = -10V$ $I_D = -7.0A$ $V_{GS} = -10V$ $I_D = -11A$		0.3 0.35	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = -250\mu A$	-2	-4	V
g_{fs}	Forward Transconductance	$V_{DS} \geq -15V$ $I_{DS} = -7.0A$	3		S (\bar{v})
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 0.8 \times \text{Max}$ $T_J = 125^{\circ}C$		-25 -250	μA
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = -20V$		-100	nA
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = 20V$		100	nA
DYNAMIC CHARACTERISTICS					
C_{DC}	Drain to Case Capacitance	$V_{GS} = 0$		12	pF
C_{iss}	Input Capacitance	$V_{DS} = -25V$		860	
C_{oss}	Output Capacitance	$f = 1MHz$		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	$V_{DS} = 0.5 \times \text{max}$	2.0	21	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = -50V$		60	ns
t_r	Rise Time	$I_D = -11A$		140	
$t_{d(off)}$	Turn-Off Delay Time	$R_G = 7.5\Omega$		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	$I_S = -11A$ $T_J = 25^{\circ}C$ $V_{GS} = 0$		-4.7	V
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.