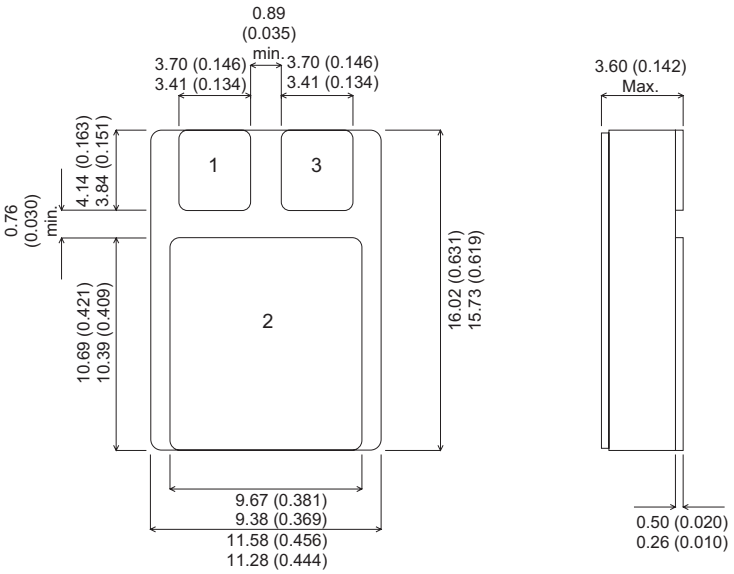
IRFN9530

MECHANICAL DATA
Dimensions in mm (inches)



SMD 1 (TO-276AB)

Pad 1 – Gate Pad 2 – Drain Pad 3 – Source

(also available as IRF9530SMD with Gate and Source reversed)

P–CHANNEL POWER MOSFET FOR HI–REL APPLICATIONS

V_{DSS}	-100V
$I_{D(cont)}$	-12A
$R_{DS(on)}$	0.3Ω

FEATURES

- **HERMETICALLY SEALED**
- **SIMPLE DRIVE REQUIREMENTS**
- **LIGHTWEIGHT**
- **SCREENING OPTIONS AVAILABLE**
- **ALL LEADS ISOLATED FROM CASE**

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

BV_{DS}	Drain – Source BreakdownVoltage	-100V
V_{GS}	Gate – Source Voltage	±20V
I_D	Continuous Drain Current @ T_{case} = 25°C	-12A
I_D	Continuous Drain Current @ T_{case} = 100°C	-8A
I_{DM}	Pulsed Drain Current	-48A
P_D	Power Dissipation @ T_{case} = 25°C	75W
	Linear Derating Factor	0.6W/°C
T_J , T_{stg}	Operating and Storage Temperature Range	–55 to +175°C
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.7°C/W max.

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SEME LAB

IRFN9530

ELECTRICAL CHARACTERISTICS (T_C = 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 = -250µA	-100			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I_D = -1mA		-0.1		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance*	V_{GS} = -10V I_D = -7A			0.30	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS} I_D = -250µA	-2		-4	V
g_{fs}	Forward Transconductance*	V_{DS} ≥ -50V I_{DS} = -7A	3.7			S(℧)
I_{DSS}	Zero Gate Voltage Drain Current (V_{GS} = 0)	V_{DS} = -100V			-100	µA
		V_{DS} = -80V T_J = 150°C			-500	
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		860		pF
C_{oss}	Output Capacitance	V_{DS} = -25V		340		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		93		
Q_g	Total Gate Charge	V_{GS} = -10V			38	nC
Q_{gs}	Gate – Source Charge	I_D = -12A			6.8	
Q_{gd}	Gate – Drain (“Miller”) Charge	V_{DS} = 0.8BV_{DSS}			21	
$t_{d(on)}$	Turn–On Delay Time	V_{DD} = -50V		12		ns
t_r	Rise Time	I_D = -12A		52		
$t_{d(off)}$	Turn–Off Delay Time	R_G = 12Ω		31		
t_f	Fall Time	R_D = 3.9Ω		39		
	SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current				-12	A
I_{SM}	Pulse Source Current				-48	
V_{SD}	Diode Forward Voltage*	I_S = -12A V_{GS} = 0_V			-6.3	V
t_{rr}	Reverse Recovery Time	I_F = -12A V_{DD} ≤ -50V		120	240	ns
Q_{rr}	Reverse Recovery Charge	d_i / d_t ≤ -100A/µs		0.46	0.92	µC

Notes

* Pulse Test: Pulse Width ≤ 300µs, δ ≤ 2%

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