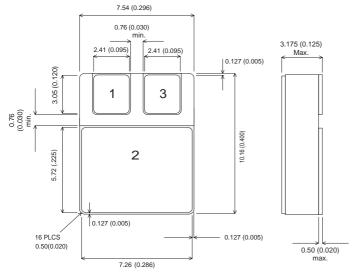


IRFNJ130 IRFN130SMD05

MECHANICAL DATA

Dimensions in mm (inches)



SMD05 (TO-276AA)

IRFNJ130

PAD1 = GATE PAD 2 DRAIN PAD3 = SOURCE

IRFN130SMD05

PAD1 = SOURCE PAD 2 = DRAIN PAD3 = GATE

N-CHANNEL POWER MOSFET FOR HI-REL **APPLICATIONS**

V_{DSS}	100V
I _{D(cont)}	11 A
$R_{DS(on)}$	0.19Ω

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)

$\overline{V_{GS}}$	Gate – Source Voltage	±20V	
I_D	Continuous Drain Current @ T _{case} = 25°C	11A	
I_D	Continuous Drain Current @ T _{case} = 100°C	7A	
I_{DM}	Pulsed Drain Current	44A	
P_{D}	Power Dissipation @ T _{case} = 25°C	45W	
	Linear Derating Factor	0.36W/°C	
T_J , T_stg	Operating and Storage Temperature Range	−55 to 150°C	
$R_{\theta JC}$	Thermal Resistance Junction to Case	2.8°C/W max.	

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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IRFNJ130 IRFN130SMD05

ELECTRICAL CHARACTERISTICS ($T_C = 25$ °C unless otherwise stated)

	Parameter	Test Conditions		Min.	Тур.	Max.	Unit	
	STATIC ELECTRICAL RATINGS	•	•				•	
BV _{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$	I _D = 1mA	100			V	
ΔBV_{DSS}	Temperature Coefficient of	Reference to 25°C			0.4		V/°C	
ΔT_{J}	Breakdown Voltage	I _D = 1mA			0.1		V/ C	
R _{DS(on)}	Static Drain – Source On–State	V _{GS} = 10V	I _D = 7A			0.19	Ω	
	Resistance	V _{GS} = 10V	I _D = 11A			0.22	52	
V _{GS(th)}	Gate Threshold Voltage	$V_{DS} = V_{GS}$	I _D = 250μA	2		4	V	
g _{fs}	Forward Transconductance	V _{DS} ≥ 15V	I _{DS} = 7A	3			S(\Omega)	
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} = 0	$V_{DS} = 0.8BV_{DSS}$ $T_{J} = 125^{\circ}C$			25 250	μА	
I _{GSS}	Forward Gate – Source Leakage	V _{GS} = 20V	0			100		
I _{GSS}	Reverse Gate – Source Leakage	$V_{GS} = -20V$				-100	- nA	
	DYNAMIC CHARACTERISTICS							
C _{iss}	Input Capacitance	$V_{GS} = 0$			650		1	
C _{oss}	Output Capacitance			240		pF		
C _{rss}	Reverse Transfer Capacitance	f = 1MHz			44		-	
Qg	Total Gate Charge	$V_{GS} = 10V$ $V_{DS} = 0.5BV_{DSS}$	_	12.8		28.5	nC	
Q_{gs}	Gate - Source Charge	I _D = 11A	-	1.0		6.3	T	
Q_{gd}	Gate - Drain ("Miller") Charge	$V_{DS} = 0.5BV_{DSS}$		3.8		16.6	nC	
t _{d(on)}	Turn–On Delay Time	$V_{DD} = 50V$ $I_{D} = 11A$ $R_{G} = 7.5\Omega$				30	- ns	
t _r	Rise Time					75		
t _{d(off)}	Turn-Off Delay Time					40		
t _f	Fall Time					45		
	SOURCE - DRAIN DIODE CHARACT	TERISTICS	•				<u>,1</u>	
I _S	Continuous Source Current					11	A	
I _{SM}	Pulse Source Current					43		
V _{SD}	Diode Forward Voltage	I _S = 11A V _{GS} = 0	T _J = 25°C			1.5	V	
t _{rr}	Reverse Recovery Time	I _S = 11A	T _J = 25°C			300	ns	
Q _{rr}	Reverse Recovery Charge	d _i / d _t ≤ 100A/μs	s V _{DD} ≤ 50V			3	μС	
	PACKAGE CHARACTERISTICS	1	Į.					
L _D	Internal Drain Inductance (fro	om 6mm down drain le	ad pad to centre of die)	ad pad to centre of die) 8.7			nH	
L _S	Internal Source Inductance (from 6mm do	own source lead to cen		8.7				

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