

RoHS Compliant Product
A suffix of "-C" specifies halogen free

DESCRIPTION

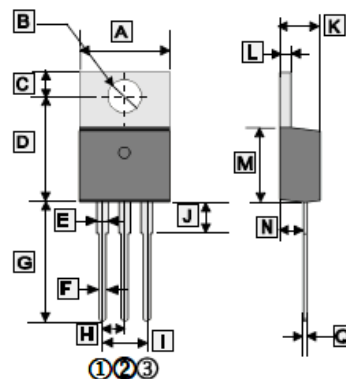
Third Generation HEXFETs from International Rectifier provide the designers with the best combination of fast switching, ruggedized device design, low on-resistance and cost effectiveness.

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

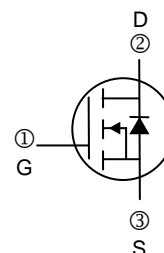
FEATURES

- Dynamic dv/dt rating
- Repetitive avalanche rated
- Fast switching
- Ease of paralleling
- Simple drive requirement

TO-220J



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	10.010	10.350	I	4.980	5.180
B	3.735	3.935	J	3.560	3.960
C	2.590	2.890	K	4.470	4.670
D	12.060	12.460	L	1.200	1.400
E	1.170	1.370	M	8.500	8.900
F	0.710	0.910	N	2.520	2.820
G	13.400	13.800	Q	0.330	0.650
H	2.540 TYP.				



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	200	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current @ $V_{GS}=10\text{V}$	I_D	18	A
Single Pulse Avalanche Energy ¹	E_{AS}	580	mJ
Power Dissipation	P_D	2	W
Linear Derating Factor		1	W/ $^{\circ}\text{C}$
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	$^{\circ}\text{C}$
Thermal Resistance Rating			
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$

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

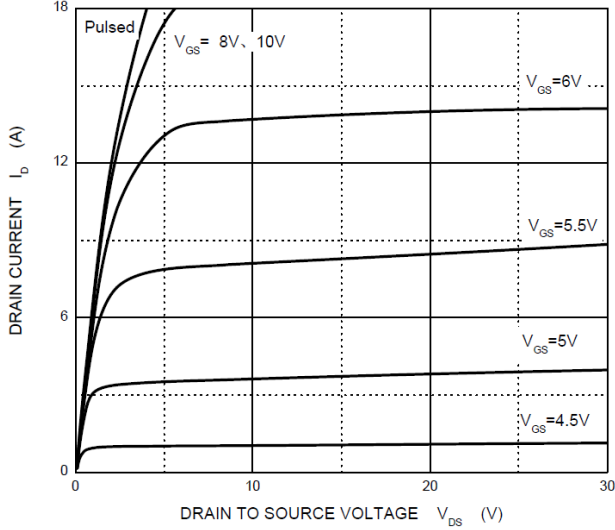
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Drain-Source Breakdown Voltage	BV_{DSS}	200	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$
Gate Threshold Voltage	$V_{GS(th)}$	2	-	4	V	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$
Gate-Body Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$
Drain-Source Leakage Current	I_{DSS}	-	-	25	μA	$V_{DS}=200\text{V}, V_{GS}=0$
Drain-Source On-Resistance ²	$R_{DS(ON)}$	-	-	180	m Ω	$V_{GS}=10\text{V}, I_D=11\text{A}$
Forward Transconductance ²	g_{FS}	6.7	-	-	S	$V_{GS}=50\text{V}, I_D=11\text{A}$
Drain-Source Diode Forward Voltage ²	V_{SD}	-	-	2	V	$V_{GS}=0, I_S=18\text{A}$
Input Capacitance	C_{iss}	-	1300	-	pF	$V_{DS}=25\text{V}$ $V_{GS}=0$ $f=1\text{MHz}$
Output Capacitance	C_{oss}	-	430	-		
Reverse Transfer Capacitance	C_{rss}	-	130	-		
Turn-On Delay Time ²	$T_{d(on)}$	-	14	-	nS	$V_{DD}=100\text{V}$ $R_D=5.4\Omega$ $R_G=9.1\Omega$ $I_D=18\text{A}$
Rise Time	T_r	-	51	-		
Turn-Off Delay Time ²	$T_{d(off)}$	-	45	-		
Fall Time ²	T_f	-	36	-		

Notes:

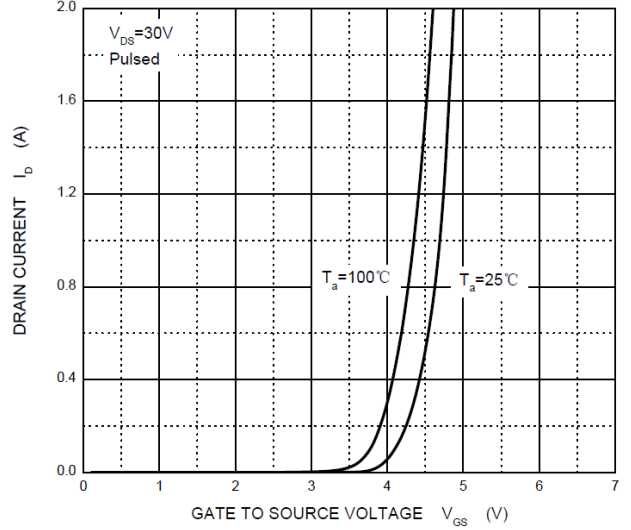
- E_{AS} condition: $L=2.7\text{mH}, I_{AS}=18\text{A}, V_{DD}=50\text{V}, R_G=25\Omega$, Starting $T_J=25^\circ\text{C}$.
- Pulse Test : Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

CHARACTERISTICS CURVE

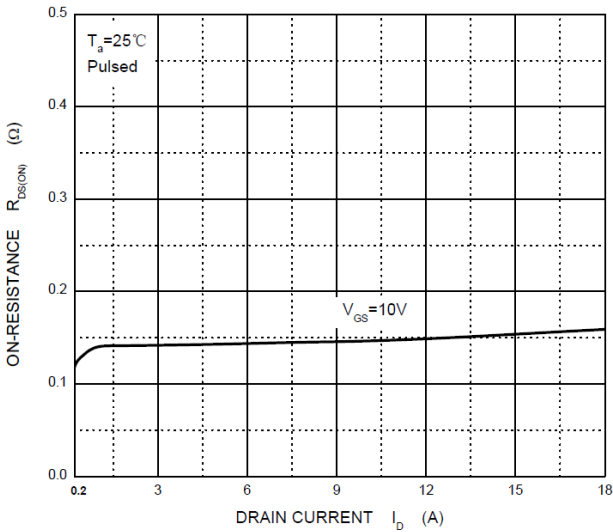
Output Characteristics



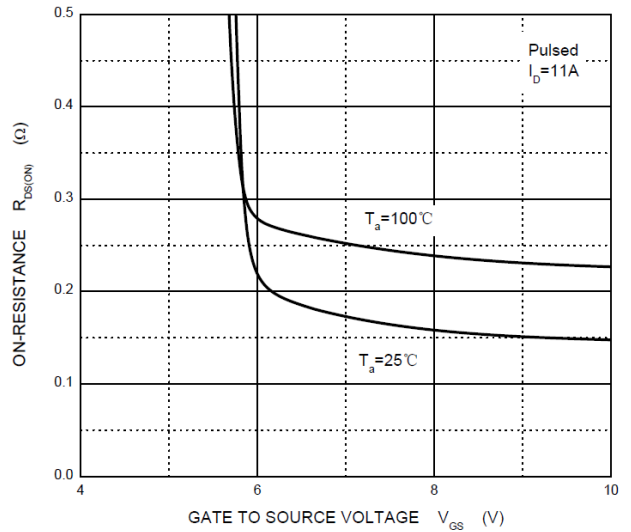
Transfer Characteristics



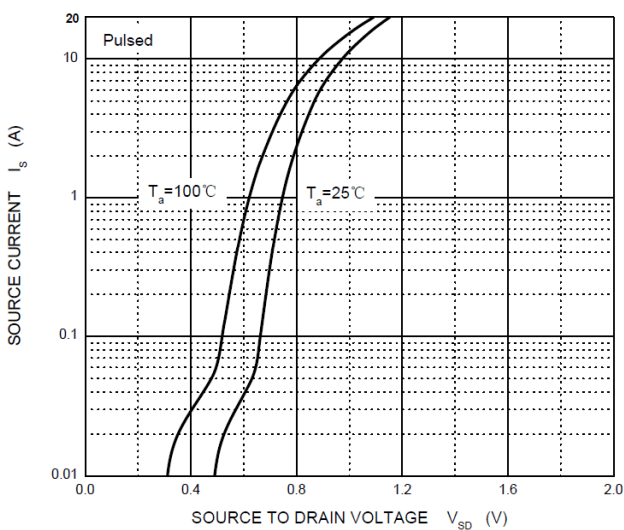
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

