SEME LAB

IRF250

MECHANICAL DATA
Dimensions in mm (inches)

39.95 (1.573) max.

30.40 (1.197)
30.15 (1.187)

17.15 (0.675)
16.64 (0.655)

4.09 (0.161)
3.84 (0.151)
dia.
2 plcs.

11.18 (0.440)
10.67 (0.420)

26.67 (1.050) max.

20.32 (0.800)
18.80 (0.740)
dia.

1.78 (0.070)
1.52 (0.060)

1.57 (0.062)
1.47 (0.058)
dia.
2 plcs.

12.07 (0.475)
11.30 (0.445)

7.87 (0.310)
6.99 (0.275)
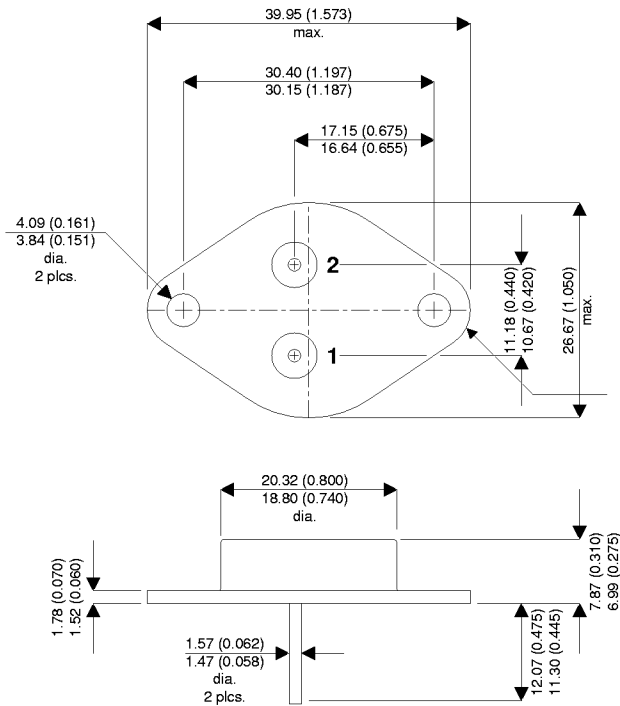
TO–3 Metal Package
Pin 1 – Gate   Pin 2 – Source   Case – Drain

N–CHANNEL POWER MOSFET

V_{DSS}	200V
$I_{D(cont)}$	30A
$R_{DS(on)}$	0.085Ω

FEATURES

• HERMETICALLY SEALED TO–3 METAL PACKAGE

• SIMPLE DRIVE REQUIREMENTS

• SCREENING OPTIONS AVAILABLE

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{GS}	Gate – Source Voltage		±20V
I_D	Continuous Drain Current	(V_{GS} = 0 , T_{case} = 25°C)	30A
I_D	Continuous Drain Current	(V_{GS} = 0 , T_{case} = 100°C)	19A
I_{DM}	Pulsed Drain Current [1]		120A
P_D	Power Dissipation @ T_{case} = 25°C		150W
	Linear Derating Factor		1.2W/°C
E_{AS}	Single Pulse Avalanche Energy [2]		200mJ
I_{AR}	Avalanche Current [2]		30A
E_{AR}	Repetitive Avalanche Energy [2]		15mJ
dv/dt	Peak Diode Recovery [3]		5V/ns
T_J , T_{stg}	Operating and Storage Temperature Range		–55 to +150°C
T_L	Lead Temperature 1.6mm (0.63") from case for 10 sec.		300°C

Notes

1) Pulse Test: Pulse Width ≤ 300µs, δ ≤ 2%.

2) @ V_{DD} = 50V , L ≥ 330mH , R_G = 25Ω , Peak I_L = 30A , Starting T_J = 25°C.

3) @ I_{SD} ≤ 30A , di/dt ≤ 190A/µs , V_{DD} ≤ BV_{DSS} , T_J ≤ 150°C , Suggested R_G = 2.35Ω

IRF250

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS							
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$	$I_D = 1mA$	200			V
$\dfrac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C	$I_D = 1mA$		0.029		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance [1]	$V_{GS} = 10V$	$I_D = 19A$			0.085	Ω
		$V_{GS} = 10V$	$I_D = 30A$			0.090	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 250mA$	2		4	V
g_{fs}	Forward Transconductance [1]	$V_{DS} > 15V$	$I_D = 19A$	9			S (℧)
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$	$V_{DS} = 0.8BV_{DSS}$			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_{iss}	Input Capacitance	$V_{GS} = 0$			3500		pF
C_{oss}	Output Capacitance	$V_{DS} = 25V$			700		
C_{rss}	Reverse Transfer Capacitance	$f = 1MHz$			110		
Q_g	Total Gate Charge	$V_{GS} = 10V$		55		115	nC
Q_{gs}	Gate – Source Charge	$I_D = 30A$		8		22	
Q_{gd}	Gate – Drain ("Miller") Charge	$V_{DS} = 0.5BV_{DSS}$		30		60	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 100V$				35	ns
t_r	Rise Time	$I_D = 30A$				190	
$t_{d(off)}$	Turn–Off Delay Time	$R_G = 2.35Ω$				170	
t_f	Fall Time					130	
SOURCE – DRAIN DIODE CHARACTERISTICS							
I_S	Continuous Source Current					30	A
I_{SM}	Pulse Source Current [2]					120	
V_{SD}	Diode Forward Voltage [1]	$I_S = 30A$	$T_J = 25°C$			1.9	V
		$V_{GS} = 0$					
t_{rr}	Reverse Recovery Time	$I_F = 30A$	$T_J = 25°C$			950	ns
Q_{rr}	Reverse Recovery Charge [1]	$d_i / d_t \leq 100A/μs$	$V_{DD} \leq 50V$			9.0	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					0.83	°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 ≤ 300ms, δ ≤ 2%
2) Repetitive Rating – Pulse width limited by maximum junction temperature.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET *category:*

Click to view products by TT Electronics *manufacturer:*

Other Similar products are found below :

614233C 648584F IRFD120 JANTX2N5237 FCA20N60_F109 FDZ595PZ 2SK2545(Q,T) 405094E 423220D TPCC8103,L1Q(CM MIC4420CM-TR VN1206L SBVS138LT1G 614234A 715780A NTNS3166NZT5G SSM6J414TU,LF(T 751625C BUK954R8-60E DMN3404LQ-7 NTE6400 SQJ402EP-T1-GE3 2SK2614(TE16L1,Q) 2N7002KW-FAI DMN1017UCP3-7 EFC2J004NUZTDG ECH8691-TL-W FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE221 NTE2384 NTE2903 NTE2941 NTE2945 NTE2946 NTE2960 NTE2967 NTE2969 NTE2976 NTE455 NTE6400A NTE2910 NTE2916 NTE2956 NTE2911 DMN2080UCB4-7 TK10A80W,S4X(S SSM6P69NU,LF DMP22D4UFO-7B