

BRCS100N06RA

Rev.C Jul.-2018

/ Descriptions

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

/ Features

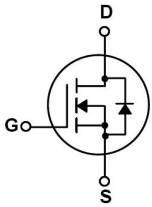
Low gate charge, low crss, fast switching.

/ Applications

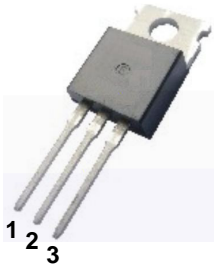
DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

/ Equivalent Circuit



/ Pinning



PIN1 G

PIN 2 D

PIN 3 S

/ h_{FE} Classifications & Marking

See Marking Instructions.

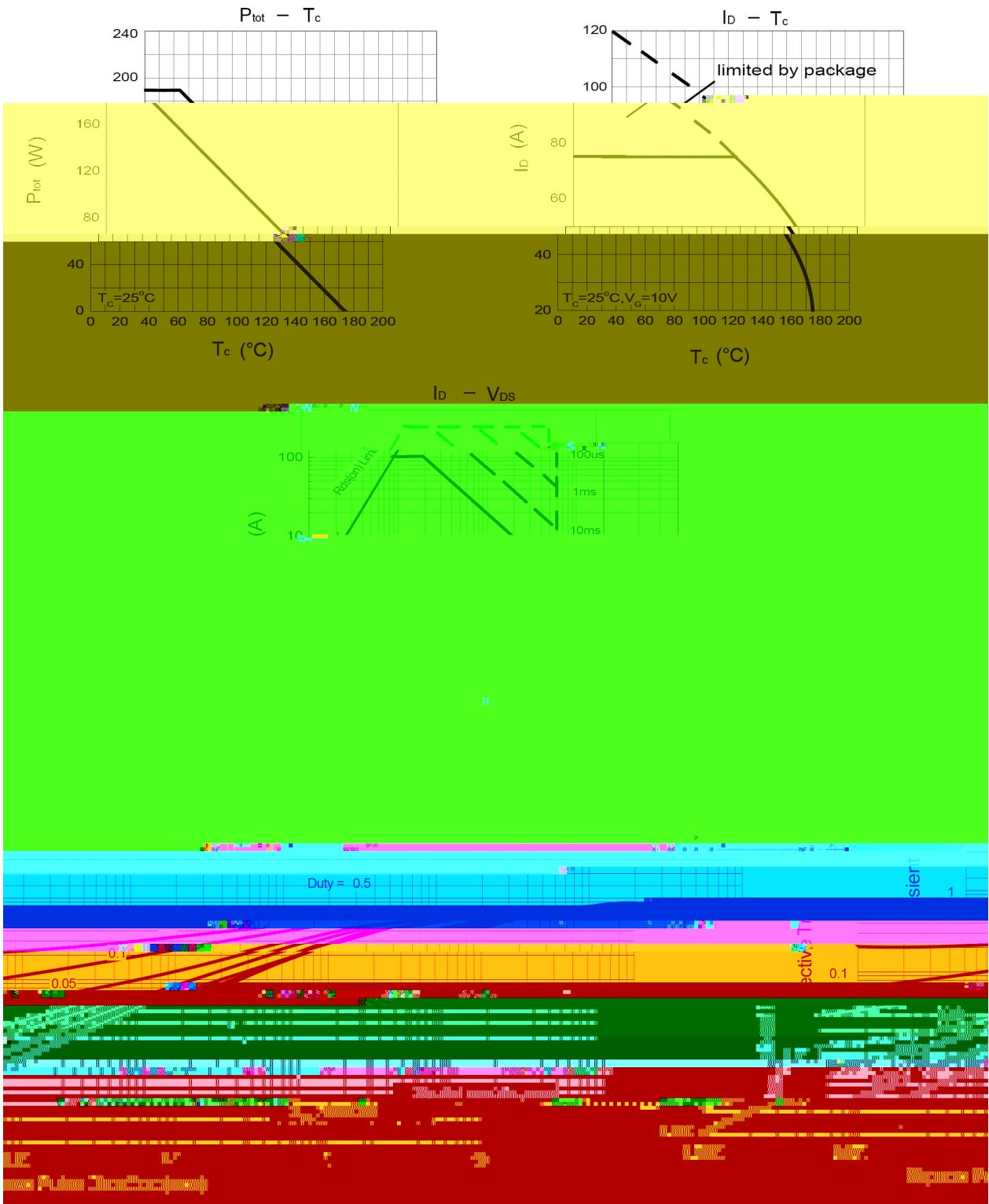
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain Current	$I_D(T_C=25)$	100	A
Peak Drain Current	I_{DM}	380	A
Gate-Source Voltage	V_{GSS}	± 20	V
Single Pulsed Avalanche Energy	E_{AS}	1.29	J
Avalanche Current	I_{AR}	58.6	A
Total Power Dissipation	$P_D(T_C=25)$	100	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$

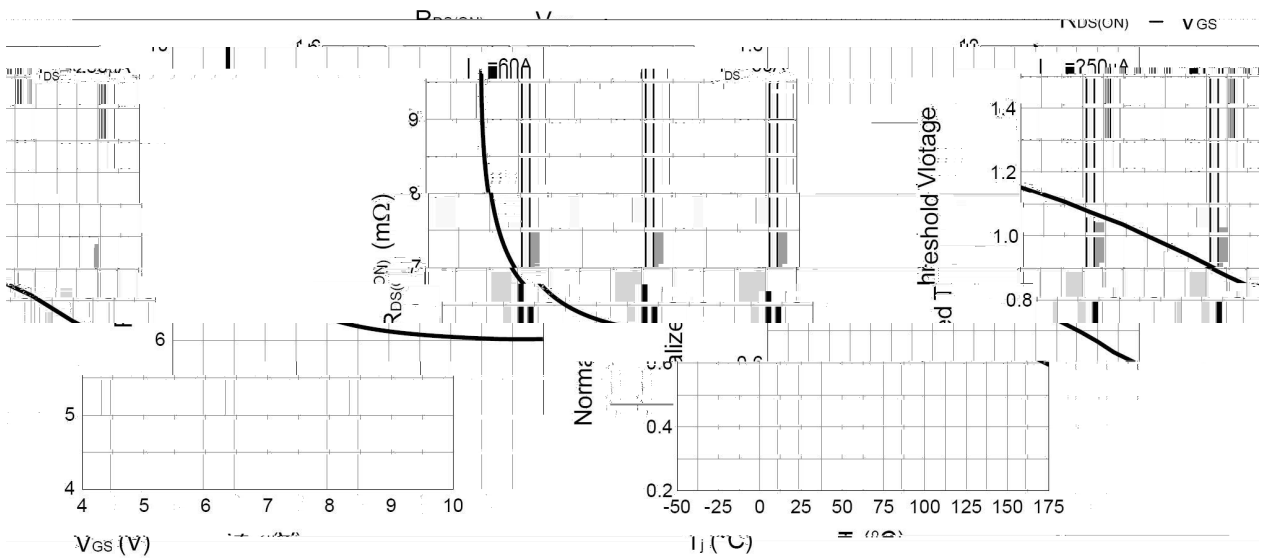
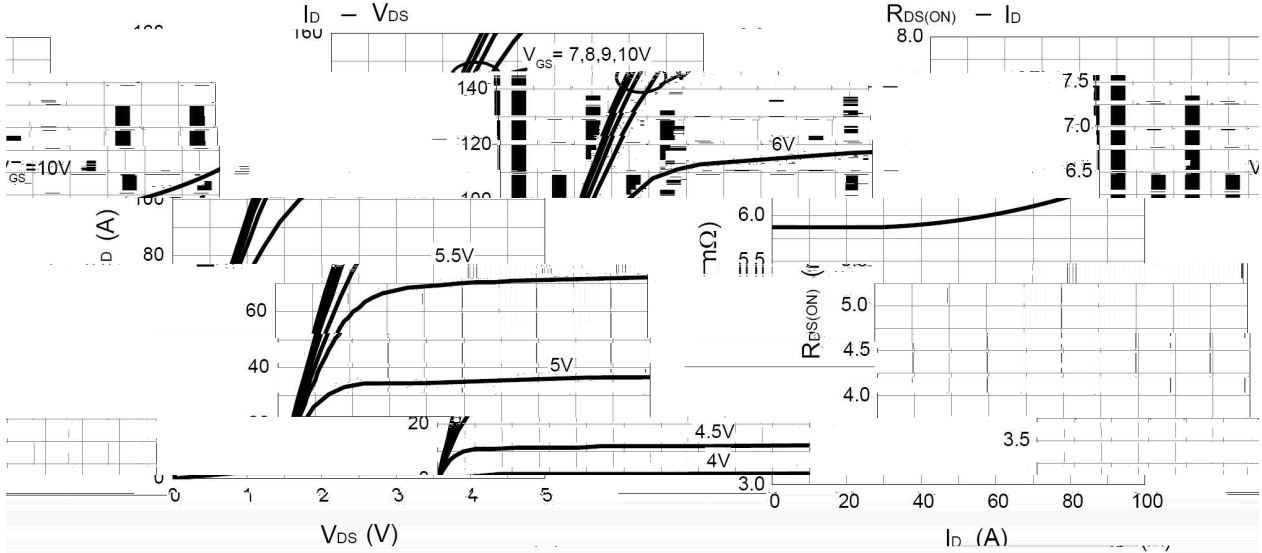
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$ $V_{GS}=0V$			1	μA
		$V_{DS}=60V$ $V_{GS}=0V$ $T_J=85^{\circ}C$			30	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		4.0	V
Forward On Voltage	V_{SD}	$I_S=90A$ $V_{GS}=0V$			1.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=90A$		8.0	10	m Ω
Gate Resistance	R_G	$V_{GS}=0V$ $V_{DS}=0V$ Frequency=1MHz		1.7		Ω
Input Capacitance	C_{iss}	$V_{GS}=0V$ $f=1.0MHz$ $V_{DS}=25V$		3160		pF
Output Capacitance	C_{oss}			752		pF
Reverse Transfer Capacitance	C_{rss}			190		pF
Total Gate Charge	Q_G	$V_{DS}=30V$ $V_{GS}=10V$ $I_D=60A$		96		nC
Gate Source Charge	Q_{GS}			21		nC
Gate Drain Charge	Q_{GD}			23		nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=30V$ $I_D=60A$ $R_{GEN}=6\Omega$ $V_{GS}=10V$		13	26	ns
Turn-On Rise Time	t_r			11	20	ns
Turn-Off Delay Time	$t_{d(off)}$			40	66	ns
Turn-Off Fall Time	t_f			60	95	ns

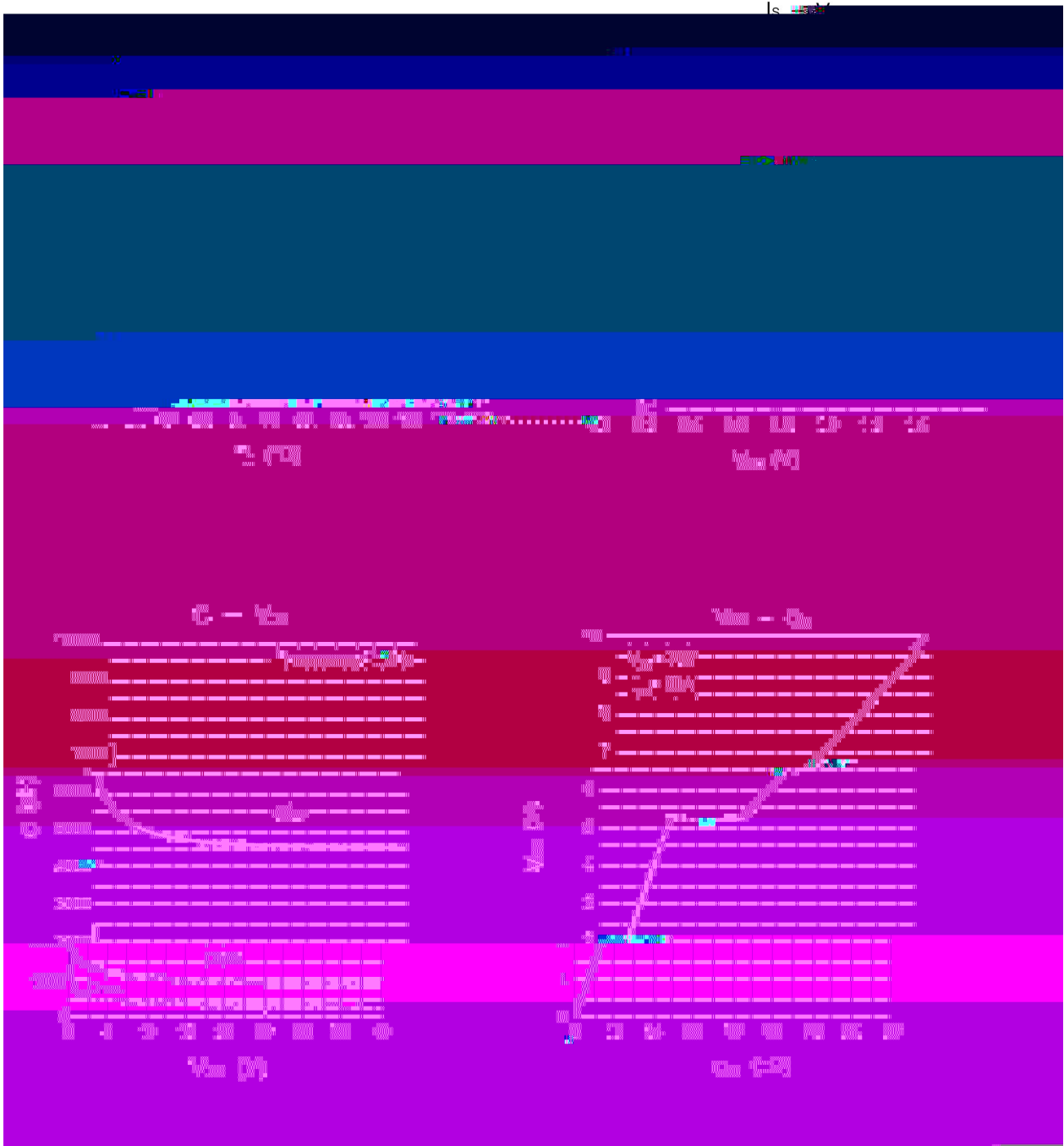
/ **Electrical Characteristic Curve**



/ Electrical Characteristic Curve

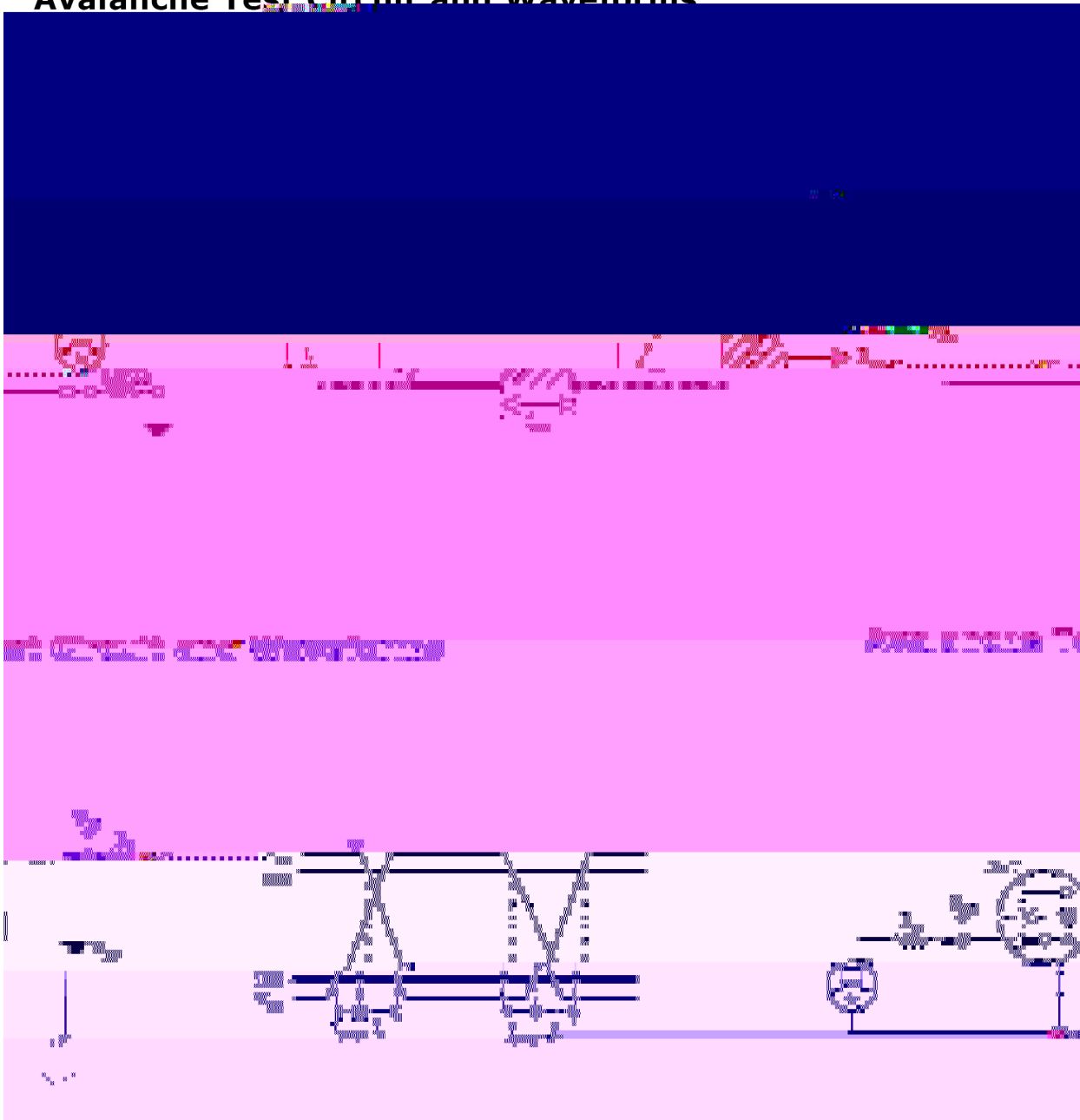


/ Electrical Characteristic Curve



/ Test Circuit and Waveforms

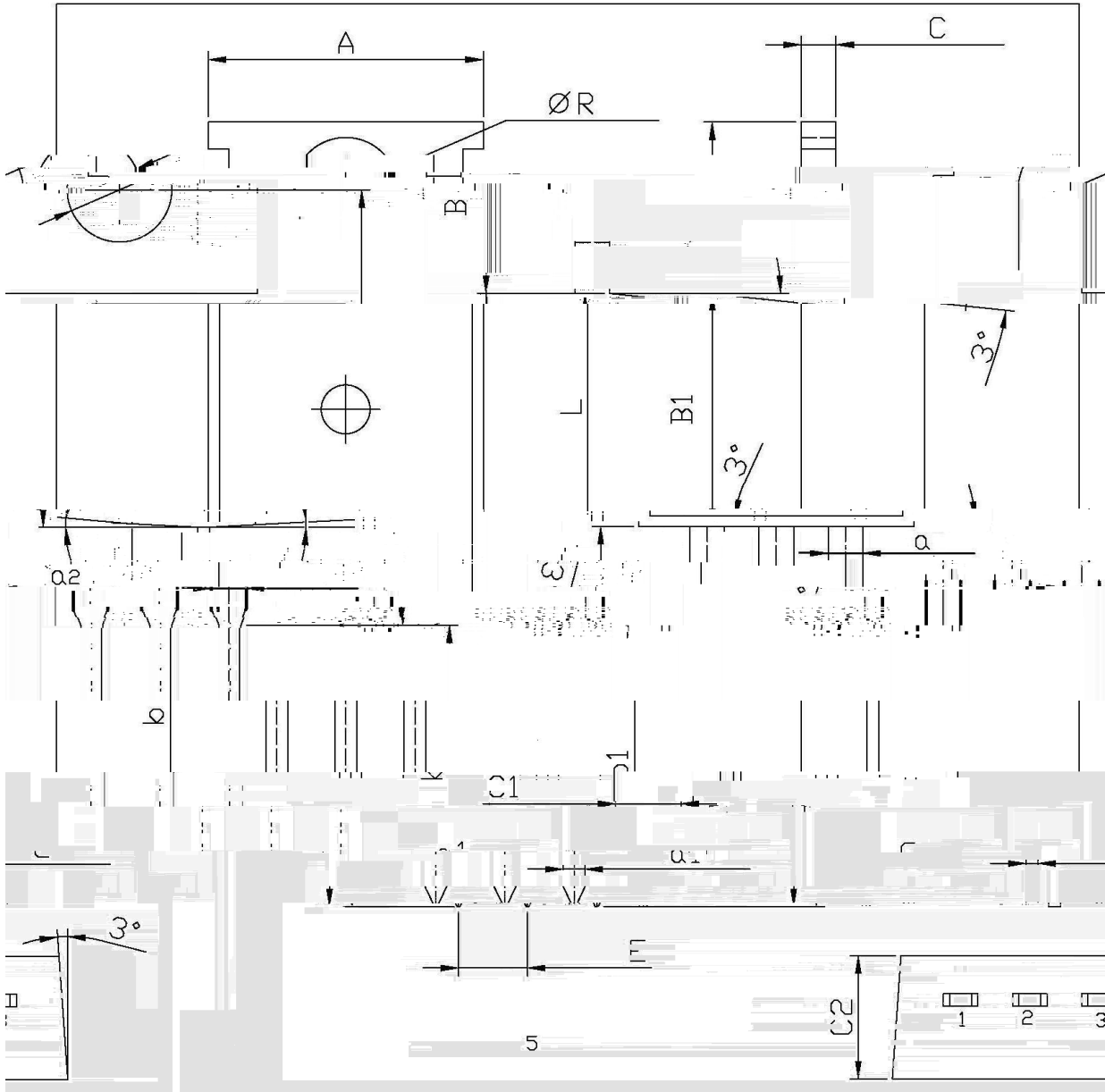
Avalanche Test Circuit and Waveforms



/ Package Dimensions

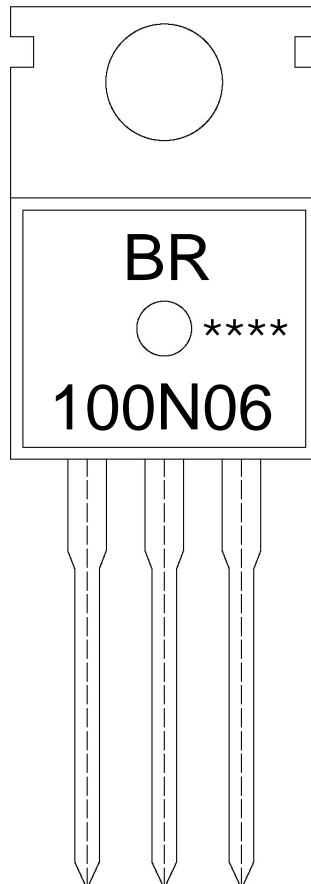
TO-220

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	9.8	12.2	C	12	14
B	7.5	10.0	B1	9.0	9.4
b	12.6	13.6	c1	2.2	2.6
b1	9.6	10.6	a1	0.7	0.9
c	1.3	1.7	c2	1.3	1.7

/ Marking Instructions



BR

100N06

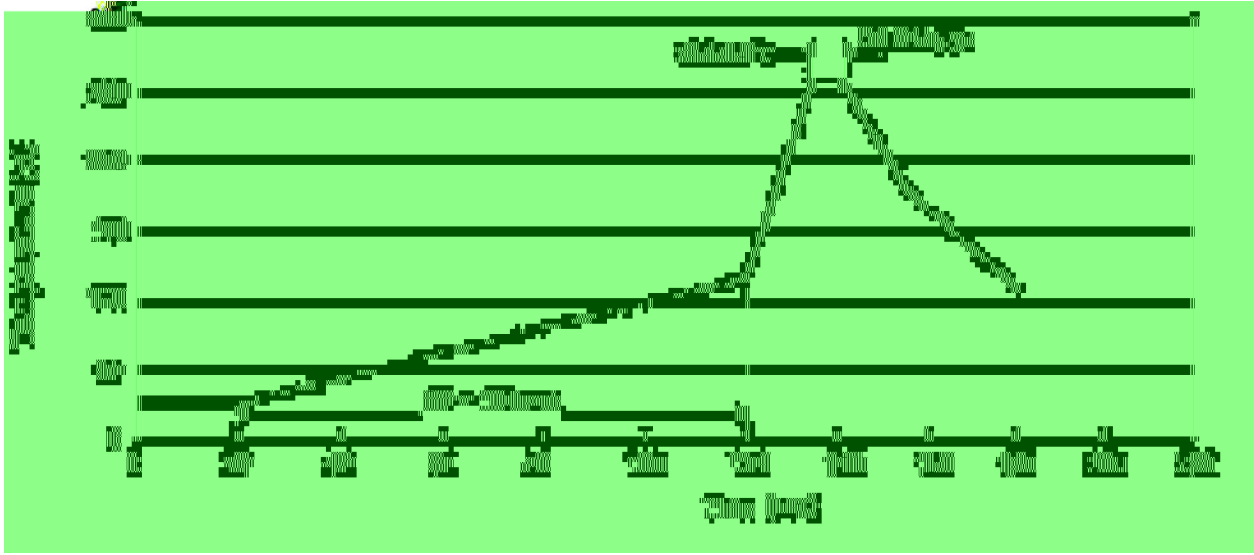
Note:

BR: Company Code

100N06: Product Type.

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

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



Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255±5 | | 5±0.5sec; | | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ **Resistance to Soldering Heat Test Conditions**

270±5 10±1 sec. Temp.:270±5°C Time:10±1 sec

/ **Packaging SPEC.**

/ **BULK**

Package Type	Units					Dimension (unit mm ³)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ **TUBE**

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ **Notices**