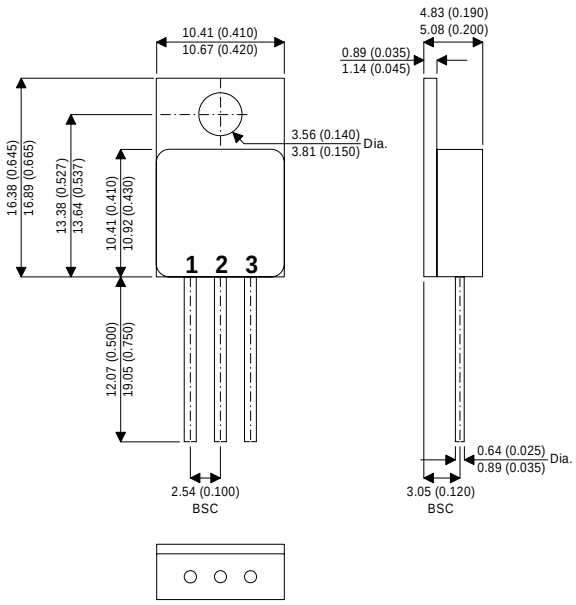
IRFY9230

MECHANICAL DATA
Dimensions in mm (inches)



TO–257AA – Metal Package

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

P–CHANNEL POWER MOSFET FOR HI–REL APPLICATIONS

V_{DSS} – 200V
$I_{D(cont)}$ – 6.5A
$R_{DS(on)}$ 0.80Ω

FEATURES

- HERMETICALLY SEALED TO–257AA METAL PACKAGE
- SIMPLE DRIVE REQUIREMENTS
- LIGHTWEIGHT
- SCREENING OPTIONS AVAILABLE
- ALL LEADS ISOLATED FROM CASE

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	- 6.5A
I_D	Continuous Drain Current @ T_{case} = 100°C	- 4.0A
I_{DM}	Pulsed Drain Current	- 28A
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 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.

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 3280
Issue 1

SEME LAB

IRFY9230

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 = 1mA	- 200			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I_D = 1mA		- 0.2		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance	V_{GS} = -10V I_D = - 4.0A			0.80	Ω
		V_{GS} = -10V I_D = - 6.5A			0.92	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS} I_D = - 250µA	- 2		- 4	V
g_{fs}	Forward Transconductance	V_{DS} ≥ -15V I_{DS} = - 4A	2			S(℧)
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS} = 0 V_{DS} = - 0.8BV_{DSS}			- 25	µA
		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		700		pF
C_{oss}	Output Capacitance	V_{DS} = 25V		200		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		40		
Q_g	Total Gate Charge	V_{GS} = - 10V I_D = - 6.5A V_{DS} = - 0.5BV_{DSS}			31	nC
Q_{gs}	Gate – Source Charge	I_D = - 6.5A			7	nC
Q_{gd}	Gate – Drain (“Miller”) Charge	V_{DS} = - 0.5BV_{DSS}			17	
$t_{d(on)}$	Turn–On Delay Time	V_{DD} = - 100V I_D = - 6.5A R_G = 7.5Ω			50	ns
t_r	Rise Time				100	
$t_{d(off)}$	Turn–Off Delay Time				100	
t_f	Fall Time				80	
	SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current				- 6.5	A
I_{SM}	Pulse Source Current				- 28	
V_{SD}	Diode Forward Voltage	I_S = - 6.5A T_J = 25°C V_{GS} = 0			- 6	V
t_{rr}	Reverse Recovery Time	I_S = - 6.5A T_J = 25°C			400	ns
Q_{rr}	Reverse Recovery Charge	d_i / d_t ≤ 100A/µs V_{DD} ≤ - 50V			4	µC
	PACKAGE CHARACTERISTICS					
L_D	Internal Drain Inductance (from 6mm down drain lead pad to centre of die)			8.7		nH
L_S	Internal Source Inductance (from 6mm down source lead to centre of source bond pad)			8.7		

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.

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 3280
Issue 1