

Pb Free Plating Product

IRFP150N



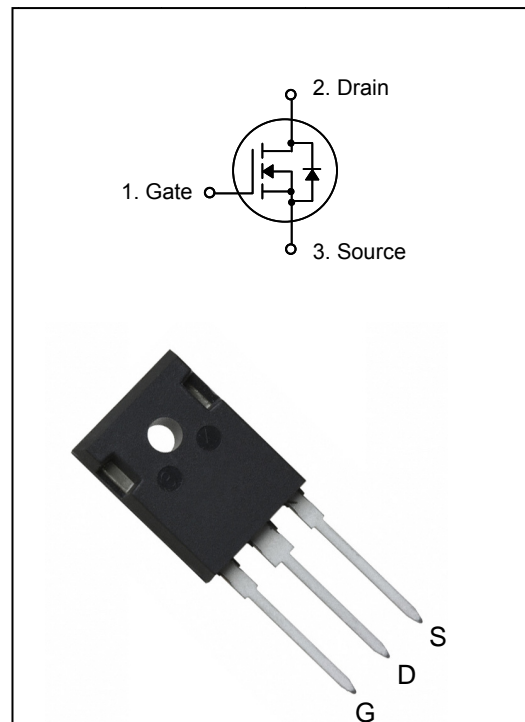
100V,60A Heatsink N-Channel Type Power MOSFET

General Features

- $V_{DS}=100V, I_D=60A$
- $R_{dson} \leq 30m\Omega @ V_{GS}=10V$ (Typ:25m Ω)
- Extended Safe Operating Area
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

Application

- Power switching application
- Load switch



Electrical Characteristics @ $T_a=25^\circ C$ (unless otherwise specified)

a) Limited Parameters:

Symbol	Parameter	Value	Units
V_{DSS}	Drain-to-Source Breakdown Voltage	100	V
I_D	Drain Current (continuous) at $T_c=25^\circ C$	60	A
I_{DM}	Drain Current (pulsed)	240	A
V_{GS}	Gate to Source Voltage	+/-25	V
P_{tot}	Total Dissipation at $T_c=25^\circ C$	300	W
T_j	Max. Operating Junction Temperature	175	$^\circ C$
Eas	Single Pulse Avalanche Energy	750	mj

b) Electrical Parameters:

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{DS}	Drain-source Voltage	$V_{GS}=0V, I_D=250\mu A$	100	120		V
$R_{DS(on)}$	Static Drain-to-Source on-Resistance	$V_{GS}=10V, I_D=30A$		25	30	m Ω
$V_{GS(th)}$	Gated Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	3.0	4.0	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0V$			1.0	μA
$I_{GSS(F)}$	Gated Body Leakage Current	$V_{GS}=+25V,$			100	nA
$I_{GSS(R)}$	Gated Body Leakage Current	$V_{GS}=-25V,$			-100	nA
C_{iss}	Input Capacitance	$V_{GS}=0V,$		4200		pF
C_{oss}	Output Capacitance	$V_{DS}=30V,$		440		pF
C_{rss}	Reverse Transfer Capacitance	$f=1.0MHz$		218		pF
Q_g	Total Gate Charge	$V_{DS}=80V$		92		nC
Q_{gs}	Gate-Source Charge	$I_D=40A$		25		nC
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$		31		nC

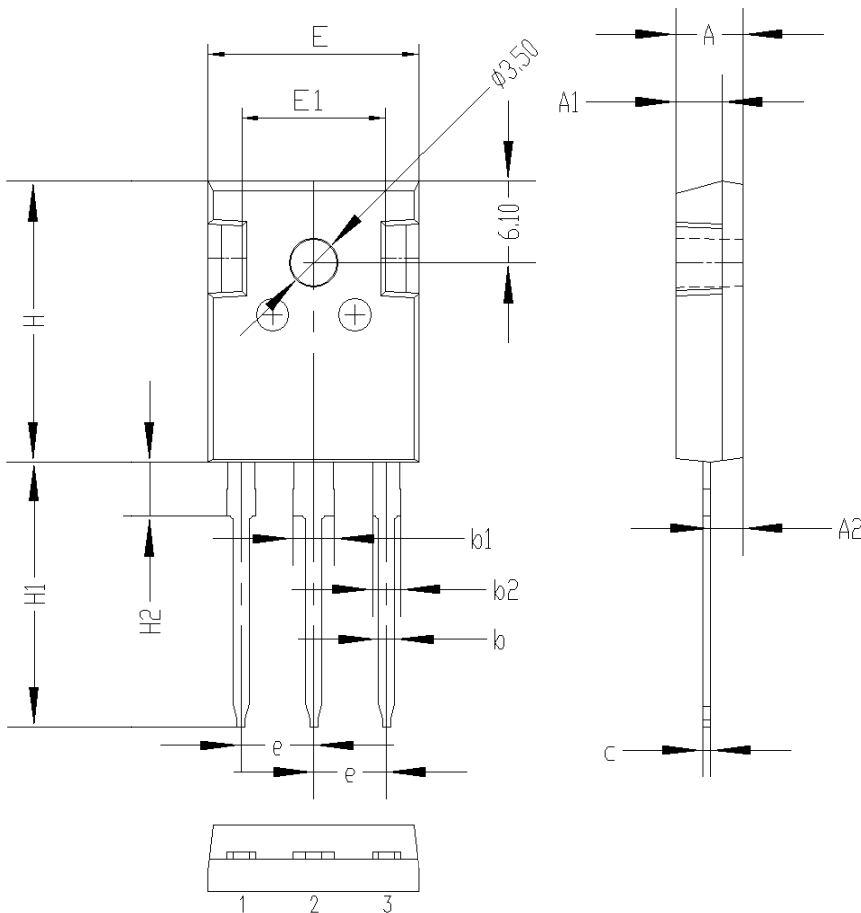
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=35V, I_D=10A$		16		nS
t_r	Turn-on Rise Time	$V_{GS}=10V, R_G=6\Omega$		26		nS
$t_{d(off)}$	Turn-off Delay Time			70		nS
t_f	Turn-off Fall Time			71		nS

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
I_{SD}	S-D Current(Body Diode)			60		A
I_{SDM}	Pulsed S-D Current(Body Diode)			240		A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_{DS}=40A$			1.3	V
t_{rr}	Reverse Recovery Time	$T_J=25^\circ C, I_F=40A$		82		nS
Q_{rr}	Reverse Recovery Charge	$di/dt=100A/us$		150		nC
*Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$						

Symbol	Parameter	Typ	Units
$R_{\theta JC}$	Junction-to-Case	0.6	$^\circ C/W$

Package Information

TO-247 PACKAGE



	單位: mm		
	MIN	NOM	MAX
A	4.8	5	5.2
A1	3.3	3.5	3.7
A2	2.1	2.3	2.5
b	1	1.2	1.4
b1	2.9	3.1	3.3
b2	1.9	2.1	2.3
c	0.4	0.6	0.8
e	5.25	5.45	5.65
E	15.6	15.8	16
E1	10.6	10.8	11
H	20.8	21	21.2
H1	19.4	19.9	20.4
H2	3.9	4.1	4.3
G	5.9	6.1	6.3
ØP	3.3	3.5	3.7