

TO-220-3L Plastic-Encapsulate MOSFETS

IRF730 MOSFET(N-Channel)

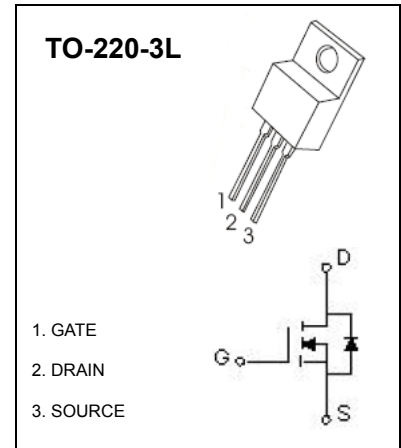
FEATURES

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

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. The low thermal resistance and low package cost of the TO-220 contribute to its wide acceptance throughout the industry.



MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
I_D	Continuous Drain Current, V_{GS} @ 10 V $T_C=25^{\circ}\text{C}$	5.5	A
		3.5	A
I_{DM}	Pulsed Drain Current (note 1)	22	A
P_D	Power Dissipation	2	W
V_{GS}	Gate-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy (note 2)	290	mJ
I_{AR}	Avalanche Current (note 1)	5.5	A
E_{AR}	Repetitive Avalanche Energy (note 1)	7.4	mJ
dv/dt	Peak Diode Recovery dv/dt (note 3)	4.0	V/ns
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62.5	$^{\circ}\text{C}/\text{W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

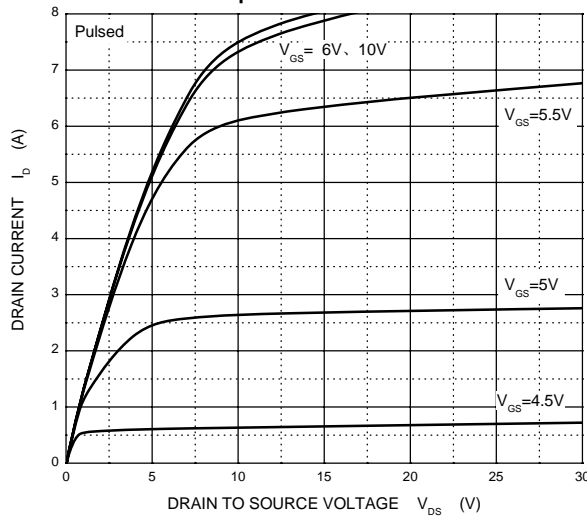
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test Wonditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	400			V
Gate-threshold voltage	V _{(GS)th}	V _{DS} =V _{GS} , I _D =250μA	2		4	
Gate-body leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =400V, V _{GS} =0V			25	μA
		V _{DS} =320V, V _{GS} =0V, T _J =125°C			250	
Drain-source on-resistance (note 4)	R _{DS(on)}	V _{GS} =10V, I _D =3.3A			1.0	Ω
Forward transconductance (note 4)	g _{fs}	V _{DS} =50V, I _D =3.3A	2.9			S
Diode forward voltage	V _{SD}	I _S =5.5A, V _{GS} =0V			1.6	V
Total gate charge	Q _g	V _{DS} =320V, V _{GS} =10V, I _D =3.5A			38	nC
Gate-source charge	Q _{gs}				5.7	
Gate-drain charge	Q _{gd}				22	
Input capacitance (note 5)	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		700		pF
Output capacitance (note 5)	C _{oss}			170		
Reverse transfer capacitance (note 5)	C _{rss}			64		
Turn-on time(note 4 ,5)	t _{d(on)}	V _{DD} =200V, R _D =57Ω, I _D =3.5A, R _G =12Ω		10		ns
Rise tme(note 4,5)	t _r			15		
Turn-off tme(note 4,5)	t _{d(off)}			38		
Fall time(note 4 ,5)	t _f			14		

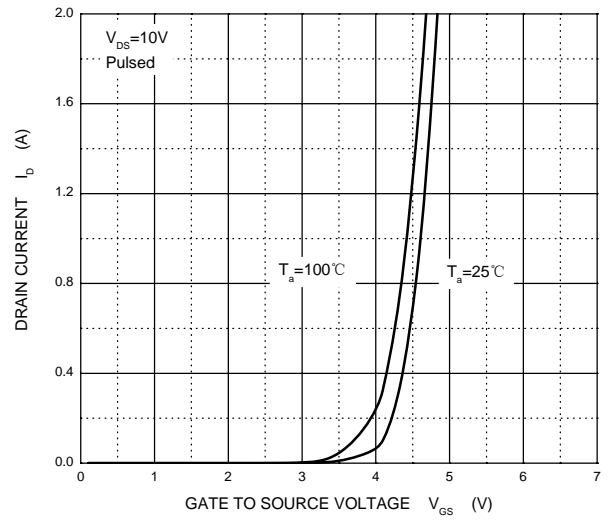
Notes:

1. Repetitive Rating ;Pulse width limited by maximum junction temperature.
2. L=16mH, I_{AS} =5.5A, V_{DD}=50V, R_G=25Ω, starting T_J = 25°C.
3. I_{SD}≤5.5A, di/dt≤90A/μs, V_{DD}≤V_{(BR)DSS}, T_J≤150°C.
4. Pulse width≤300μs, Duty cycle≤2%.
5. These parameters have no way to verify.

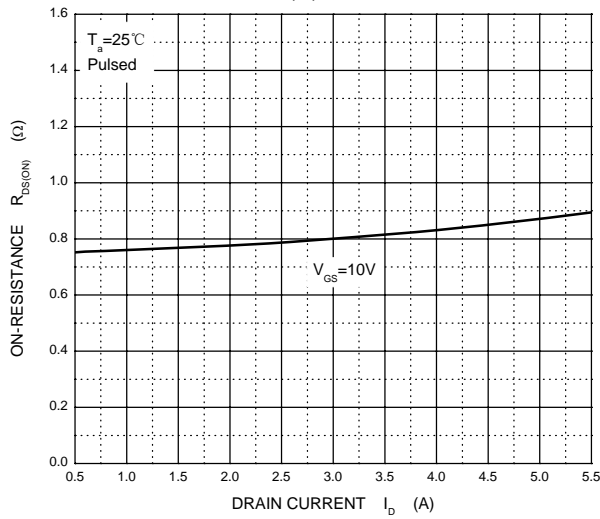
Output Characteristics



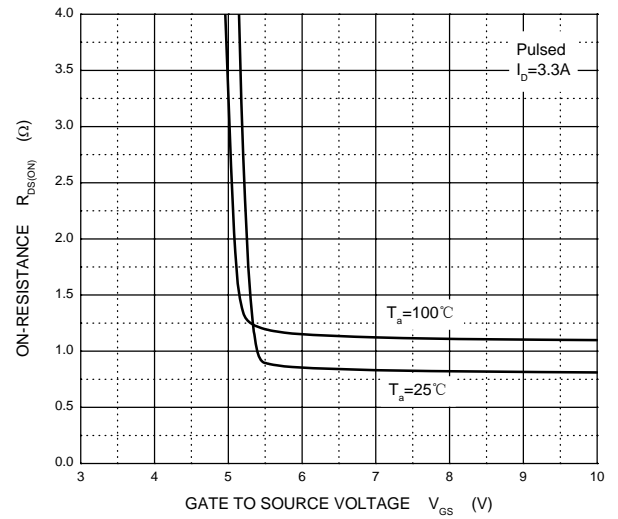
Transfer Characteristics



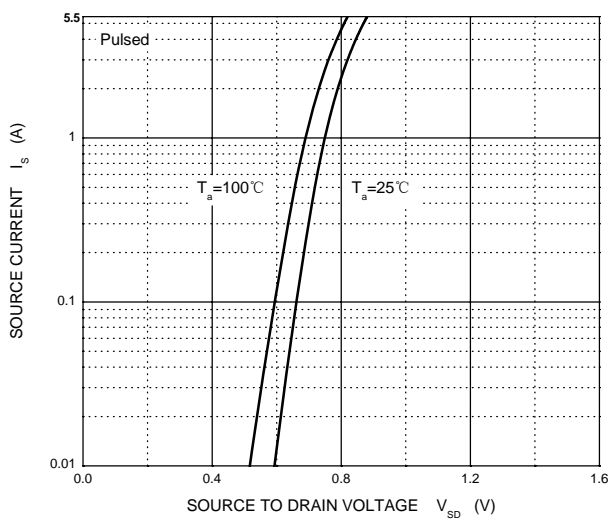
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

