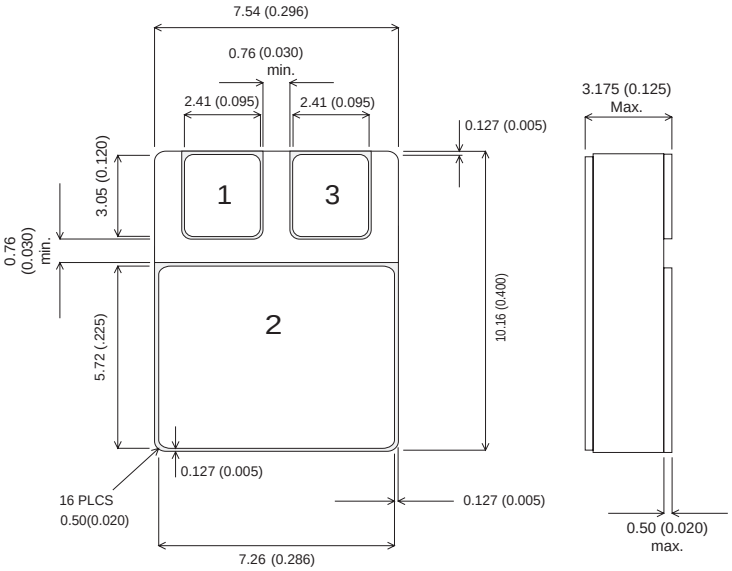
IRFNJ5305

MECHANICAL DATA
Dimensions in mm (inches)



SMD05 (TO-276AA)

PAD1 = SOURCE PAD 2 = DRAIN PAD3 = GATE

P–CHANNEL POWER MOSFET FOR HI–REL APPLICATIONS

V_{DSS}	-55V
$I_{D(cont)}$	-22A
$R_{DS(on)}$	0.065Ω

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	-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.

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

Document Number 5607
Issue 1

SEME LAB

IRFNJ5305

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		-0.049		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance	V_{GS} = -10V I_D = -16A			0.065	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} = -6A	8			S(℧)
I_{DSS}	Zero Gate Voltage Drain Current (V_{GS} = 0)	V_{DS} = -55V			-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		1290		pF
C_{oss}	Output Capacitance	V_{DS} = -25V		495		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		203		
Q_g	Total Gate Charge	V_{GS} = -10V			70	nC
Q_{gs}	Gate – Source Charge	V_{DS} = -44V			17	
Q_{gd}	Gate – Drain (“Miller”) Charge	I_D = -16A			30	
$t_{d(on)}$	Turn–On Delay Time	V_{DD} = -28V			26	ns
t_r	Rise Time	I_D = -16A			125	
$t_{d(off)}$	Turn–Off Delay Time	R_G = 6.8Ω			56	
t_f	Fall Time				74	
	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 T_J = 25°C V_{GS} = 0			-1.3	V
t_{rr}	Reverse Recovery Time	I_S = -16A T_J = 25°C			100	ns
Q_{rr}	Reverse Recovery Charge	d_i / d_t ≤ -100A/µs V_{DD} ≤ -30V			250	nC

* Current Limited by package

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

Document Number 5607Issue 1