



PRODUCT NAME : IRF720 N-Channel Mos
fet

PRICE : Rs 39.00

SKU : RM2125



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DESCRIPTION

Features

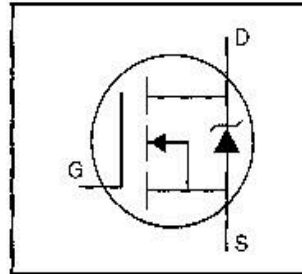
- Drain-Source Volt (Vds): 400V
- Gate-Source Volt (Vgs): 20V
- Drain Current (Id): 3.3A
- Power Dissipation (Ptot): 50W
- Type: N-Channel

International Rectifier

IRF720

HEXFET® Power MOSFET

- Dynamic dv/dt Rating
- Repetitive Avalanche Rated
- Fast Switching
- Ease of Paralleling
- Simple Drive Requirements

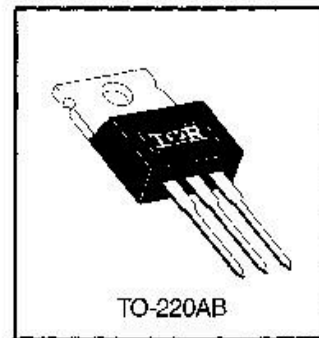


$V_{DSS} = 400V$
 $R_{DS(on)} = 1.8\Omega$
 $I_D = 3.3A$

Description

Third Generation HEXFETs from International Rectifier provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

The TO-220 package is universally preferred for all commercial-industrial applications at power dissipation levels to approximately 50 watts. The low thermal resistance and low package cost of the TO-220 contribute to its wide acceptance throughout the industry.



DATA SHEETS

Absolute Maximum Ratings

Parameter	Parameter	Max.	Units
$I_D @ T_C = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10 V$	3.3	A
$I_D @ T_C = 100^\circ C$	Continuous Drain Current, $V_{GS} @ 10 V$	2.1	
I_{DM}	Pulsed Drain Current ①	13	W
$P_D @ T_C = 25^\circ C$	Power Dissipation	50	
	Linear Derating Factor	0.40	W/°C
V_{GS}	Gate-to-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy ②	190	mJ
I_{AR}	Avalanche Current ③	3.3	A
E_{AR}	Repetitive Avalanche Energy ①	5.0	mJ
dv/dt	Peak Diode Recovery dv/dt ③	4.0	V/ns
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to +150	°C
	Soldering Temperature, for 10 seconds	300 (1.6mm from case)	
	Mounting Torque, 6-32 or M3 screw	10 lbf·in (1.1 N·m)	

Thermal Resistance

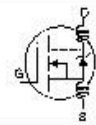
Parameter	Parameter	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-Case	—	—	2.5	°C/W
$R_{\theta CS}$	Case-to-Sink, Flat, Greased Surface	—	0.50	—	
$R_{\theta JA}$	Junction-to-Ambient	—	—	62	

IRF720



Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
V _{(BR)DSS}	400	—	—	V	V _{GS} =0V, I _D =250μA
ΔV _{(BR)DSS} /ΔT _J	—	0.51	—	V/°C	Reference to 25°C, I _D =1mA
R _{DS(on)}	—	—	1.8	Ω	V _{GS} =10V, I _D =2.0A ①
V _{GS(th)}	2.0	—	4.0	V	V _{DS} =V _{GS} , I _D =250μA
g _{fs}	1.7	—	—	S	V _{DS} =50V, I _D =2.0A ①
I _{DSS}	—	—	25	μA	V _{DS} =400V, V _{GS} =0V
	—	—	250	μA	V _{DS} =320V, V _{GS} =0V, T _J =125°C
I _{GSS}	—	—	100	nA	V _{GS} =20V
	—	—	-100	nA	V _{GS} =-20V
Q _g	—	—	20	nC	I _D =3.3A
Q _{gs}	—	—	3.3	nC	V _{DS} =320V
Q _{gd}	—	—	11	nC	V _{GS} =10V See Fig. 6 and 13 ④
t _{d(on)}	—	10	—	ns	V _{DD} =200V
t _r	—	14	—	ns	I _D =3.3A
t _{d(off)}	—	30	—	ns	R _G =18Ω
t _f	—	13	—	ns	R _D =56Ω See Figure 10 ②
L _D	—	4.5	—	nH	Between lead, 6 mm (0.25in.) from package and center of die contact
L _S	—	7.5	—	nH	
C _{iss}	—	410	—	pF	V _{GS} =0V
C _{oss}	—	120	—	pF	V _{DS} =25V
C _{rss}	—	47	—	pF	f=1.0MHz See Figure 5



Source-Drain Ratings and Characteristics

Parameter	Min.	Typ.	Max.	Units	Test Conditions
I _S	—	—	3.3	A	MOSFET symbol showing the integral reverse p-n junction diode.
I _{SM}	—	—	13	A	
V _{SD}	—	—	1.6	V	T _J =25°C, I _S =3.3A, V _{GS} =0V ③
t _{rr}	—	270	600	ns	T _J =25°C, I _F =3.3A
Q _{rr}	—	1.4	3.0	μC	di/dt=100A/μs ④
t _{on}	Intrinsic turn-on time is negligible (turn-on is dominated by L _S +L _D)				

Notes:

- ① Repetitive rating; pulse width limited by max. junction temperature (See Figure 11)
- ② V_{DD}=50V, starting T_J=25°C, L=30mH, R_G=25Ω, I_{AS}=3.3A (See Figure 12)
- ③ I_{SD}≤3.3A, di/dt≤65A/μs, V_{DD}≤V_{(BR)DSS}, T_J≤150°C
- ④ Pulse width ≤ 300 μs; duty cycle ≤2%.

