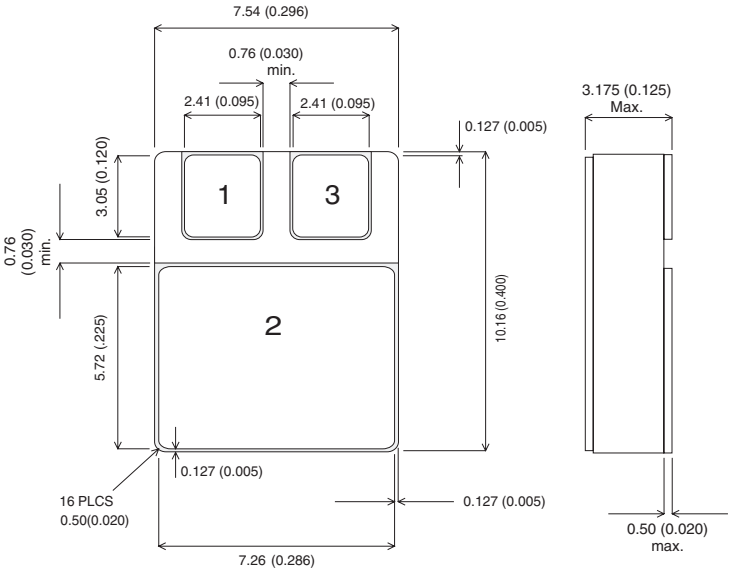
IRFNJ540

MECHANICAL DATA
Dimensions in mm (inches)



SMD 05 (TO-276AA)

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

(also available as IRF9530SMD05 with Gate and Source reversed)

N–CHANNEL POWER MOSFET FOR HI–REL APPLICATIONS

V_{DSS}	100V
$I_{D(cont)}$	12A
$R_{DS(on)}$	0.052Ω

FEATURES
- HERMETICALLY SEALED
- SIMPLE DRIVE REQUIREMENTS
- LIGHTWEIGHT
- SCREENING OPTIONS AVAILABLE

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	22A
I_D	Continuous Drain Current @ T_{case} = 100°C	16A
I_{DM}	Pulsed Drain Current	88A
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 +150°C
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.67°C/W max.

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SEME LAB

IRFNJ540

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		0.11		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance*	V_{GS} = 10V I_D = 16A			0.052	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} = 16A	11			S(℧)
I_{DSS}	Zero Gate Voltage Drain Current (V_{GS} = 0)	V_{DS} = 100V			25	µA
		V_{DS} = 80V T_J = 150°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		1487		pF
C_{oss}	Output Capacitance	V_{DS} = 25V		353		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		182		
Q_g	Total Gate Charge	V_{GS} = 10V			104	nC
Q_{gs}	Gate – Source Charge	I_D = 16A			20	
Q_{gd}	Gate – Drain (“Miller”) Charge	V_{DS} = 0.8BV_{DSS}			43	
$t_{d(on)}$	Turn–On Delay Time	V_{DD} = 50V			24	ns
t_r	Rise Time	I_D = 16A			125	
$t_{d(off)}$	Turn–Off Delay Time	R_G = 7.5Ω			86	
t_f	Fall Time	V_{GS} = 10V			82	
	SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current				22	A
I_{SM}	Pulse Source Current				88	
V_{SD}	Diode Forward Voltage*	I_S = 16A V_{GS} = 0_V			1.3	V
t_{rr}	Reverse Recovery Time	I_F = 16A V_{DD} ≤ 50V			240	ns
Q_{rr}	Reverse Recovery Charge	d_i / d_t ≤ 100A/µs			1.67	µC

Notes

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

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