

Features

- Excellent Stability and Uniformity
- Lower $R_{DS(ON)}$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1

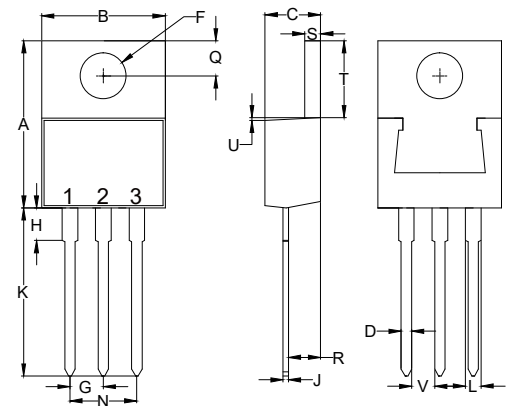
Maximum Ratings

- Operating Junction Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Storage Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Thermal Resistance: 62°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	800	V
Gate -Source Voltage	V_{GS}	± 30	V
Drain Current-Continuous	I_D	4.0	A
Drain Current-Pulse ^(Note1)	I_{DM}	12	A
Power Dissipation	P_D	63	W
Single Pulsed Avalanche Energy ^(Note2)	E_{AS}	162	mJ
Repetitive Avalanche Energy ^(Note1)	E_{AR}	0.2	mJ

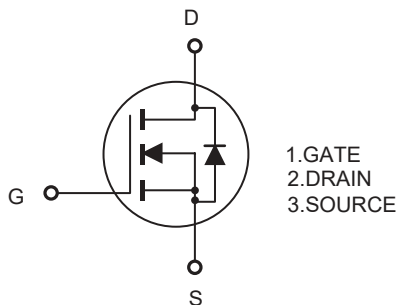
**N-Channel
Enhancement Mode
Field Effect Transistor**

TO-220



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.420	9.65	10.67	
C	0.140	0.190	3.56	4.82	
D	0.020	0.045	0.51	1.14	
F	0.139	0.161	3.53	4.09	Φ
G	0.090	0.110	2.29	2.79	
H	-----	0.250	-----	6.35	
J	0.012	0.025	0.30	0.64	
K	0.500	0.580	12.70	14.73	
L	0.045	0.060	1.14	1.52	
N	0.190	0.210	4.83	5.33	
Q	0.100	0.135	2.54	3.43	
R	0.080	0.115	2.04	2.92	
S	0.045	0.055	1.14	1.39	
T	0.230	0.270	5.84	6.86	
U	-----	0.050	-----	1.27	
V	0.045	-----	1.15	-----	

Internal Structure



Electrical Characteristics @ 25°C (Unless Otherwise Noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	800			V
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=800V, V_{GS}=0V, T_J=25^\circ C$			1	μA
		$V_{DS}=800V, V_{GS}=0V, T_J=150^\circ C$			100	
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.5		4.5	V
Drain-Source On-Resistance ^(Note3)	$R_{DS(on)}$	$V_{GS}=10V, I_D=2A$		1	1.2	Ω
Forward Transconductance ^(Note 3)	g_{FS}	$V_{DS}=10V, I_D=2A$		5		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		598		μF
Output Capacitance	C_{oss}			30		
Reverse Transfer Capacitance	C_{rss}			4		
Total Gate Charge	Q_g	$V_{DD}=640V, V_{GS}=10V, I_D=4A$		13		nC
Gate-Source Charge	Q_{gs}			4.5		
Gate-Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=400V, I_D=4A, R_G=25\Omega$		39		ns
Turn-On Rise Time	t_r			25		
Turn-Off Delay Time	$t_{d(off)}$			100		
Turn-Off Fall Time	t_f			18		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S	$T_C=25^\circ C$			4	A
Pulsed Diode Forward Current	I_{SM}				12	
Body Diode Voltage	V_{SD}	$T_J=25^\circ C, I_{SD}=4A, V_{GS}=0V$		0.9	1.2	V
Reverse Recovery Time	t_{rr}	$V_R=400V, I_F=I_S, di_F/dt=100A/\mu s$		250		ns
Reverse Recovery Charge	Q_{rr}				2.1	μC
Peak Reverse Recovery Current	I_{rrm}				16	A

Notes:

1. Pulse Width Limited by Maximum Junction Temperature.
2. $L=20mH, I_L=4A, V_{DD}=50V, V_{GS}=10V, R_G=25\Omega, Starting T_J=25^\circ C$
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Curve Characteristics

Fig. 1 - Output Characteristics

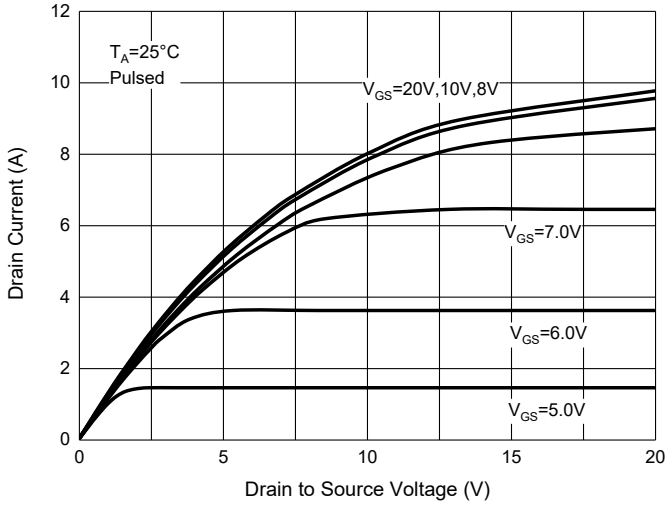


Fig. 2 - Transfer Characteristics

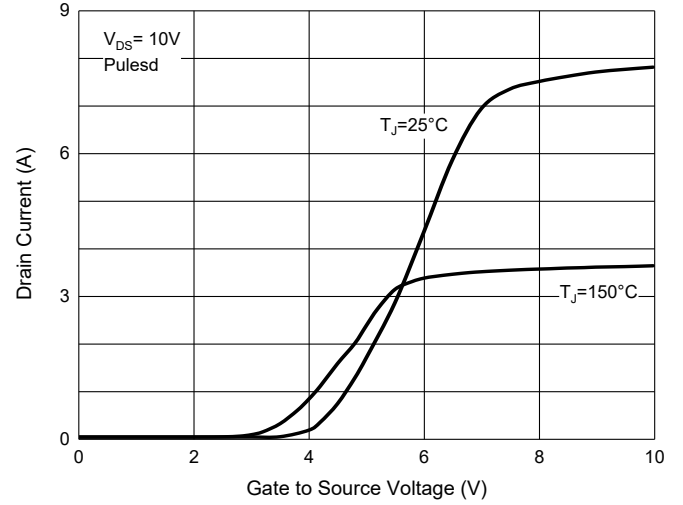


Fig. 3 - $R_{DS(ON)} - I_D$

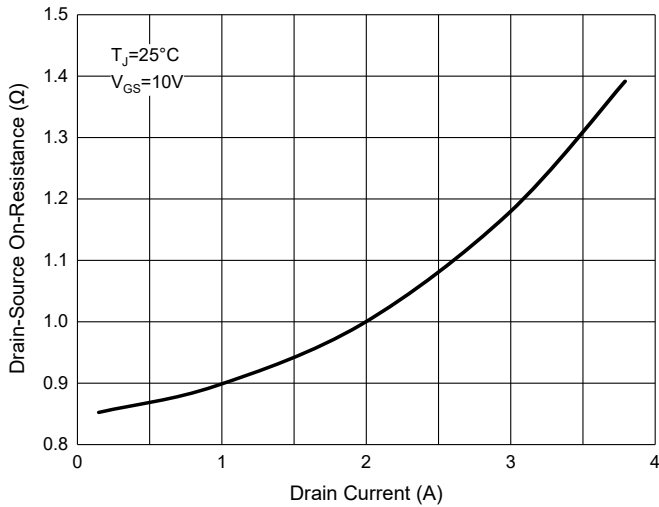


Fig. 4 - $I_S - V_{SD}$

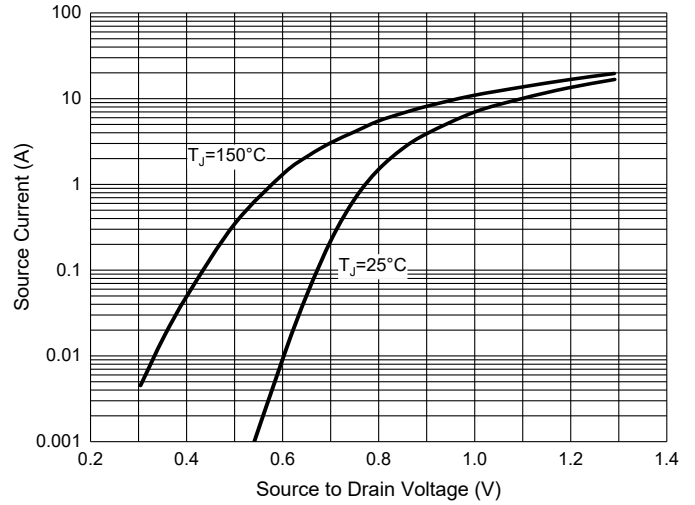


Fig. 5 - $R_{DS(ON)} - \text{Temperature}$

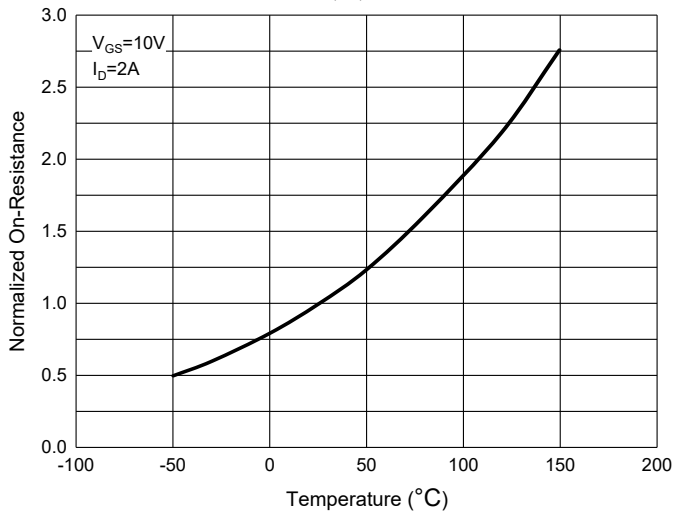
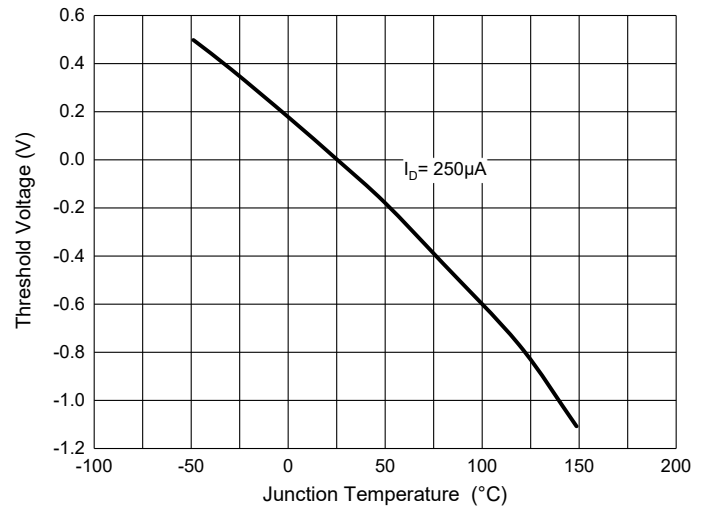


Fig. 6 - Threshold Voltage — Temperature



Ordering Information

Device	Packing
Part Number-BP	Bulk:50pcs/Tube, 1Kpcs/Box,5Kpcs/Carton

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-BP-HF

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