

Silicon N-Channel Power MOSFET

Description

The IRF740 uses advanced technology and design to provide excellent RDS(ON). It can be used in a wide variety of applications.

General Features

- ① V_{DS}=400V, I_D=10A
- ② Low ON Resistance
- ③ Low Reverse transfer capacitances
- ④ 100% Single Pulse avalanche energy Test

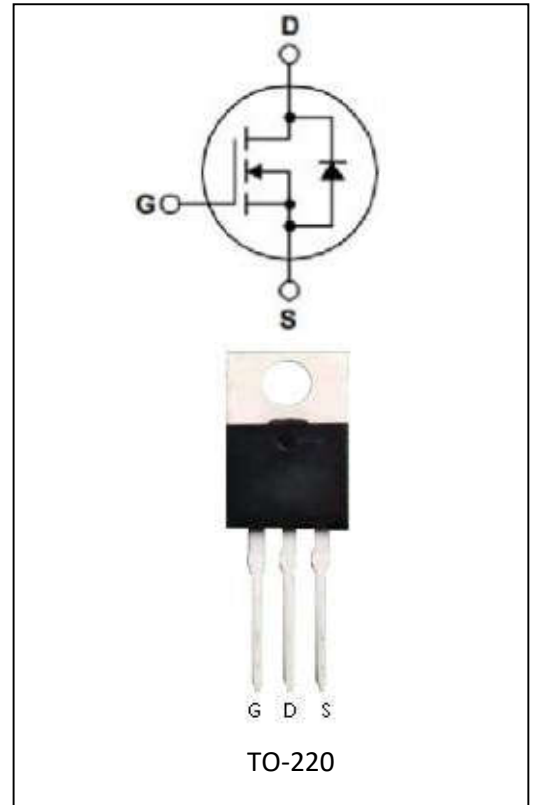
Application

- ① Power switching application
- ② Adapter and charger

Electrical Characteristics

@ Ta=25°C (unless otherwise specified)

Absolute Maximum Ratings:



Symbol	Parameter	Value	Units
V _{DSS}	Drain-to-Source Breakdown Voltage	400	V
I _D	Drain Current (continuous) at T _c =25°C	10	A
I _{DM}	Drain Current (pulsed)	40	A
V _{GS}	Gate to Source Voltage	+/-30	V
P _{tot}	Total Dissipation at T _c =25°C	100	W
T _j	Max. Operating Junction Temperature	175	°C
E _{AS}	Single Pulse Avalanche Energy	424	mJ

Electrical Parameters:

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V _{DS}	Drain-source Voltage	V _{GS} =0V, I _D =250μA	400			V
R _{DS(on)}	Static Drain-to-Source on-Resistance	V _{GS} =10V, I _D =5A		0.4	0.50	Ω
V _{GS(th)}	Gated Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	2.0		4.0	V
I _{DSS}	Drain to Source leakage Current	V _{DS} =400V, V _{GS} = 0V			1.0	μA
I _{GSS(F)}	Gated Body Foward Leakage	V _{GS} = +30V			100	nA
I _{GSS(R)}	Gated Body Reverse Leakage	V _{GS} = -30V			-100	nA
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V, f=1.0MHZ		1162		pF
C _{oss}	Output Capacitance			160		pF
C _{rss}	Reverse Transfer Capacitance			17		pF

Switching Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
t _{d(on)}	Turn-on Delay Time	V _{DD} =200V, I _D =10A, R _G =10Ω		16.5		nS
t _r	Turn-on Rise Time			20.8		nS
t _{d(off)}	Turn-off Delay Time			46.9		nS
t _f	Turn-off Fall Time			18.5		nS
Q _g	Total Gate Charge	V _{DS} =320V I _D =10A V _{GS} =10V		32		nC
Q _{gs}	Gate-Source Charge			5		nC
Q _{gd}	Gate-Drain Charge			15		nC

Source-Drain Diode Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
I _{SD}	S-D Current(Body Diode)				10	A
I _{SDM}	Pulsed S-D Current(Body Diode)				40	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _{DS} =18A			1.5	V
t _{rr}	Reverse Recovery Time	T _J =25°C, I _F =18A di/dt=100A/us			216	nS
Q _{rr}	Reverse Recovery Charge				1640	μC
*Pulse Test: Pulse Width <= 300μs, Duty Cycle< =2%						

Symbol	Parameter	Typ	Units
R _{θJC}	Junction-to-Case	1.5	°C/W



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 without prior notice.

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