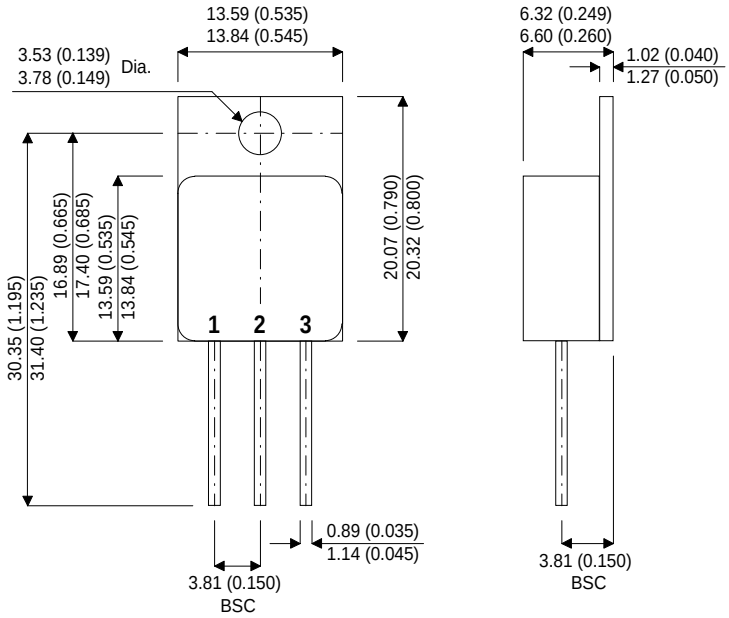
IRFM240
2N7219

MECHANICAL DATA
Dimensions in mm (inches)



TO–254AA – Isolated Metal Package

Pin 1 – Drain Pin 2 – Source Pin 3 – Gate

N–CHANNEL POWER MOSFET

V_{DSS}	200V
$I_{D(cont)}$	18A
$R_{DS(on)}$	0.18Ω

FEATURES

- **N–CHANNEL MOSFET**
- **HIGH VOLTAGE**
- **HERMETIC ISOLATED TO-254 PACKAGE**
- **ELECTRICALLY ISOLATED**

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V_{GS}	Gate – Source Voltage		±20V
I_D	Continuous Drain Current	@ V_{GS} = 10V , T_C = 25°C	18A
		@ V_{GS} = 10V , T_C = 100°C	11A
I_{DM}	Pulsed Drain Current		72A
P_D	Max. Power Dissipation	@ T_C = 25°C	125W
	Linear Derating Factor		1.0W / °C
I_{AR}	Avalanche Current [1]		18
dv / dt	Peak Diode Recovery [2]		5.0V / ns
$R_{\theta JC}$	Thermal Resistance Junction – Case		1.0°C / W
$R_{\theta JA}$	Thermal Resistance Junction – Ambient		48°C / W
T_J , T_{STG}	Operating Junction and Storage Temperature Range		–55 to 150°C
T_L	Lead Temperature (1.6mm from case for 10s)		300°C

1) V_{DD} = 50V , Starting T_J = 25°C , L ≥ 1.3mH , V_{GS} = 10V , Peak I_L = 18A
2) I_{SD} ≤ 18A , di/dt ≤ 150A / µS , V_{DD} ≤ 200V , T_J ≤ 150°C

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SEME LAB

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ELECTRICAL CHARACTERISTICS (T_J = 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
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I_D = 1mA			0.29		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance [2]	V_{GS} = 10V	I_D = 11A			0.18	Ω
		V_{GS} = 10V	I_D = 18A			0.25	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}	I_D = 250µA	2.0		4.0	V
g_{fs}	Forward Transconductance [2]	V_{DS} ≥ 15V	I_{DS} = 11A	6.1			S(℧)
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS} = 0	V_{DS} = 160V			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			1300		pF
C_{oss}	Output Capacitance	V_{DS} = 25V			400		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz			130		
Q_g	Total Gate Charge	V_{GS} = 10V				60	nC
Q_{gs}	Gate – Source Charge	I_D = 18A				10.6	
Q_{gd}	Gate – Drain (“Miller”) Charge	V_{DS} = 100V				37.6	
$t_{d(on)}$	Turn– On Delay Time	V_{DD} = 100V				20	ns
t_r	Rise Time	I_D = 18A	V_{GS} = 10V			105	
$t_{d(off)}$	Turn–Off Delay Time	R_G = 9.1Ω				58	
t_f	Fall Time					67	
	SOURCE – DRAIN DIODE CHARACTERISTICS						
I_S	Continuous Source Current					18	A
I_{SM}	Pulse Source Current [1]					72	
V_{SD}	Diode Forward Voltage [2]	I_S = 18A	T_J = 25°C			1.5	V
		V_{GS} = 0					
t_{rr}	Reverse Recovery Time [2]	I_F = 18A	T_J = 25°C			500	ns
Q_{rr}	Reverse Recovery Charge [2]	d_i / d_t ≤ 100A/µs	V_{DD} ≤ 50V			5.3	µC
t_{on}	Forward Turn–On Time				Negligible		
	PACKAGE CHARACTERISTICS						
L_D	Internal Drain Inductance Measured from drain lead (6mm / 0.25in from package) to				4.0		nH
L_S	Internal Source Inductance source lead (6mm / 0.25in from package).				4.0		

1) Repetitive Rating – Pulse width limited by Maximum Junction Temperature

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

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