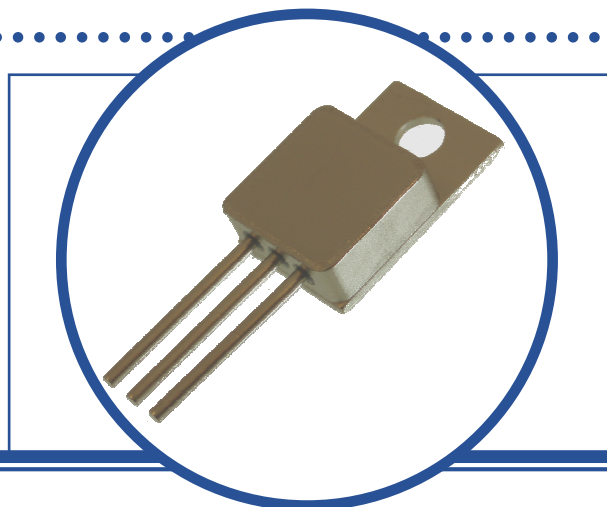


N-CHANNEL POWER MOSFET

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)

V _{DS}	Drain – Source Voltage	400V
V _{GS}	Gate – Source Voltage	±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°C	0.6W/°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°C
T _{stg}	Storage Temperature Range	-55 to +150°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
R _{θJC}	Thermal Resistance, Junction To Case	1.67	°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°C, Peak I_L = 5.5A,
- (3) @ I_{SD} ≤ 5.5A, di/dt ≤ 90A/μs, V_{DD} ≤ BV_{DSS}, T_J ≤ 150°C, Suggested R_G = 7.5Ω
- (4) Pulse Width ≤ 380us, δ ≤ 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 ($T_C = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 250\mu\text{A}$	400			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250\mu\text{A}$	2		4	V
I_{GSS}	Forward Gate-Source Leakage	$V_{GS} = 20\text{V}$			100	nA
I_{GSS}	Reverse Gate-Source Leakage	$V_{GS} = -20\text{V}$			-100	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 400\text{V}$			250	μA
$I_{D(on)}$	On-State Drain Current	$V_{GS} = 10\text{V}$ $V_{DS} \geq 10\text{V}$	5.5			A
$R_{DS(on)}$	Static Drain-Source On-State Resistance	$V_{GS} = 10\text{V}$ $I_D = 3\text{A}^{(4)}$			1.0	Ω
g_{fs}	Forward Transconductance	$V_{DS} \geq 10\text{V}$ $I_{DS} = 3\text{A}^{(4)}$	3			S(Ω)

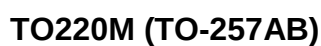
DYNAMIC CHARACTERISTICS

C_{iss}	Input Capacitance	$V_{GS} = 0$		620		pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		200		
C_{rss}	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$		75		
$Q_g^{(5)}$	Total Gate Charge	$V_{GS} = 10\text{V}$			39	nC
$Q_{gs}^{(5)}$	Gate-Source Charge	$I_D = 5.5\text{A}$			6	
$Q_{gd}^{(5)}$	Gate-Drain Charge	$V_{DS} = 0.5BV_{DSS}$			20	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 200\text{V}$			30	ns
t_r	Rise Time	$I_D = 5.5\text{A}$			40	
$t_{d(off)}$	Turn-Off Delay Time				80	
t_f	Fall Time	$R_G = 7.5\Omega$			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	$I_S = 5.5\text{A}$ $T_J = 25^\circ\text{C}$ $V_{GS} = 0^{(4)}$			1.6	V
t_{rr}	Reverse Recovery Time	$I_S = 5.5\text{A}$ $T_J = 25^\circ\text{C}$		600		ns
Q_{rr}	Reverse Recovery Charge	$V_{DD} \leq 50\text{V}$ $di/dt = 100\text{A}/\mu\text{s}^{(4)}$		4		μC

Dimensions in mm (inches)



Pin 3 - Source