

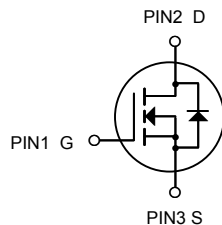
DESCRIPTION

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

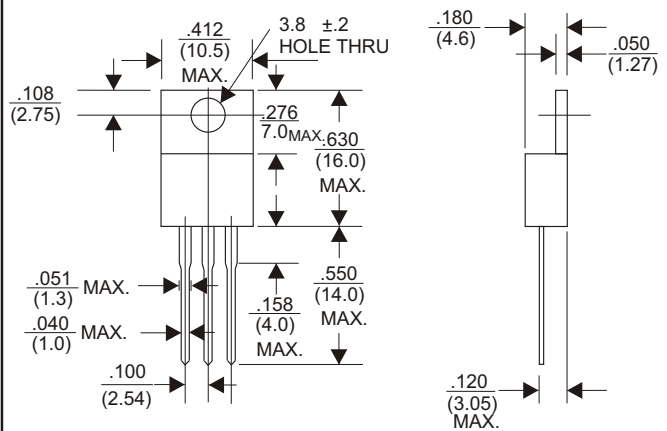
The TO-220-3L package is universally preferred for all commercial-industrial applications at power dissipation levels to approximately 50 watts. The low thermal resistance and low package cost of the TO-220-3L contribute to its wide acceptance throughout the industry.

FEATURE

- Repetitive Avalanche Rated
- Fast Switching
- Ease of Paralleling
- Simple Drive Requirement



TO-220AB



MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
I _D	Continuous Drain Current, V _{GS} @ 10 V	18	A
P _D	Power Dissipation	2	W
	Linear Derating Factor	1.0	W/°C
V _{GS}	Gate-Source Voltage	±20	V
E _{AS}	Single Pulse Avalanche Energy (note 1)	580	mJ
R _{θJA}	Thermal Resistance from Junction to Ambient	62.5	°C/W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-55~+150	°C

IRF640

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	200			V
Gate-threshold voltage	$V_{(GS)th}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2		4	
Gate-body leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS}=200V, V_{GS}=0V$			25	μA
Drain-source on-resistance (note 2)	$R_{DS(on)}$	$V_{GS}=10V, I_D=11A$		0.125	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}			400		
Reverse transfer capacitance (note 3)	C_{riss}			120		
Turn-on time (note 2,3)	$t_{d(on)}$	$V_{DD}=100V, R_D=5.4\Omega, I_D=18A, R_G=9.1\Omega$		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:

- $V_{DD}=50V$, starting $T_J=25^\circ\text{C}$, $L=2.7mH, R_G=25\Omega, I_{AS}=18A$.
- Pulse test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- These parameters have no way to verify.

RATING AND CHARACTERISTIC CURVES (IRF640)

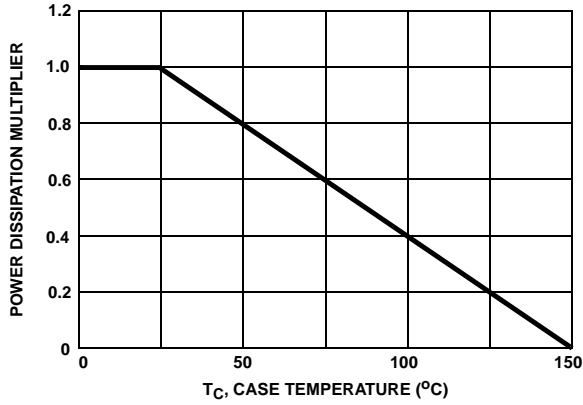


FIGURE 1. NORMALIZED POWER DISSIPATION vs CASE TEMPERATURE

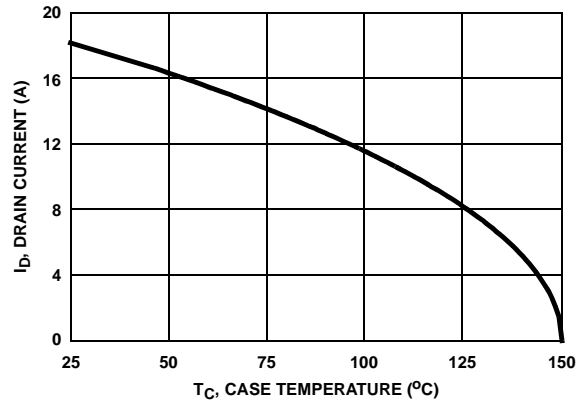


FIGURE 2. MAXIMUM CONTINUOUS DRAIN CURRENT vs CASE TEMPERATURE

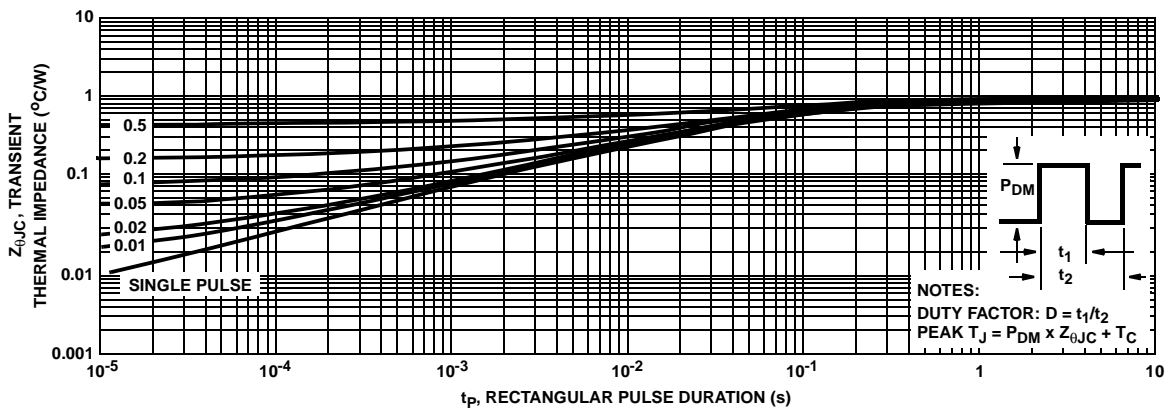


FIGURE 3. MAXIMUM TRANSIENT THERMAL IMPEDANCE

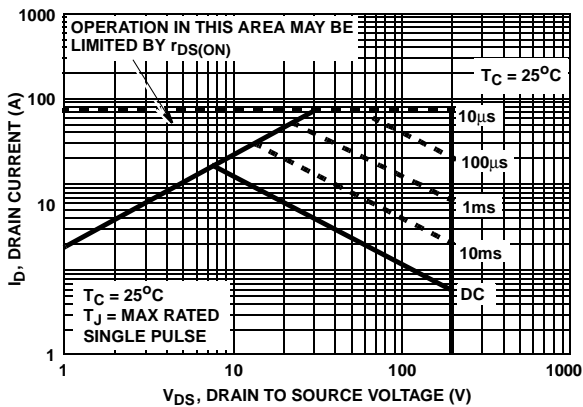


FIGURE 4. FORWARD BIAS SAFE OPERATING AREA

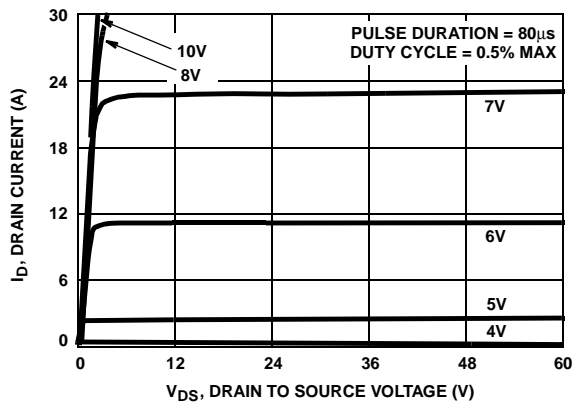
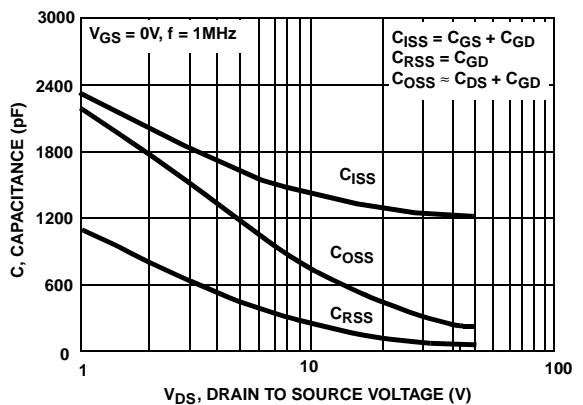
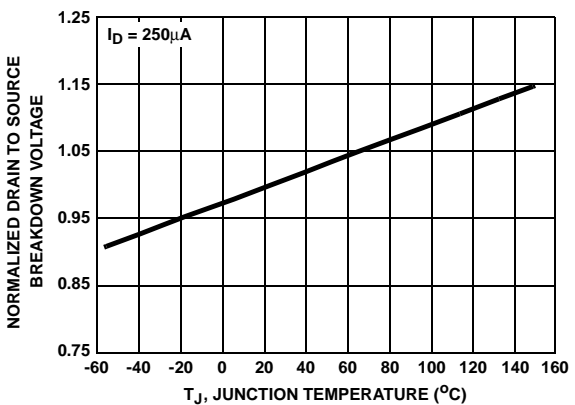
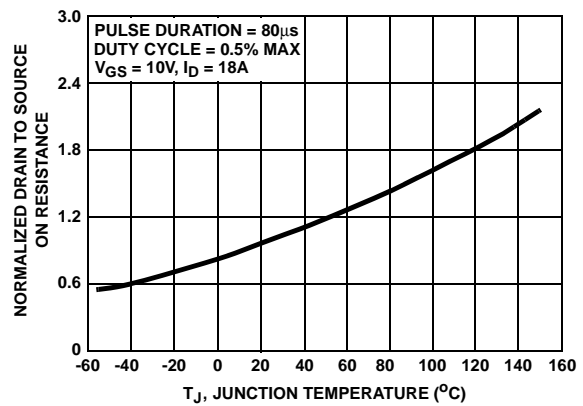
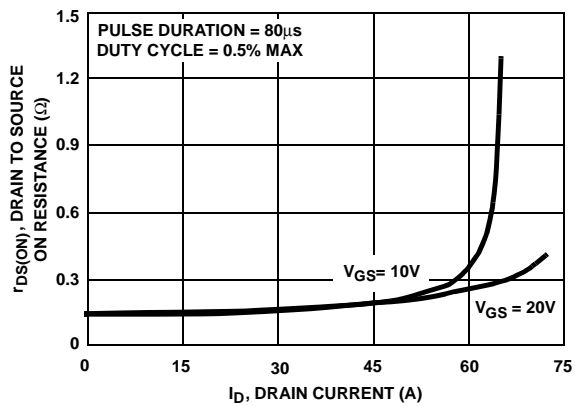
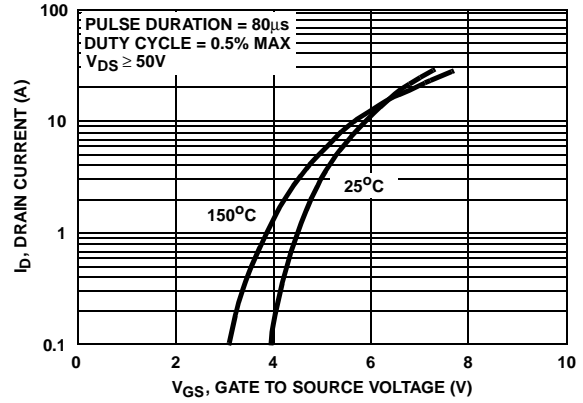
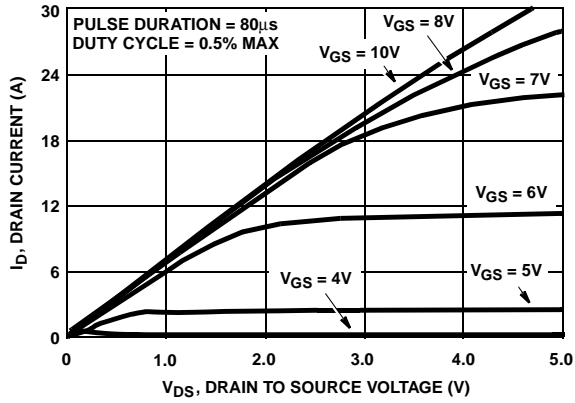


FIGURE 5. OUTPUT CHARACTERISTICS

RATING AND CHARACTERISTIC CURVES (IRF640)



RATING AND CHARACTERISTIC CURVES (IRF640)

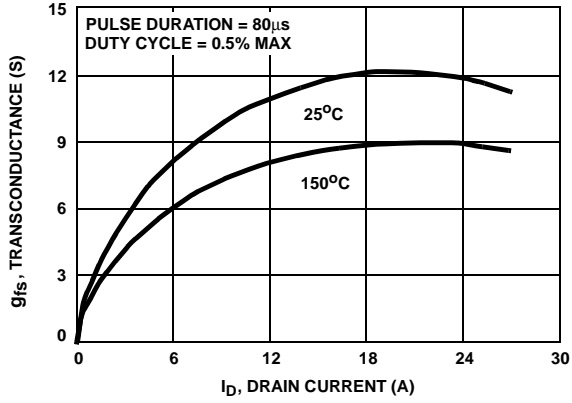


FIGURE 12. TRANSCONDUCTANCE vs DRAIN CURRENT

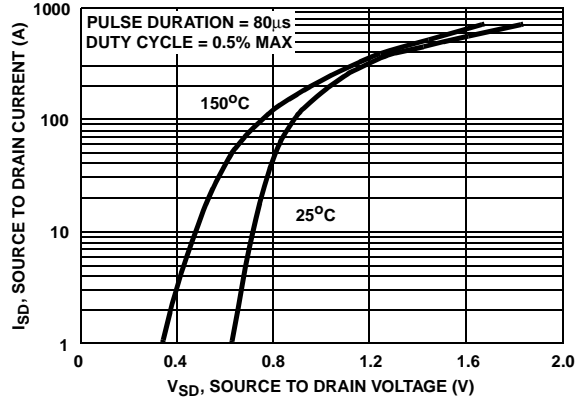


FIGURE 13. SOURCE TO DRAIN DIODE VOLTAGE

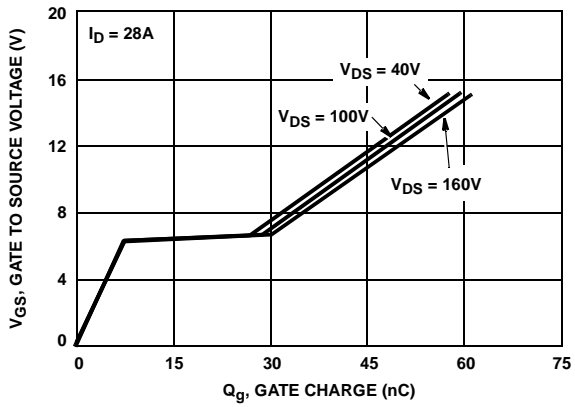


FIGURE 14. GATE TO SOURCE VOLTAGE vs GATE CHARGE

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [GOODWORK](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [BUK455-60A/B](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#) [IPS70R2K0CEAKMA1](#) [SQD23N06-31L-GE3](#)
[TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [DMN1053UCP4-7](#) [SQJ469EP-T1-GE3](#) [NTE2384](#) [DMC2700UDMQ-7](#)
[DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [DMN2990UFB-7B](#)
[IPB80P04P405ATMA2](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [MCQ7328-TP](#) [BXP7N65D](#) [BXP4N65F](#) [AOL1454G](#) [WMJ80N60C4](#) [BXP2N20L](#)
[BXP2N65D](#) [BXT1150N10J](#) [BXT1700P06M](#) [TSM60NB380CP](#) [ROG](#) [RQ7L055BGTCR](#) [DMNH15H110SK3-13](#) [SLF10N65ABV2](#)
[BSO203SP](#) [BSO211P](#) [IPA60R230P6](#) [IPA60R460CE](#)