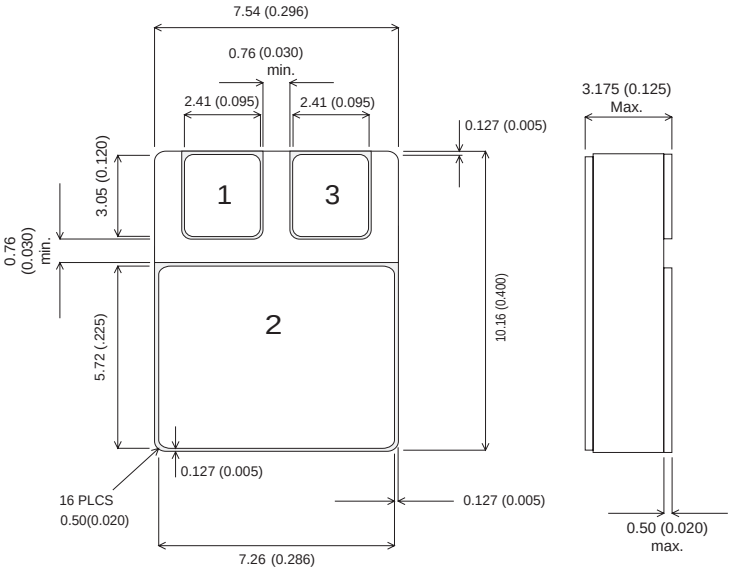
IRFNJZ48

MECHANICAL DATA
Dimensions in mm (inches)



SMD05 (TO-276AA)

PAD1 = SOURCE PAD 2 = DRAIN PAD3 = GATE

N–CHANNEL POWER MOSFET FOR HI–REL APPLICATIONS

V_{DSS}	55V
$I_{D(cont)}$	22A
$R_{DS(on)}$	0.016Ω

FEATURES

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

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

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	22A
I_{DM}	Pulsed Drain Current	88A
P_D	Power Dissipation @ T_{case} = 25°C	75W
	Linear Derating Factor	0.6 W/°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.

Semelab plc. Telephone +44(0)1455) 556565. Fax +44(0)1455) 552612.
E-mail: sales@semelab.co.uk Website http://www.semelab.co.uk

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SEME LAB

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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	55			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I_D = 1mA		0.056		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance	V_{GS} = 10V I_D = 22A			0.016	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS} I_D = 250µA	2		4	V
g_{fs}	Forward Transconductance	V_{DS} ≥ 25V I_{DS} = 22A	22			S(℧)
I_{DSS}	Zero Gate Voltage Drain Current V_{GS} = 0	V_{DS} = 55V V_{GS} = 0			25	µA
		V_{DS} = 44V 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		1900		pF
C_{oss}	Output Capacitance	V_{DS} = 25V		620		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		270		
Q_g	Total Gate Charge	V_{GS} = 10V			101	nC
Q_{gs}	Gate – Source Charge	V_{DS} = 44V			19	
Q_{gd}	Gate – Drain (“Miller”) Charge	I_D = 22A			41	
$t_{d(on)}$	Turn–On Delay Time	V_{DD} = 28V			23	ns
t_r	Rise Time	I_D = 22A			141	
$t_{d(off)}$	Turn–Off Delay Time	R_G = 5.1Ω			60	
t_f	Fall Time				98	
	SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current				22*	A
I_{SM}	Pulse Source Current				88	
V_{SD}	Diode Forward Voltage	I_S = 22A T_J = 25°C V_{GS} = 0			1.3	V
t_{rr}	Reverse Recovery Time	I_F = 16A T_J = 25°C			104	ns
Q_{rr}	Reverse Recovery Charge	d_i / d_t ≤ 100A/µs V_{DD} ≤ 30V			210	nC

* Current Limited by package

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