Descriptions

These N-channel MOSFET are produced using advanced plane MOSFET Technology, which provides Low on-state resistance,high switching performance and excellent quality.These devices are suitable device for SMPS,high Speed switching and general purpose applications.

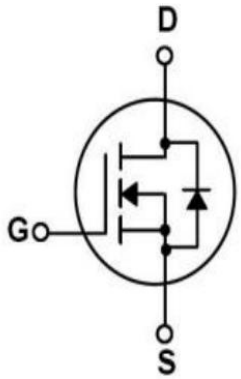
Features

- VDS =650V
- ID = 11A @VGS =10V
- RDS(ON) (Typ)=320mΩ @VGS =10V

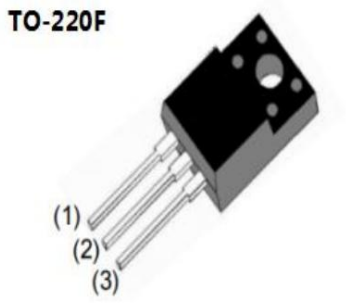
Applications

- Power Supply
- PFC
- High Current, High Speed Switching

Equivalent Circuit



Pinning



PIN1:Gate PIN2:Drain PIN 3:Source

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	650	V
Drain Current	I_D(Tc=25℃)	11	A
Drain Current - Pulsed	I_{DM}	44	A
Gate-Source Voltage	V_{GS}	±30	V
Single Pulsed Avalanche Energy	E_{AS}	277	mJ
Avalanche Current	I_{AS}	8	A
Power Dissipation	P_D(Tc=25℃)	27	W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	℃
Junction-to-Case	$R_{\theta JC}$	4.6	℃/W
Junction-to-Ambient	$R_{\theta JA}$	65	℃/W

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	650	700		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=650V V_{GS}=0V T_J=25℃			1.0	μA
Gate-Body Leakage Current, Forward	I_{GSS}	V_{GS}=±30V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2.5	3.3	4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=5.5A		320	380	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_{SD}=1A T_J=25℃			1.2	V
Gate Resistance	R_g	V_{GS} = 0V f = 1.0MHz		4.1		Ω
Input Capacitance	C_{iss}	V_{DS}=100V V_{GS}=0 V f=1.0MHz		735		pF
Output Capacitance	C_{oss}			35		pF
Reverse Transfer Capacitance	C_{rss}			0.45		pF
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=400V I_D=5.5A R_G=25Ω V_{GS}=10V		16.3		ns
Turn-On Rise Time	t_r			35		ns
Turn-Off Delay Time	$t_{d(off)}$			78		ns
Turn-Off Fall Time	t_f			39.5		ns

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Diode Forward Current	I_S				11	A
Total Gate Charge	Q_g	V_{DS}=480V I_D=5.5A V_{GS}=10V		19.2		nC
Gate-Source Charge	Q_{gs}			3.1		nC
Gate-Drain Charge	Q_{gd}			8.2		nC
Reverse recovery time	T_{rr}	V_R=400 V I_F=5.5A, dI_F/dt=100 A/μs		310		ns
Reverse recovery charge	Q_{rr}			2.8		uC

Electrical Characteristic Curve

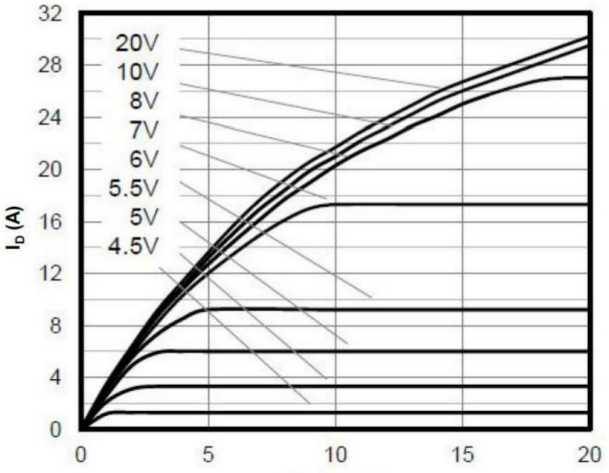


Figure 1: On-Region Characteristics

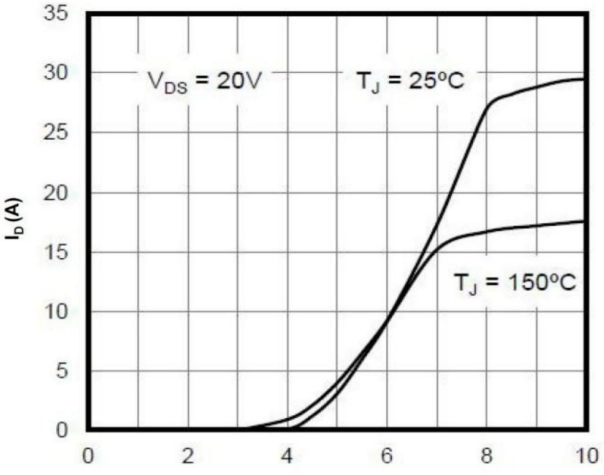


Figure 2: Transfer Characteristics

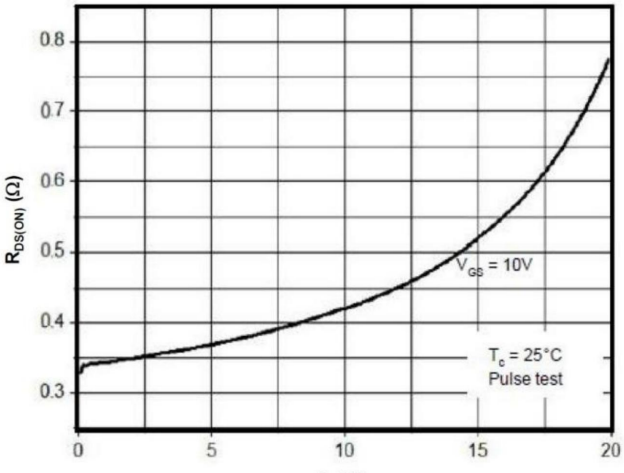


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

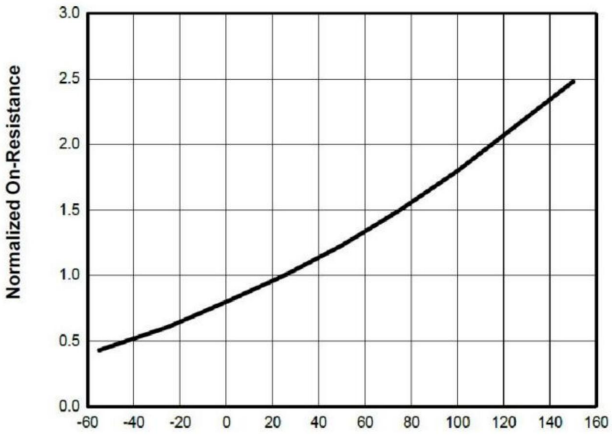


Figure 4: On-Resistance vs. Junction Temperature

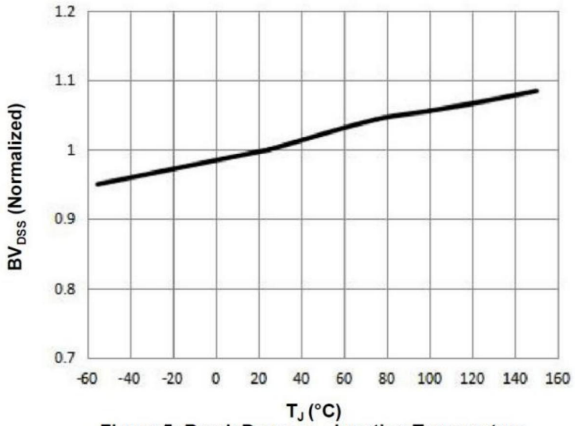


Figure 5: Break Down vs. Junction Temparature

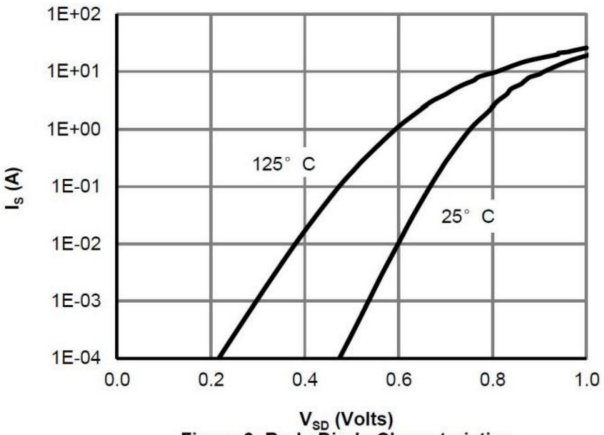


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

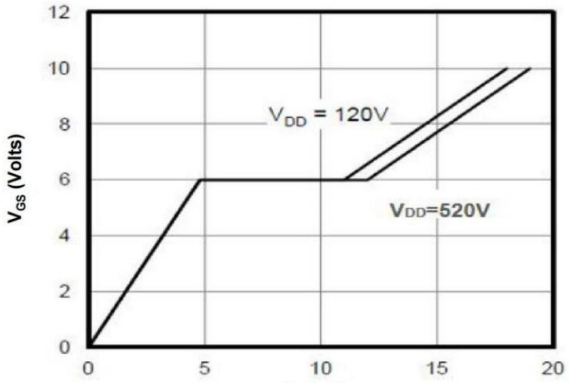


Figure 7: Gate-Charge Characteristics

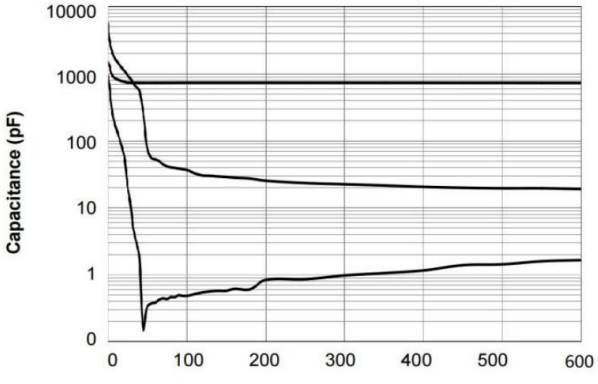


Figure 8: Capacitance Characteristics

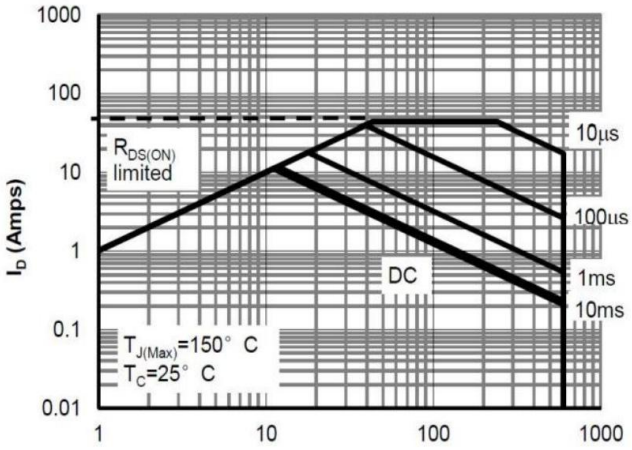


Figure 09: Maximum Forward Biased Safe Operating Area

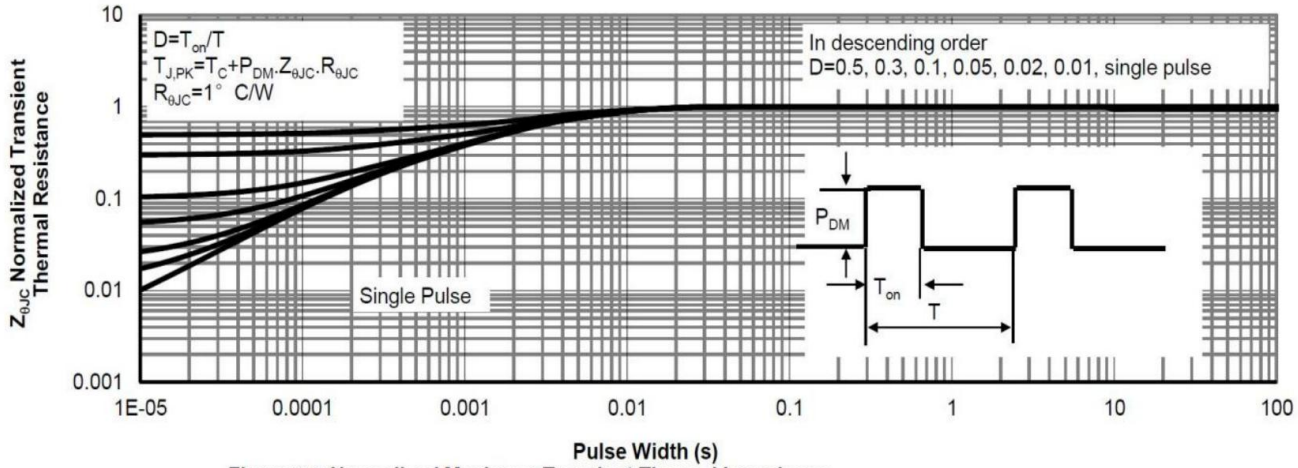
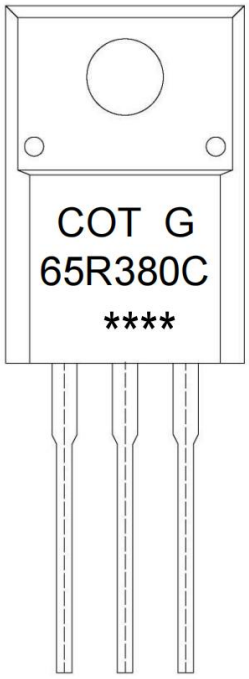


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

COT: Company Logo

G: Halogen Free

65R380C: Product Type.

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

Packaging SPEC.

BULK

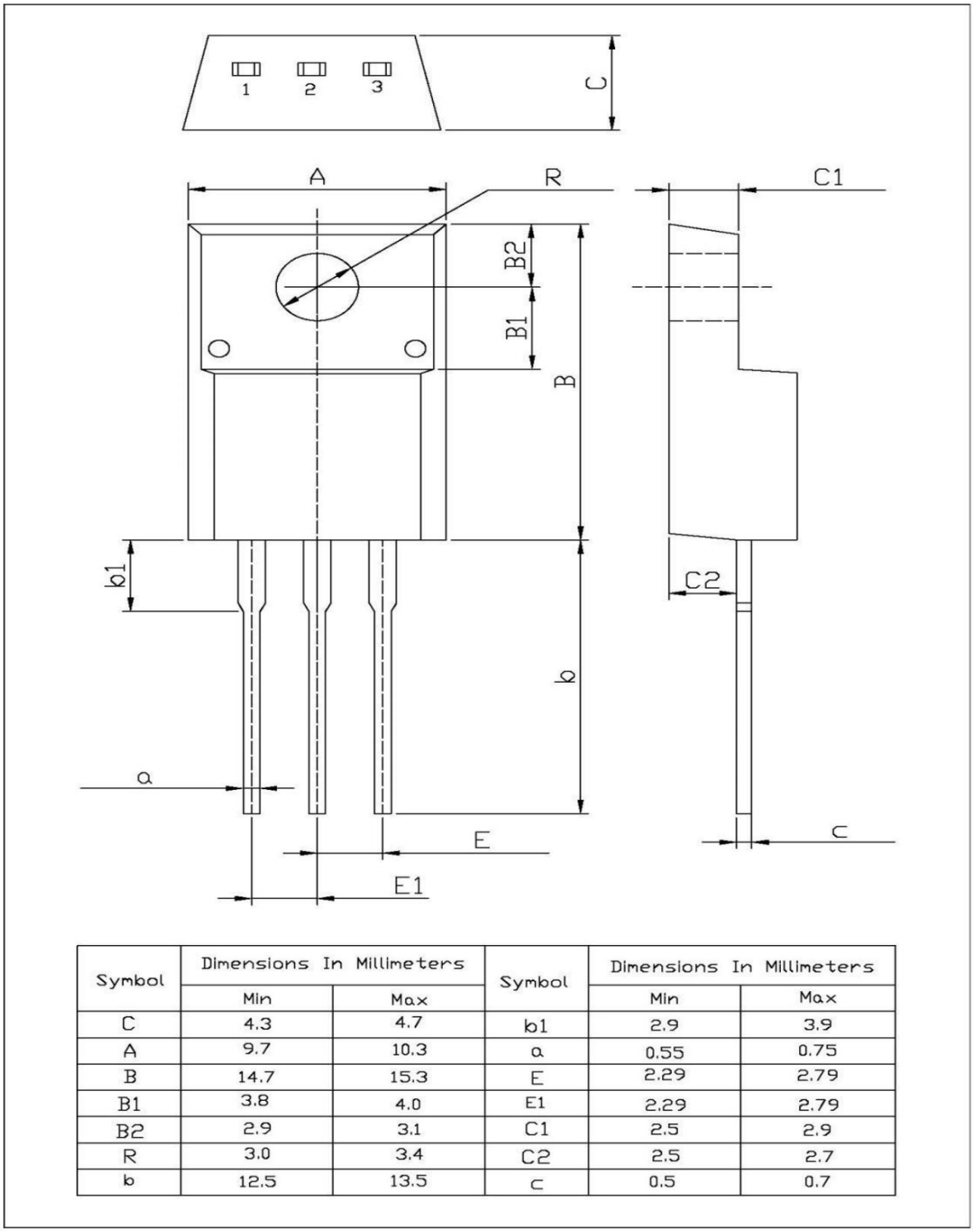
Package Type	Units					Dimension (unit：mm³)		
	Units/Bag	Bags/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Bag	Inner Box	Outer Box
TO-220F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

TUBE

Package Type	Units					Dimension (unit：mm³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-220F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

Package Dimensions

TO-220F 单位：mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
C	4.3	4.7	b1	2.9	3.9
A	9.7	10.3	a	0.55	0.75
B	14.7	15.3	E	2.29	2.79
B1	3.8	4.0	E1	2.29	2.79
B2	2.9	3.1	C1	2.5	2.9
R	3.0	3.4	C2	2.5	2.7
b	12.5	13.5	c	0.5	0.7