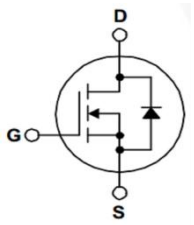
迈诺斯科技

IRFP4227

Silicon N-Channel Power MOSFET

Description

The IRFP4227 uses advanced trench technology and design to provide excellent RDS(ON) . It can be used in a wide variety of applications.



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General Features

① V_{DS}=200V, I_D=65A
R_{dson} ≦ 20mΩ @V_{GS}=10V (Typ:20mΩ)
R_{dson} ≦ 25mΩ @V_{GS}=4.5V (Typ:25mΩ)
② Low ON Resistance
③ Low Reverse transfer capacitances
④ 100% Single Pulse avalanche energy Test

Application

① Power Switching application
② Load switch

Package Marking And Ordering Information:

Ordering Codes	Package	Product Code	Packing
IRFP4227	TO-247	IRFP4227	Tube

Electrical Characteristics @ Ta=25℃ (unless otherwise specified)

Limited Parameters:

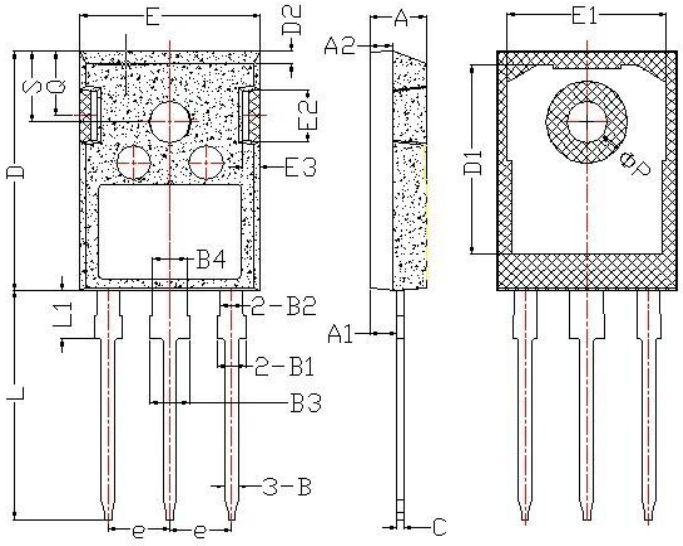
Symbol	Parameter	Value	Units
V_{DSS}	Drain-to-Source Breakdown Voltage	200	V
I_D	Drain Current (continuous) at Tc=25℃	65	A
I_{DM}	Drain Current (pulsed)	300	A
V_{GS}	Gate to Source Voltage	+/-20	V
P_{tot}	Total Dissipation at Tc=25℃	150	W
T_j	Max. Operating Junction Temperature	175	℃
Eas	Single Pulse Avalanche Energy	256	mj

Electrical Parameters:

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{DS}	Drain-source Voltage	V_{GS}=0V, I_D=250μA	200	220		V
$R_{DS(on)}$	Static Drain-to-Source on-Resistance	V_{GS}=10V, I_D=46A		20	25	mΩ
		V_{GS}=4.5V, I_D=46A		25	30	mΩ
$V_{GS(th)}$	Gated Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	3.0	3.9	5.0	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=200V, V_{GS} = 0V			1.0	μA
$I_{GSS(F)}$	Gated Body Leakage Current	V_{GS} = +20V,			100	nA
$I_{GSS(R)}$	Gated Body Leakage Current	V_{GS} = -20V,			-100	nA
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=25V, f=1.0MHZ		2200		pF
C_{oss}	Output Capacitance			225		pF
C_{rss}	Reverse Transfer Capacitance			165		pF
Q_g	Total Gate Charge	V_{DS}=25V I_D=46A V_{GS}=10V		58		nC
Q_{gs}	Gate-Source Charge			6		nC
Q_{gd}	Gate-Drain Charge			15		nC
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Unit**
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=25V,I_D=46A,R_L=0.3Ω V_{GS}=10V,R_G=6.8Ω		20		nS
t_r	Turn-on Rise Time			90		nS
$t_{d(off)}$	Turn-off Delay Time			45		nS
t_f	Turn-off Fall Time			90		nS
Symbol	**Paramet**	**Test Conditions**	**Min**	**Typ**	**Max**	**Unit**
I_{SD}	S-D Current(Body Diode)			65		A
I_{SDM}	Pulsed S-D Current(BodyDiode)			300		A
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_{DS}=46A			1.4	V
t_{rr}	Reverse Recovery Time	T_J=25℃,I_F=46A di/dt=100A/us		102		nS
Q_{rr}	Reverse Recovery Charge			50		nC
	*Pulse Test: Pulse Width <= 300μs, Duty Cycle< =2%					

Symbol	Paramter	Typ	Units
$R_{\theta JC}$	Junction-to-Case	1.3	℃/W

Package Description



Items	Values(mm)	
	MIN	MAX
A	4.6	5.2
A1	2,2	2.6
B	0.9	1.4
B1	1.75	2.35
B2	1.75	2.15
B3	2.8	3.35
B4	2.8	3.15
C	0.5	0.7
D	20.60	21.30
D1	16	18
E	15.5	16.10
E1	13	14.7
E2	3.80	5.3
E3	0.8	2.60
e	5.2	5.7
L	19	20.5
L1	3.9	4.6
ΦP	2.5	3.70
Q	5.2	6.00
S	5.8	6.6

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NOTE:

1. Exceeding the maximum ratings of the device in performance may cause damage to the device, even the permanent failure, which may affect the dependability of the machine. Please do not exceed the absolute maximum ratings of the device when circuit designing.
2. When installing the heat sink, please pay attention to the torsional moment and the smoothness of the heat sink.
3. MOSFETs is the device which is sensitive to the static electricity, it is necessary to protect the device from being damaged by the static electricity when using it.
4. Shenzhen Minos reserves the right to make changes in this specification sheet and is subject to change withoutprior notice.

CONTACT:

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