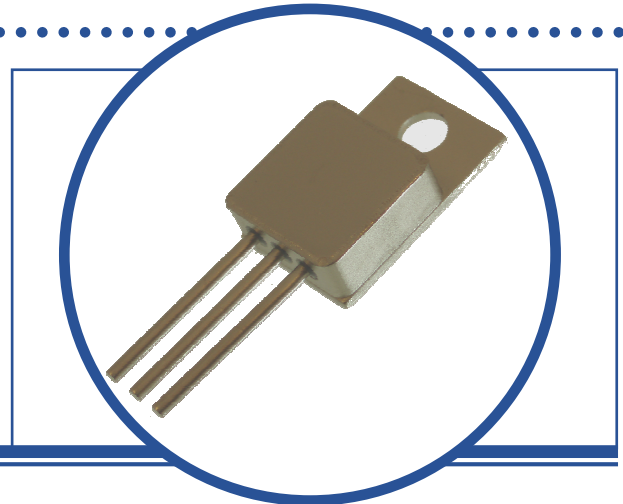


N-CHANNEL POWER MOSFET

IRFY330

- $BV_{DSS} = 400V$, MOSFET Transistor
In A Hermetic Metal TO-257AB Package
- Designed For Switching, Power Supply,
Motor Control and Amplifier Applications
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ C$ unless otherwise stated)

VDS	Drain – Source Voltage		400V
VGS	Gate – Source Voltage		$\pm 20V$
I_D	Continuous Drain Current	$T_C = 25^\circ C$	5.5A
I_D	Continuous Drain Current	$T_C = 100^\circ C$	3.5A
I_{DM}	Pulsed Drain Current ⁽¹⁾		22A
P_D	Total Power Dissipation at	$T_C = 25^\circ C$	75W
		Derate Above $25^\circ C$	$0.6W/^\circ C$
E_{AS}	Single Pulse Avalanche Energy ⁽²⁾⁽⁵⁾		1.7mJ
I_{AR}	Avalanche Current ⁽¹⁾⁽⁵⁾		5.5A
dv/dt	Peak Diode Recovery ⁽³⁾⁽⁵⁾		4V/ns
T_J	Junction Temperature Range		-55 to $+150^\circ C$
T_{stg}	Storage Temperature Range		-55 to $+150^\circ C$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	1.67	$^\circ C/W$

INTERNAL PACKAGE INDUCTANCE

Symbols	Parameters	Min.	Typ.	Max.	Units
L_D	Internal Drain Inductance		8.7		nH
L_S	Internal Source Inductance		8.7		

Notes

- (1) Repetitive Rating: Pulse width limited by maximum junction temperature
- (2) @ $V_{DD} = 50V$, Starting $T_J = 25^\circ C$, Peak $I_L = 5.5A$,
- (3) @ $I_{SD} \leq 5.5A$, $di/dt \leq 90A/\mu s$, $V_{DD} \leq BV_{DSS}$, $T_J \leq 150^\circ C$, Suggested $R_G = 7.5\Omega$
- (4) Pulse Width $\leq 380\mu s$, $\delta \leq 2\%$
- (5) By Design Only, Not A Production Test.

Semelab Limited 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.

N-CHANNEL POWER MOSFET IRFY330

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0 I _D = 250μA	400			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} I _D = 250μA	2		4	V
I _{GSS}	Forward Gate-Source Leakage	V _{GS} = 20V			100	nA
I _{GSS}	Reverse Gate-Source Leakage	V _{GS} = -20V			-100	
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} = 0 V _{DS} = 400V			250	μA
I _{D(on)}	On-State Drain Current	V _{GS} = 10V V _{DS} ≥ 10V	5.5			A
R _{DS(on)}	Static Drain-Source On-State Resistance	V _{GS} = 10V I _D = 3A ⁽⁴⁾			1.0	Ω
g _{fs}	Forward Transconductance	V _{DS} ≥ 10V I _{DS} = 3A ⁽⁴⁾	3			S(Ω)

DYNAMIC CHARACTERISTICS

C _{iss}	Input Capacitance	V _{GS} = 0		620		pF
C _{oss}	Output Capacitance	V _{DS} = 25V		200		
C _{rss}	Reverse Transfer Capacitance	f = 1.0MHz		75		
Q _g ⁽⁵⁾	Total Gate Charge	V _{GS} = 10V			39	nC
Q _{gs} ⁽⁵⁾	Gate-Source Charge	I _D = 5.5A			6	
Q _{gd} ⁽⁵⁾	Gate-Drain Charge	V _{DS} = 0.5BV _{DSS}			20	
t _{d(on)}	Turn-On Delay Time	V _{DD} = 200V			30	ns
t _r	Rise Time	I _D = 5.5A			40	
t _{d(off)}	Turn-Off Delay Time				80	
t _f	Fall Time	R _G = 7.5Ω			35	

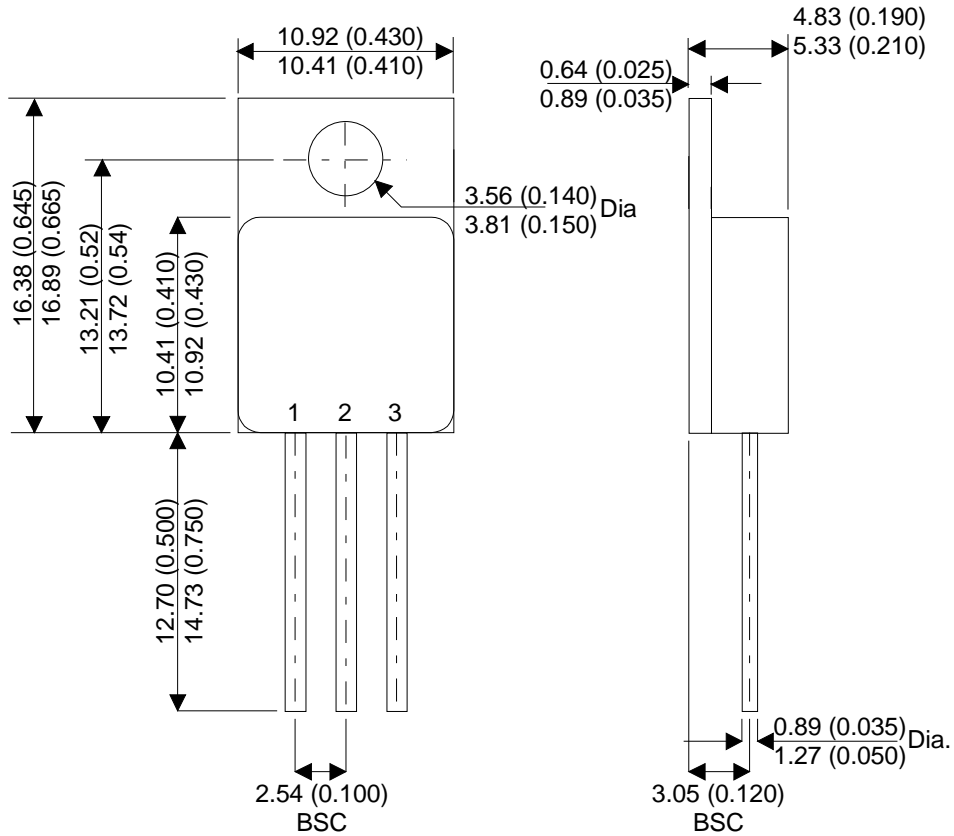
SOURCE-DRAIN DIODE CHARACTERISTICS

I _S	Continuous Source Current				5.5	A
I _{SM}	Pulse Source Current ⁽¹⁾				22	
V _{SD}	Diode Forward Voltage	I _S = 5.5A T _J = 25°C V _{GS} = 0 ⁽⁴⁾			1.6	V
t _{rr}	Reverse Recovery Time	I _S = 5.5A T _J = 25°C		600		ns
Q _{rr}	Reverse Recovery Charge	V _{DD} ≤ 50V di/dt = 100A/μs ⁽⁴⁾		4		μC

N-CHANNEL POWER MOSFET IRFY330

MECHANICAL DATA

Dimensions in mm (inches)



TO220M (TO-257AB)

Pin 1 - Gate

Pin 2 - Drain

Pin 3 - Source