

Features

- Low $R_{DS(on)}$ & FOM
- Extremely Low Switching Loss
- Excellent Stability and Uniformity
- Fast Switching and Soft Recovery
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

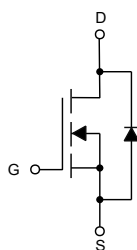
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 0.48°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current ⁽²⁾	I_D	200	A
Pulsed Drain Current ⁽³⁾	I_{DM}	600	A
Total Power Dissipation	P_D	260	W
Single Pulsed Avalanche Energy ⁽⁴⁾	E_{AS}	162	mJ

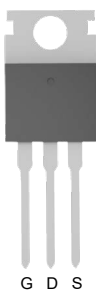
Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The maximum current rating is package limited.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. $V_{DD}=50V$, $R_G=25\Omega$, $L=1mH$, $I_{AS}=18A$, starting $T_J=25^\circ C$.

Internal Structure

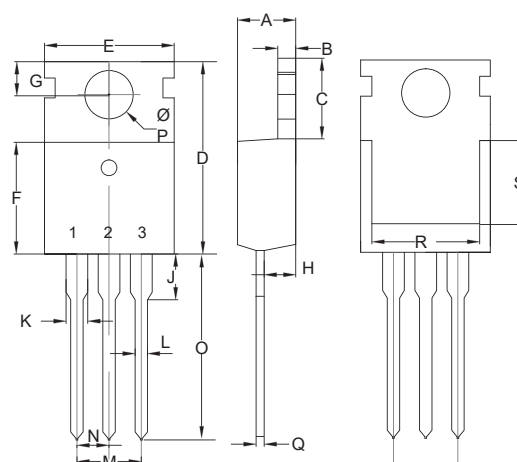


1. Gate
2. Drain
3. Source



N-CHANNEL MOSFET

TO-220AB(H)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.172	0.188	4.37	4.77	
B	0.049	0.057	1.25	1.45	
C	0.246	0.270	6.25	6.85	
D	0.594	0.634	15.10	16.10	
E	0.382	0.406	9.70	10.30	
F	0.346	0.370	8.80	9.40	
G	0.102	0.118	2.60	3.00	
H	0.087	0.102	2.20	2.60	
J	----	0.134	----	3.40	
K	0.046	0.058	1.17	1.47	
L	0.028	0.037	0.70	0.95	
M	0.200		5.08		TYP.
N	0.100		2.54		TYP.
O	0.502	0.543	12.75	13.80	
P	0.134	0.150	3.40	3.80	Φ
Q	0.016	0.026	0.40	0.65	
R	0.276	----	7.00	----	
S	0.217	----	5.50	----	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	200			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	2.5	4	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A		2.8	3.2	mΩ
Gate Resistance	R _G	f=1MHz, Open drain		2.37		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				200	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =20A			1.2	V
Reverse Recovery Time	t _{rr}	I _F =25A, dI _F /dt=100A/μs		58		ns
Reverse Recovery Charge	Q _{rr}			63		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		4165		pF
Output Capacitance	C _{oss}			900		
Reverse Transfer Capacitance	C _{rss}			59		
Total Gate Charge	Q _g	V _{DS} =50V, V _{GS} =10V, I _D =50A		65		nC
Gate-Source Charge	Q _{gs}			9.8		
Gate-Drain Charge	Q _{gd}			11.9		
Turn-On Delay Time	t _{d(on)}	V _{DS} =30V, V _{GS} =10V, R _G =2Ω, I _{DS} =25A		22.5		ns
Turn-On Rise Time	t _r			6.7		
Turn-Off Delay Time	t _{d(off)}			80.3		
Turn-Off Fall Time	t _f			26.9		

Fig. 1 - Typical Output Characteristics

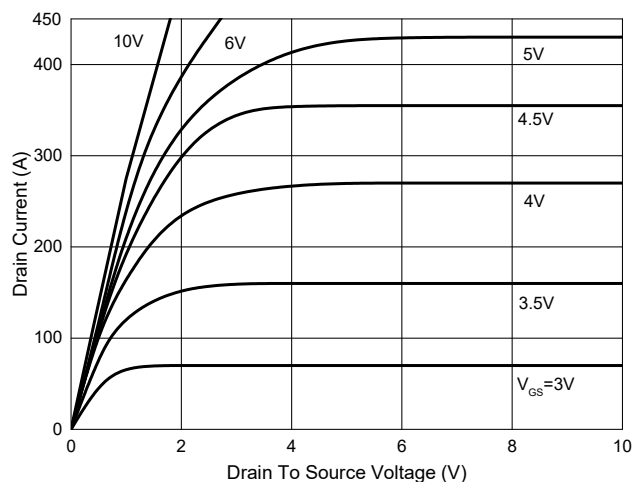


Fig. 2 - Transfer Characteristics

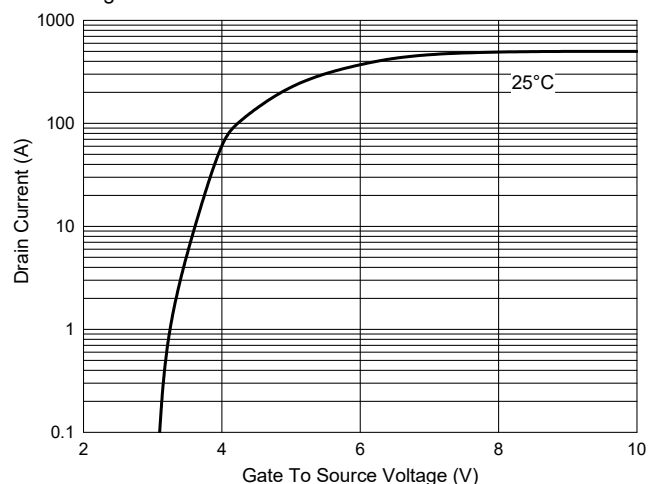


Fig. 3 - $R_{DS(ON)} - I_D$

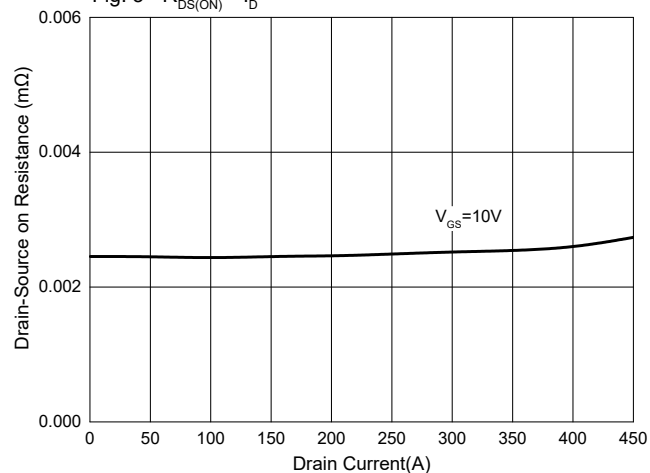


Fig. 4 - Drain-Source on Resistance

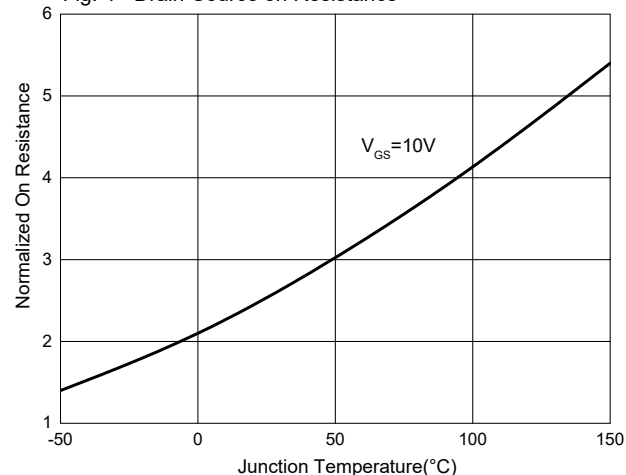


Fig. 5 - Capacitance Characteristics

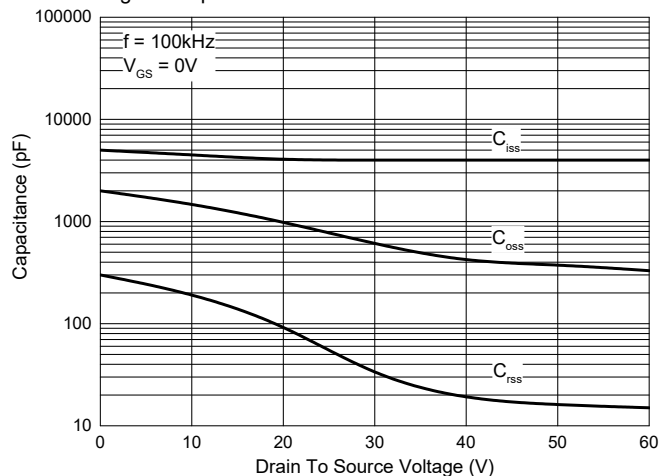
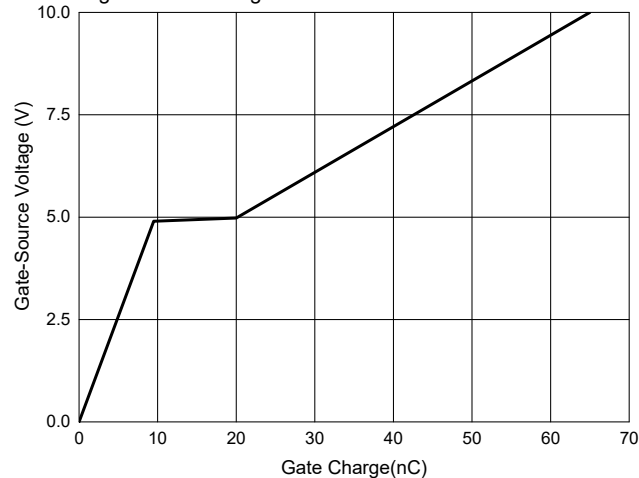
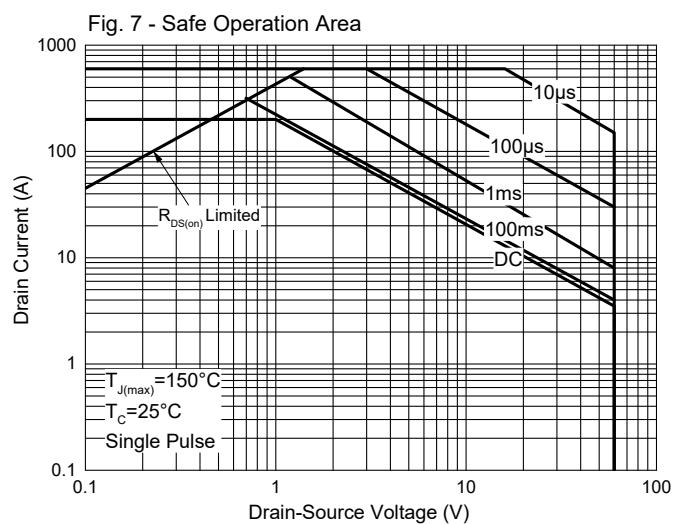


Fig. 6 - Gate Charge





Ordering Information

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

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