

Features

- Split Gate Trench Mosfet Technology
- Excellent Stability and Uniformity
- 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

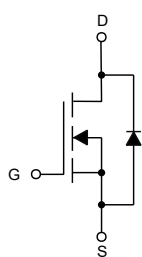
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Ambient (Note 2)
- Thermal Resistance: 3°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	150	V
Gate -Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	15	A
		9.5	
Drain Current-Pulse (Note 3)	I_{DM}	60	A
Power Dissipation (Note 4)	P_D	41	W
Single Pulsed Avalanche Energy (Note 5)	E_{AS}	6.6	mJ

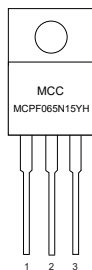
Note:

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 value of R_{θJA} is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-Case thermal resistance.
5. T_J=25°C, V_{DS}=50V, R_G=25Ω, V_{GS}=10V, L=0.5mH.

Internal Structure and Marking Code

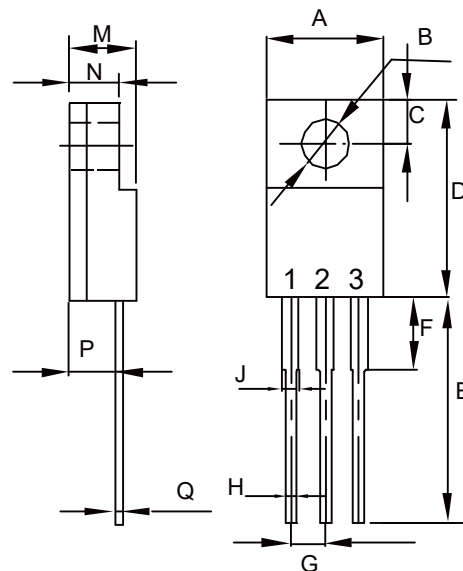


1.GATE
2.DRAIN
3.SOURCE



N-CHANNEL MOSFET

TO-220F



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.381	0.406	9.70	10.30	
B	0.118	0.138	3.00	3.50	Φ
C	0.124	0.139	3.15	3.55	
D	0.610	0.634	15.50	16.10	
E	0.496	0.535	12.60	13.60	
F	0.134	0.150	3.40	3.80	
G	0.092	0.108	2.34	2.74	
H	0.027	0.035	0.70	0.90	
J	0.044	0.056	1.12	1.42	
M	0.173	0.193	4.40	4.90	
N	0.098	0.114	2.50	2.90	
P	0.085	0.100	2.15	2.55	
Q	0.016	0.024	0.40	0.60	

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 =250μA	150			V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V,V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =150V, V _{GS} =0V			1	uA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	3	4	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =15A		50	65	mΩ
		V _{GS} =6V, I _D =10A		55	72	
Gate resistance	R _G	V _{GS} =0V,f=1MHz		1.5		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				15	A
Body Diode Voltage	V _{SD}	I _{SD} =15A, V _{GS} =0V			1.3	V
Reverse Recovery Charge	Q _{rr}	I _F =7.5A,di/dt=100A/μs		179		nC
Reverse Recovery Time	t _{rr}			53		ns
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =75V,V _{GS} =0V,f=1MHz		785		pF
Output Capacitance	C _{oss}			55		
Reverse Transfer Capacitance	C _{rss}			4		
Total Gate Charge	Q _g	V _{DS} =75V,V _{GS} =10V,I _D =7.5A		18		nC
Gate-Source Charge	Q _{gs}			5		
Gate-Drain Charge	Q _{gd}			4.5		
Turn-On Delay Time	t _{d(on)}	V _{DD} =75V,I _D =7.5A, V _{GS} =10V,R _G =2.2Ω		12		ns
Turn-On Rise Time	t _r			5		
Turn-Off Delay Time	t _{d(off)}			39		
Turn-Off Fall Time	t _f			6		

Curve Characteristics

Fig.1 - Typical Output Characteristics

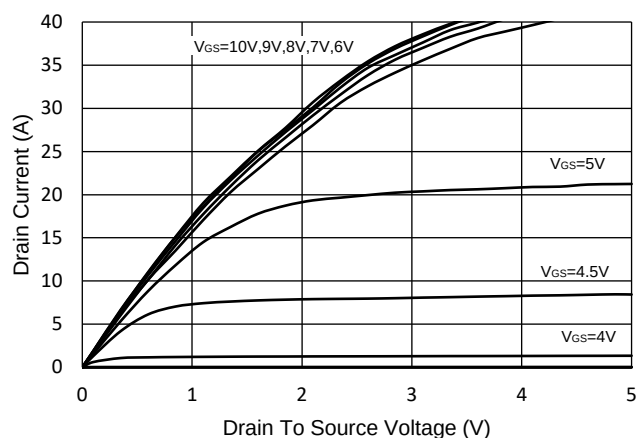


Fig.2 - Transfer Characteristic

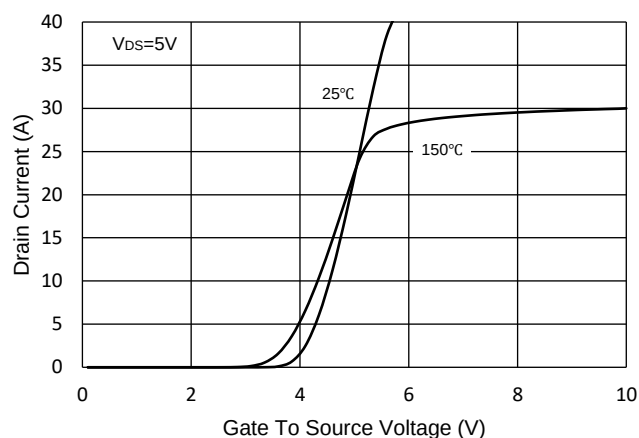


Fig.3 - $R_{DS(ON)}$ - V_{GS}

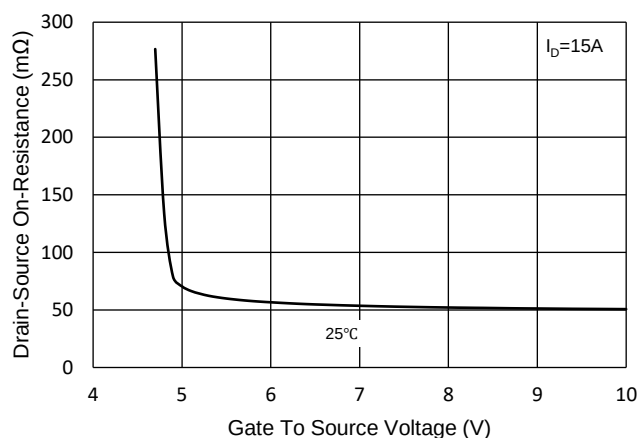


Fig.4 - $R_{DS(ON)}$ - I_D

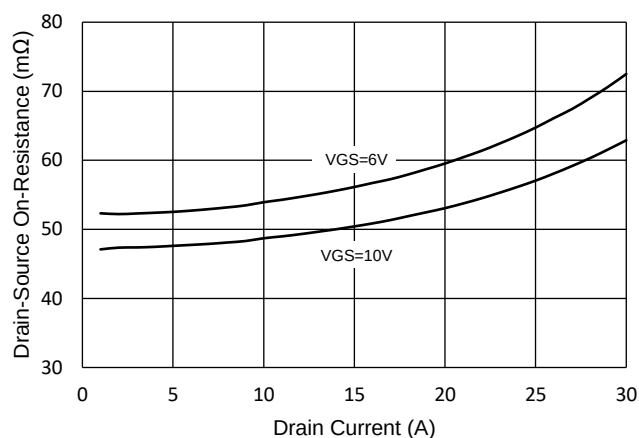


Fig.5 - Capacitance Characteristics

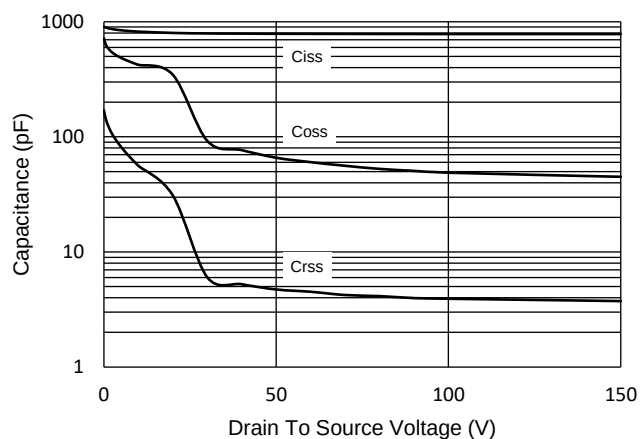
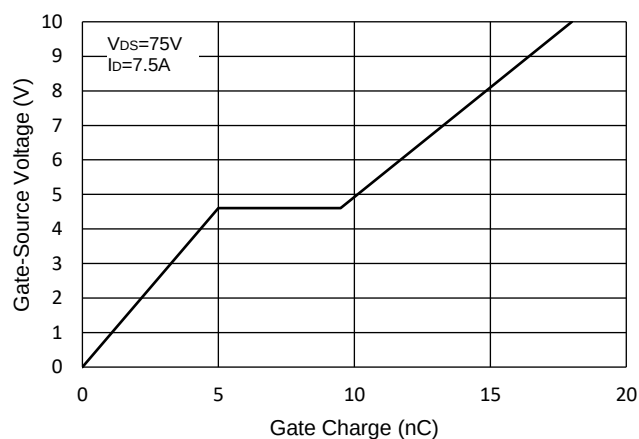


Fig.6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

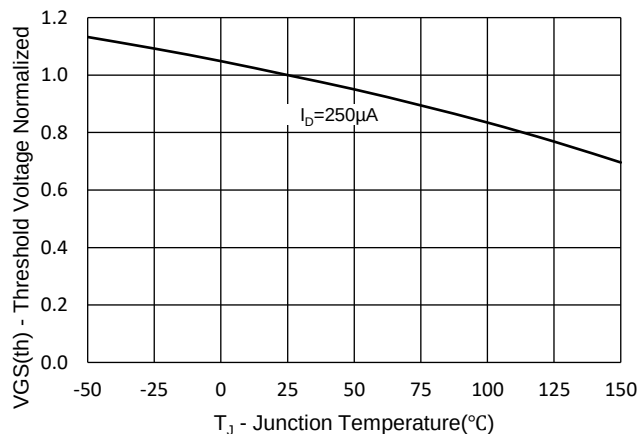


Fig.8 - Normalized On Resistance Characteristics

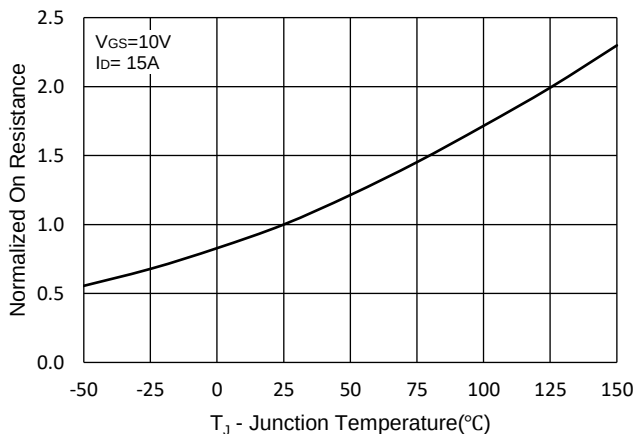


Fig.9 - $I_S - V_{SD}$

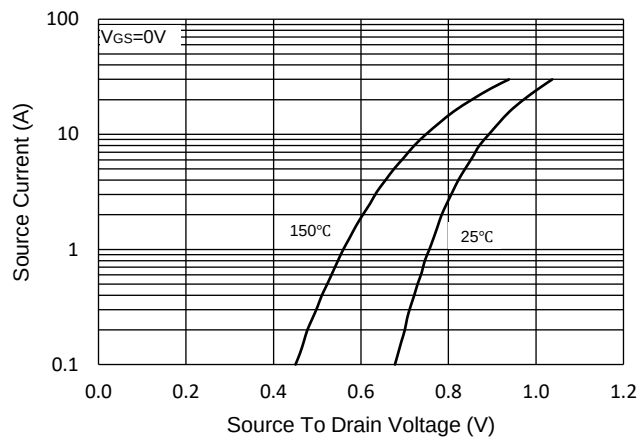


Fig.10 - Drain Current

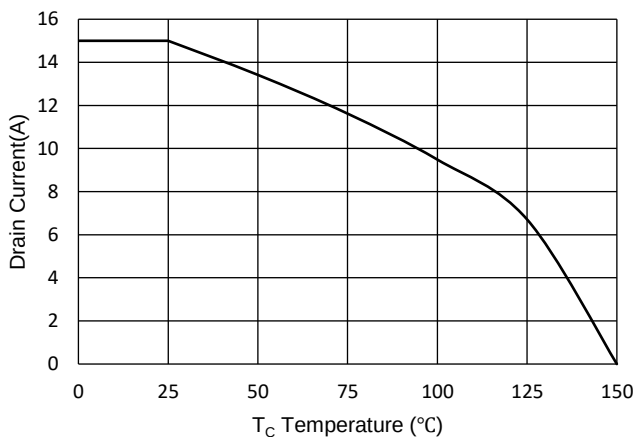
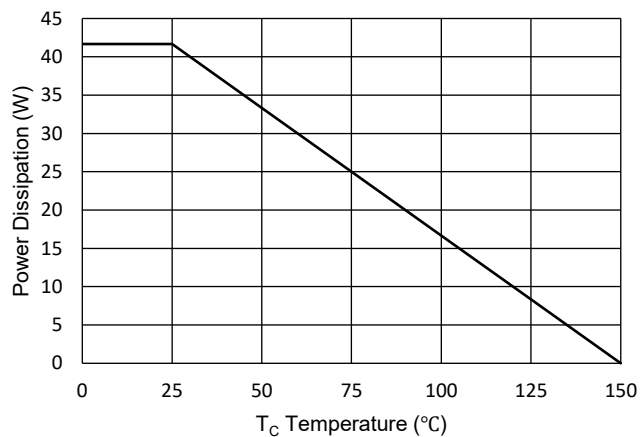
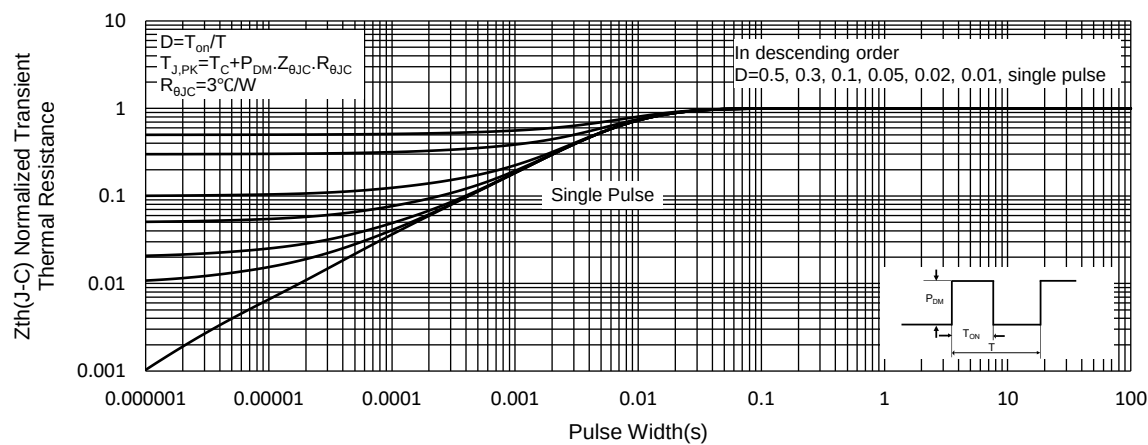


Fig.11 - PD Dissipation





Ordering Information

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

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