

/ Descriptions

TO-220F N

N-CHANNEL MOSFET in a TO-220F Plastic Package.

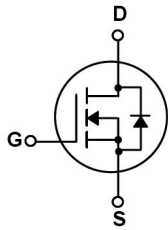
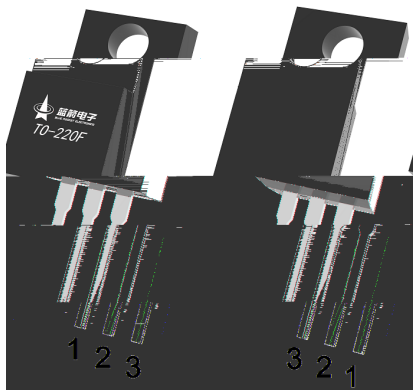
/ Features $V_{DS}=100V$ $I_D=68A$ $R_{DS(ON)}@10V \leq 8mR$ (Typ. 6.2mR) $R_{DS(ON)}@4.5V \leq 12mR$ (Typ. 8.2mR)

HF Product.

/ Applications

PFC

These devices are well suited for high efficient switched mode power supplies, Active power factor correction, electronic lamp ballast based on half bridge topology.

/ Equivalent Circuit**/ Pinning**

PIN1 G

PIN 2 D

PIN 3 S

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

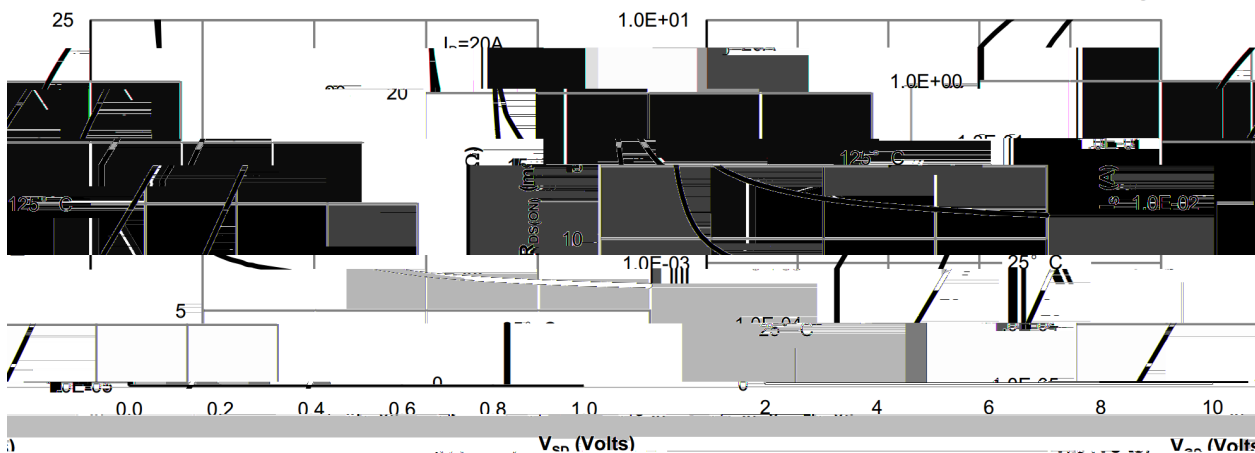
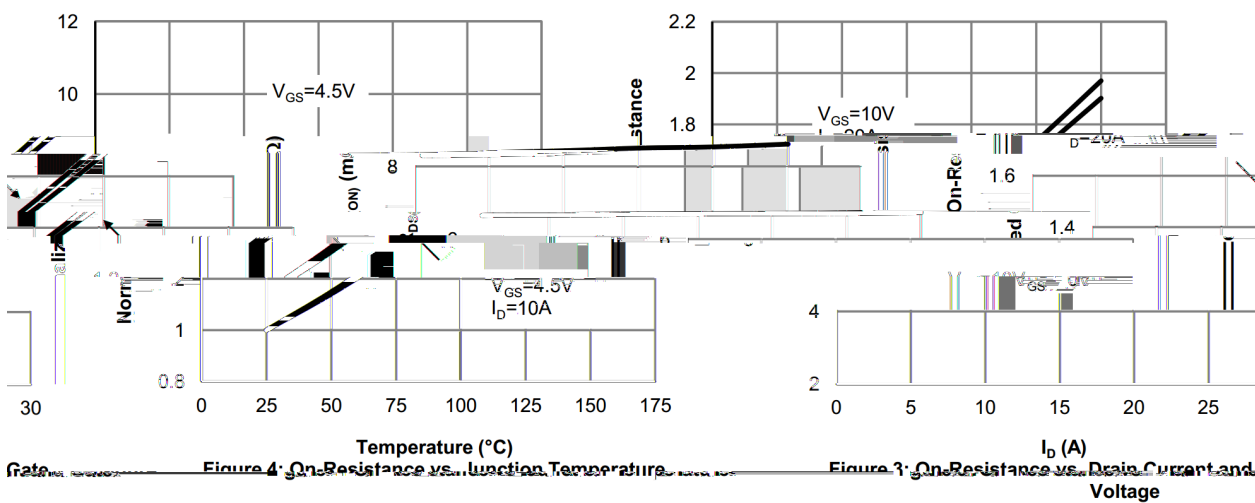
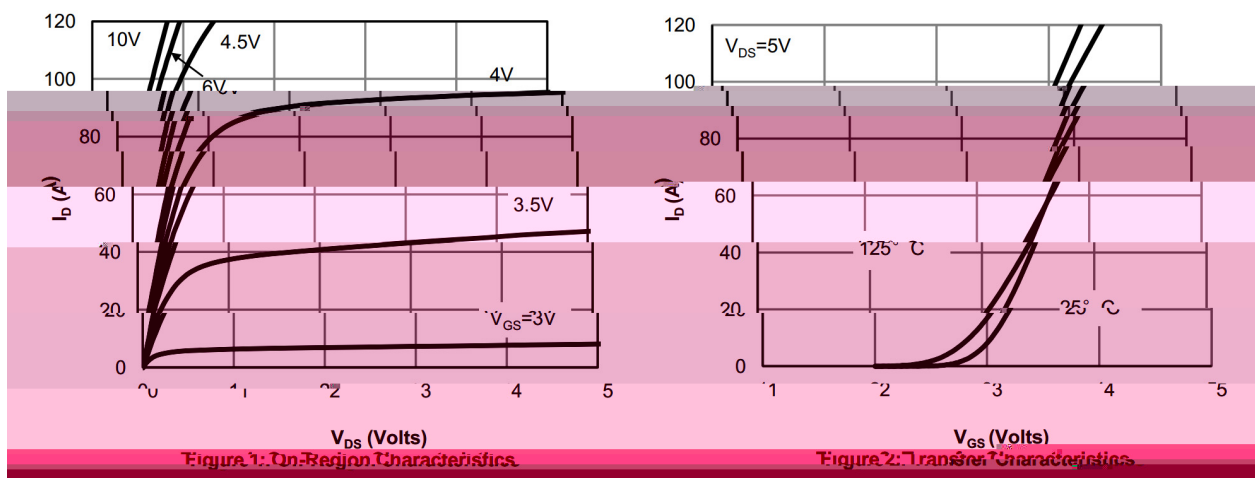
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Drain Current		$I_D(T_C=25^{\circ}\text{C})$	49	A
Pulsed Drain Current		I_{DM}	200	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy L=0.5mH		E_{AS}	78.8	mJ
Avalanche Current		I_{AS}	15	A
Total Power Dissipation		$P_D(T_C=25^{\circ}\text{C})$	40	W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	$t \leq 10\text{s}$	$R_{\theta JA}$	10	$^{\circ}\text{C/W}$
	Steady-State		38	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	3.1	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0\text{V}$ $I_D=250\mu\text{A}$	100	109		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100\text{V}$ $V_{GS}=0\text{V}$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$ $V_{DS}=0\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$	1	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$ $I_D=20\text{A}$		6.2	8	m Ω
	$R_{DS(on)}$	$V_{GS}=4.5\text{V}$ $I_D=10\text{A}$		8.2	12	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=1\text{A}$			1.2	V
Gate resistance	R_g	$V_{GS}=0\text{V}$ $V_{DS}=0\text{V}$, $f=1\text{MHz}$		1.3		Ω
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}$ $V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		2410		pF
Output Capacitance	C_{oss}			900		
Reverse Transfer Capacitance	C_{rss}			100		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10\text{V}$, $V_{DS}=50\text{V}$, $I_D=20\text{A}$		37		nC
Total Gate Charge	$Q_{g(4.5V)}$			17.2		
Gate Source Charge	Q_{gs}			8.5		
Gate Drain Charge	Q_{gd}			5.3		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
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/ Electrical Characteristic Curve



/ Electrical Characteristic Curve

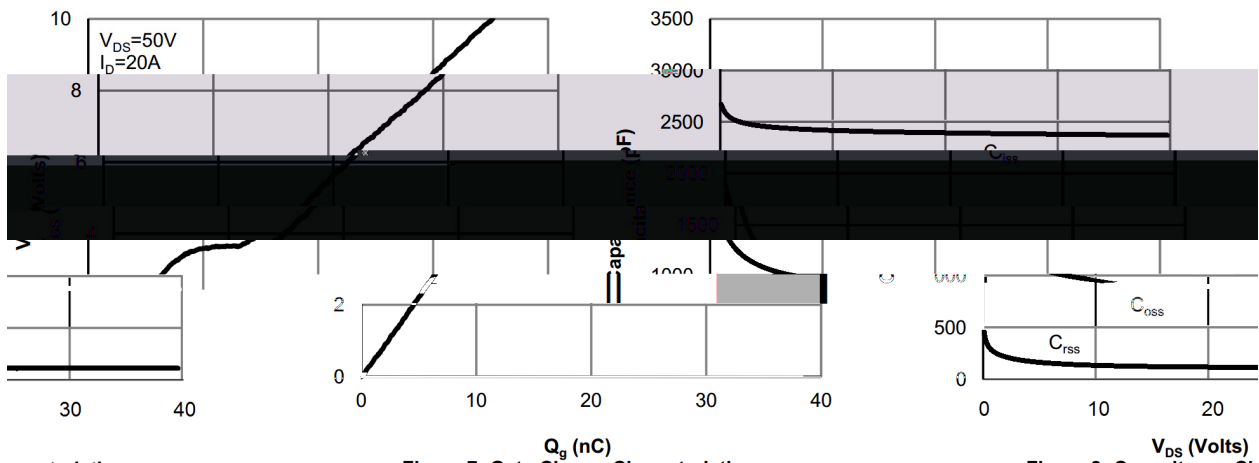


Figure 7: Capacitance Characteristics

Figure 8: Capacitance Characteristics

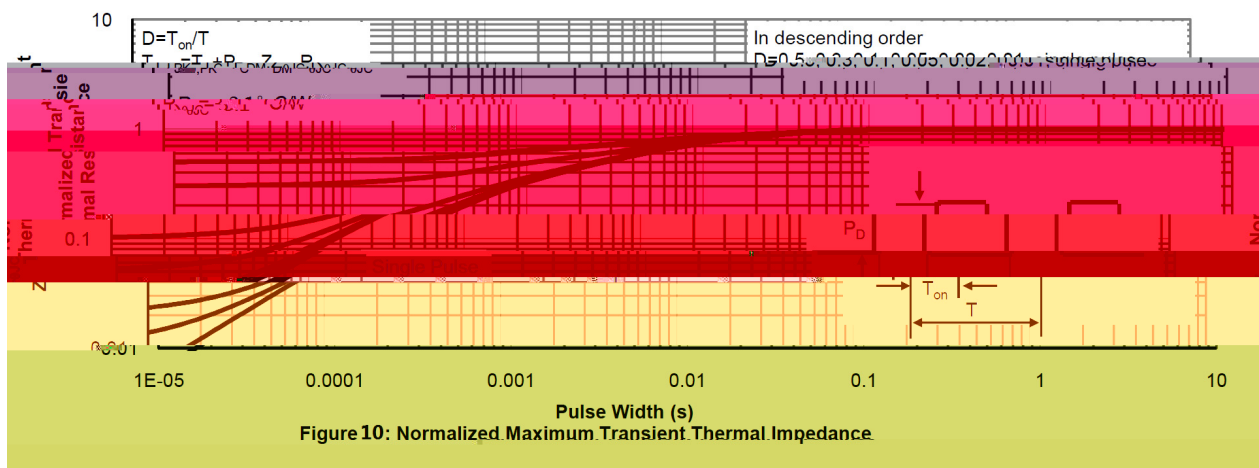
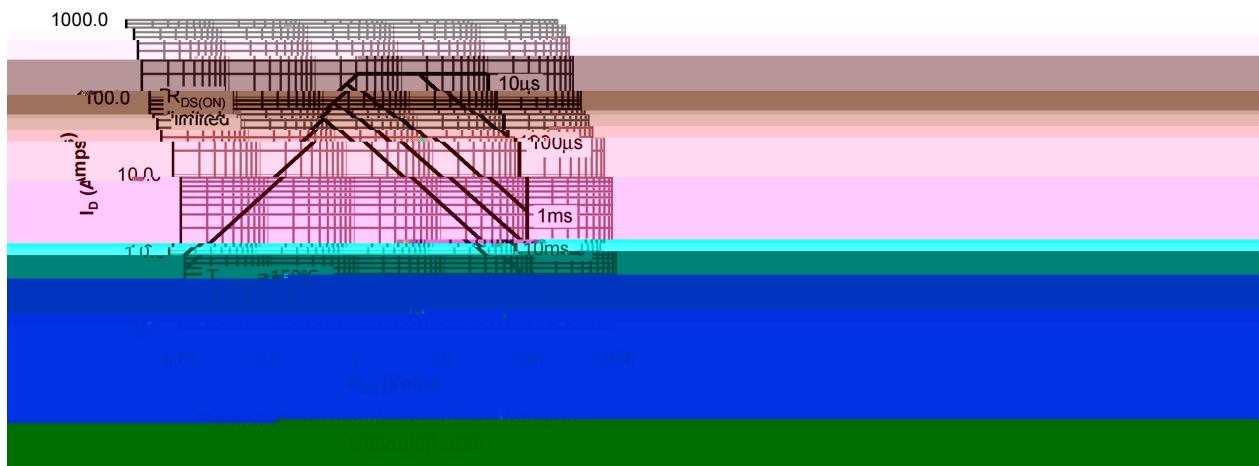
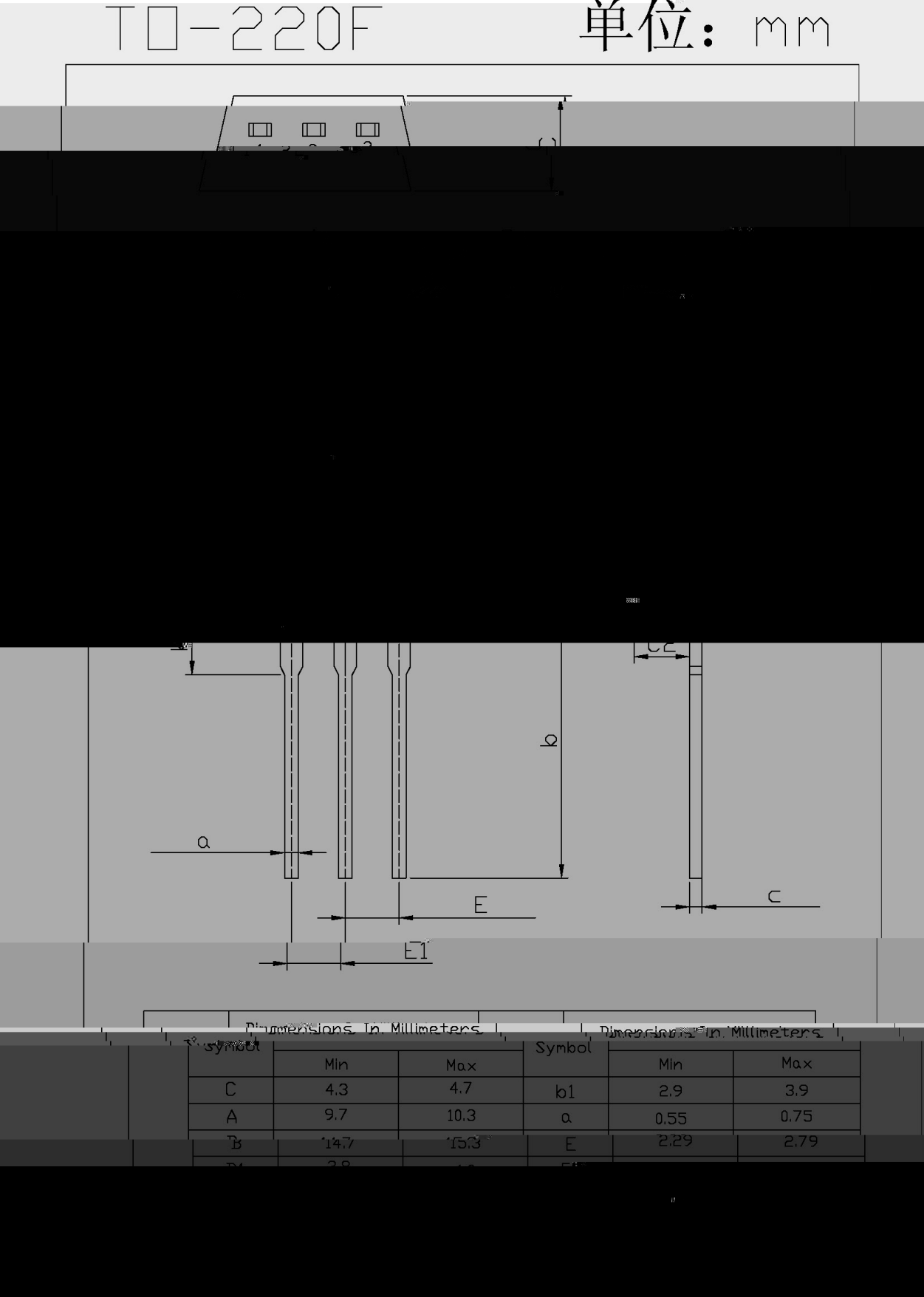


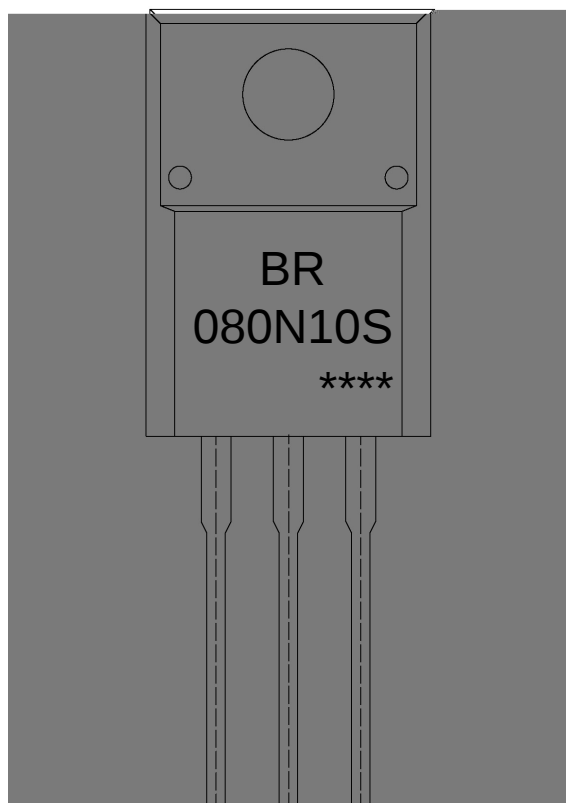
Figure 10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions





/ Marking Instructions



BR

080N10S

Note:

BR: Company Code

080N10S: Product Type Code

****: Lot No. Code, code change with Lot No

() / Temperature Profile for Dip Soldering(Pb-Free)
