



Micro Commercial Components
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IRF640

N-Channel Enhancement Mode Field Effect Transistor

Features

- Dynamic dv/dt Rating
- Repetitive Avalanche Rated
- Halogen free available upon request by adding suffix "-HF"
- Fast Switching
- Ease of Paralleling
- Simple Drive Requirement
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

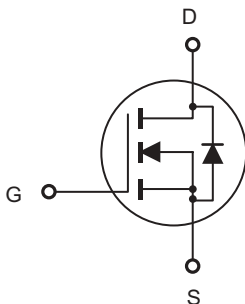
Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V _{GS}	Gate-source Voltage	± 20	V
I _D	Drain Current-Continuous, V _{GS} @10V	1i	A
P _D	Power Dissipation	G	W
	Linear Derating Factor	1.0	W/°C
E _{AS}	Single Pulsed Avalanche Energy(note1)	580	mJ
R _{θJA}	Thermal Resistance Junction to Ambient	62.5	°C/W
T _J	Operating Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature	-55 to +150	°C

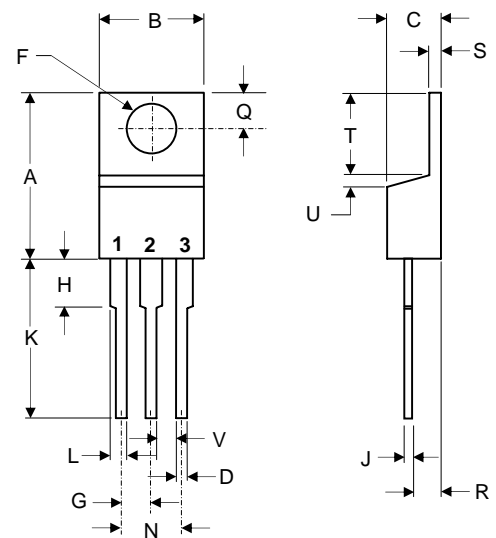
Notes

1. V_{DD}=50V, starting T_J=25°C, L=2.7mH, R_G=25Ω, I_{AS}=18A

Internal Block Diagram



TO-220



1.GATE
 2.DRAIN
 3.SOURCE

DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.560	.625	14.22	15.88	
B	.380	.420	9.65	10.67	
C	.140	.190	3.56	4.82	
D	.020	.045	0.51	1.14	
F	.134	.161	3.40	4.09	∅
G	.190	.110	2.29	2.79	
H	---	.250	---	6.35	
J	.012	.025	0.30	0.64	
K	.500	.580	12.70	14.73	
L	.045	.060	1.14	1.52	
N	.190	.210	4.83	5.33	
Q	.100	.135	2.54	3.43	
R	.080	.115	2.04	2.92	
S	.045	.055	1.14	1.39	
T	.230	.270	5.84	6.86	
U	----	.050	----	1.27	
V	.045	----	1.15	----	

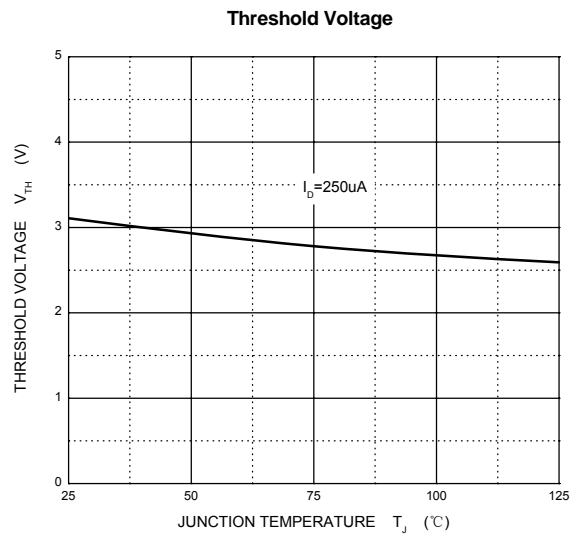
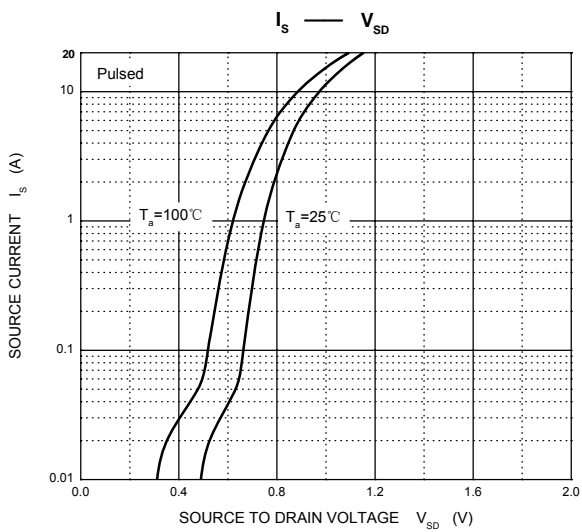
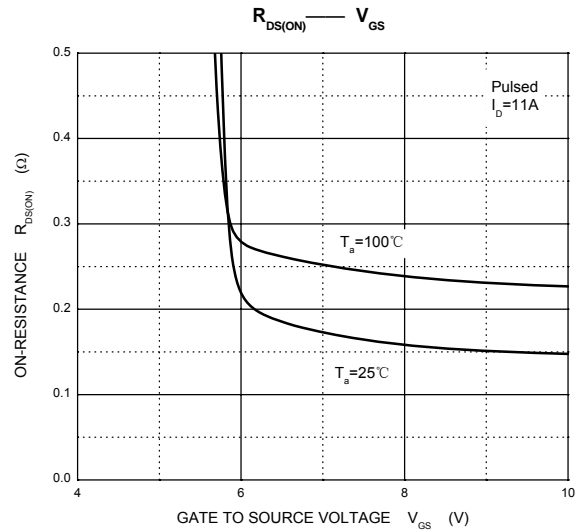
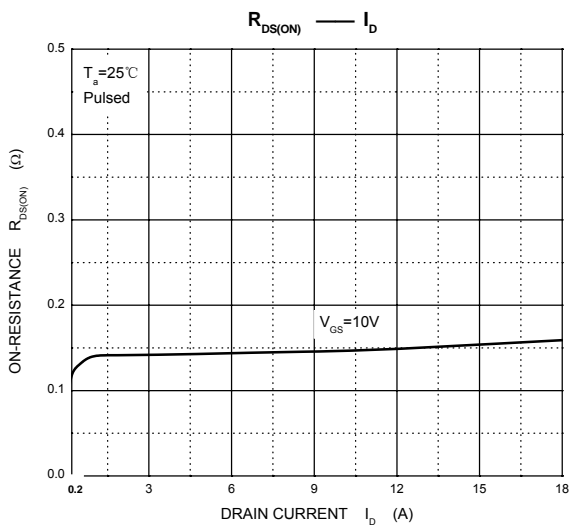
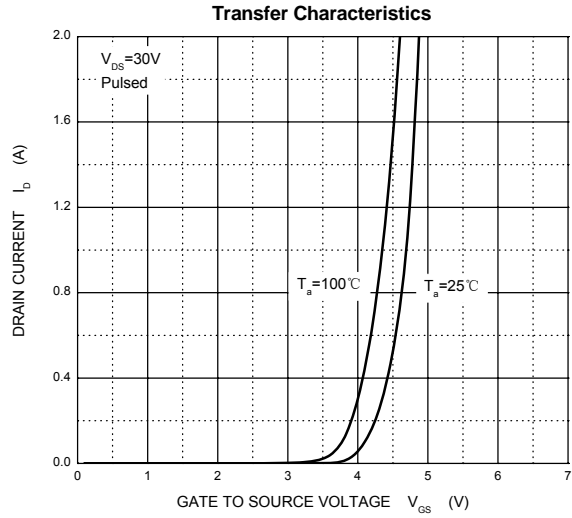
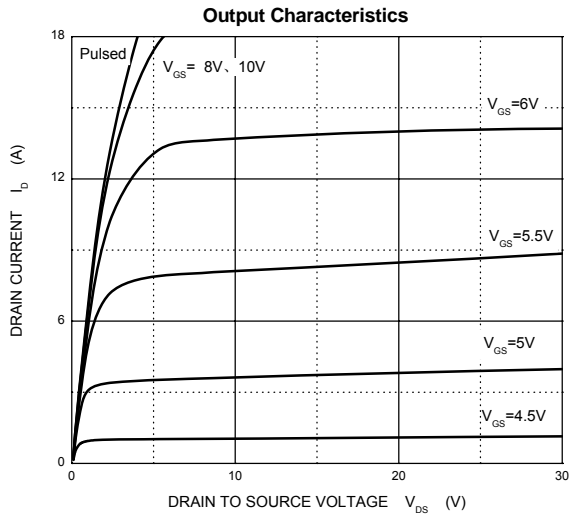
Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	200			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} =200V, V _{GS} =0V			25	μA
Drain-source on-resistance (note 2)	R _{DS(on)}	V _{GS} =10V, I _D =11A			0.18	Ω
Forward transconductance (note 2)	g _{fs}	V _{DS} =50V, I _D =11A	6.7			S
Diode forward voltage (note 2)	V _{SD}	I _S =18A, V _{GS} =0V			2	V
Input capacitance (note 3)	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		1300		pF
Output capacitance (note 3)	C _{oss}			430		
Reverse transfer capacitance (note 3)	C _{rss}			130		
Turn-on time(note 2,3)	t _{d(on)}	V _{DD} =100V, R _D =5.4Ω, I _D =18A, R _G =9.1Ω		14		ns
Rise time	t _r			51		
Turn-off time (note 2,3)	t _{d(off)}			45		
Fall time (note 2,3)	t _f			36		

Notes

- 2.Pulse test: Pulse width ≤300us, duty cycle≤2%
- 3.These parameters have no way to verify

Typical Characteristics





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Ordering Information :

Device	Packing
Part Number-BP	Bulk;50pcs/Tube

Note : Adding "-HF" suffix for halogen free, eg. Part Number-BP-HF

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