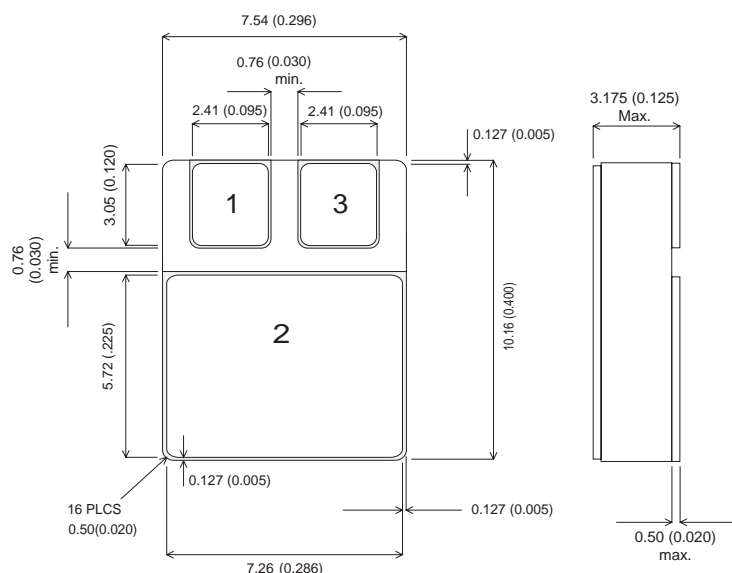


## MECHANICAL DATA

Dimensions in mm (inches)



### SMD05 (TO-276AA)

## IRF9130SMD05

PAD1 = GATE PAD 2 DRAIN PAD3 = SOURCE

## IRFNJ9130

PAD1 = SOURCE PAD 2 = DRAIN PAD3 = GATE

## P-CHANNEL POWER MOSFET FOR HI-REL APPLICATIONS

$V_{DS}$  -100V  
 $I_{D(cont)}$  -11A  
 $R_{DS(on)}$  0.30Ω

## FEATURES

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

## ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ unless otherwise stated)

$V_{GS}$	Gate – Source Voltage	±20V
$I_D$	Continuous Drain Current @ $T_{case} = 25^{\circ}C$	-11A
$I_D$	Continuous Drain Current @ $T_{case} = 100^{\circ}C$	-7A
$I_{DM}$	Pulsed Drain Current	-50A
$P_D$	Power Dissipation @ $T_{case} = 25^{\circ}C$	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.

### ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS							
BV <sub>DSS</sub>	Drain – Source Breakdown Voltage	V <sub>GS</sub> = 0	I <sub>D</sub> = -1mA	-100			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I <sub>D</sub> = -1mA			-0.1		V/°C
R <sub>DS(on)</sub>	Static Drain – Source On–State Resistance	V <sub>GS</sub> = -10V	I <sub>D</sub> = -7A			0.30	Ω
		V <sub>GS</sub> = -10V	I <sub>D</sub> = -11A			0.35	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub>	I <sub>D</sub> = -250μA	-2		-4	V
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> ≥ -15V	I <sub>DS</sub> = -7A	3			S(Ω)
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>GS</sub> = 0	V <sub>DS</sub> = -80V			-25	μA
			T <sub>J</sub> = 125°C			-250	
I <sub>GSS</sub>	Forward Gate – Source Leakage	V <sub>GS</sub> = -20V				-100	nA
I <sub>GSS</sub>	Reverse Gate – Source Leakage	V <sub>GS</sub> = 20V				100	
DYNAMIC CHARACTERISTICS							
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> = 0			860		pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> = 25V			350		
C <sub>rss</sub>	Reverse Transfer Capacitance	f = 1MHz			125		
Q <sub>g</sub>	Total Gate Charge	V <sub>GS</sub> = -10V				29	nC
Q <sub>gs</sub>	Gate – Source Charge	V <sub>DS</sub> = -50V				7.1	
Q <sub>gd</sub>	Gate – Drain (“Miller”) Charge	I <sub>D</sub> = -11A				21	
t <sub>d(on)</sub>	Turn–On Delay Time	V <sub>DD</sub> = -50V				60	ns
t <sub>r</sub>	Rise Time	I <sub>D</sub> = -11A				140	
t <sub>d(off)</sub>	Turn–Off Delay Time	R <sub>G</sub> = 7.5Ω				140	
t <sub>f</sub>	Fall Time					140	
SOURCE – DRAIN DIODE CHARACTERISTICS							
I <sub>S</sub>	Continuous Source Current					-11	A
I <sub>SM</sub>	Pulse Source Current					-50	
V <sub>SD</sub>	Diode Forward Voltage	I <sub>S</sub> = -11A	T <sub>J</sub> = 25°C			-4.7	V
		V <sub>GS</sub> = 0					
t <sub>rr</sub>	Reverse Recovery Time	I <sub>S</sub> = -11A	T <sub>J</sub> = 25°C			250	ns
Q <sub>rr</sub>	Reverse Recovery Charge	d <sub>i</sub> / d <sub>t</sub> ≤ -100A/μs V <sub>DD</sub> ≤ 150V				3	μC