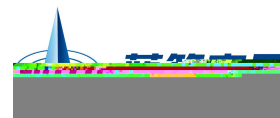


**/ Absolute Maximum Ratings(Ta=25 )**

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		$V_{DSS}$	30	V
Drain Current		$I_D(Tc=25^{\circ}C)$	20	A
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Avalanche Current		$I_{AS}$	10.4	A
Single Pulsed Avalanche Energy		$E_{AS}$	130	mJ
Power Dissipation		$P_D(Tc=25^{\circ}C)$	55	W
Junction Temperature Range		$T_J$	150	$^{\circ}C$
Storage Temperature Range		$T_{stg}$	-55~150	$^{\circ}C$
Maximum Junction-to-Ambient	Steady-State	$R_{\theta JA}$	62.7	$^{\circ}C/W$
Maximum Junction-to-Case	Steady-State	$R_{\theta JC}$	2.3	

**/ Electrical Characteristics(Ta=25 )**

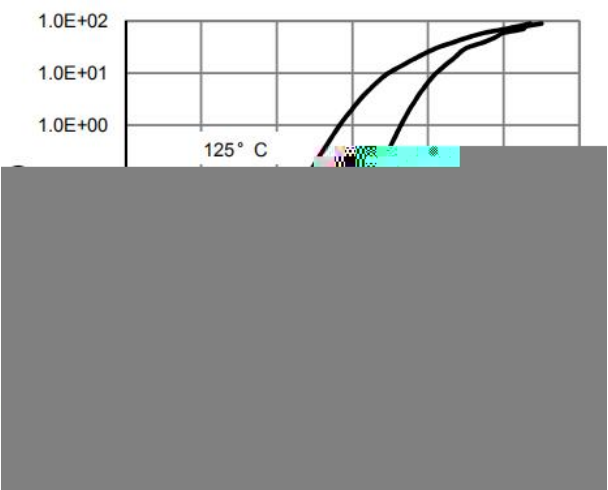
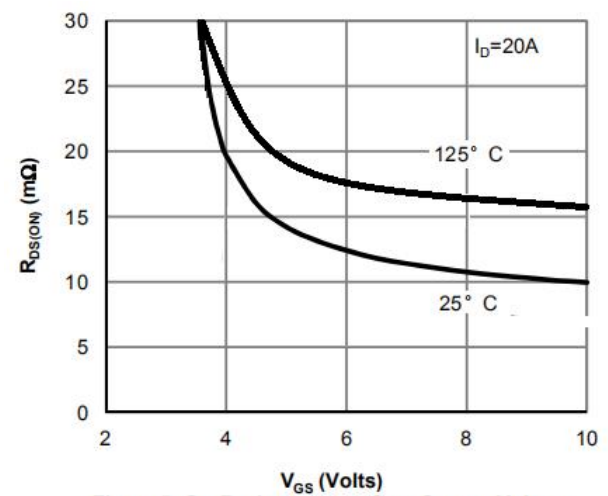
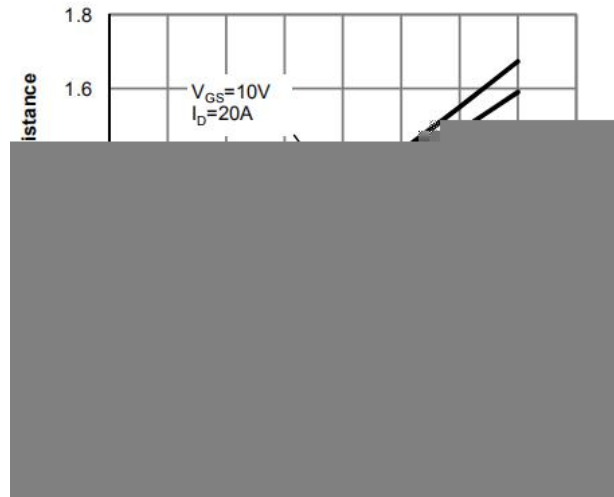
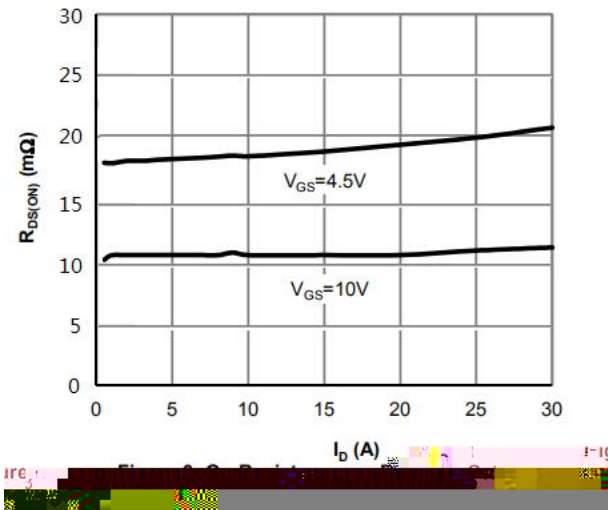
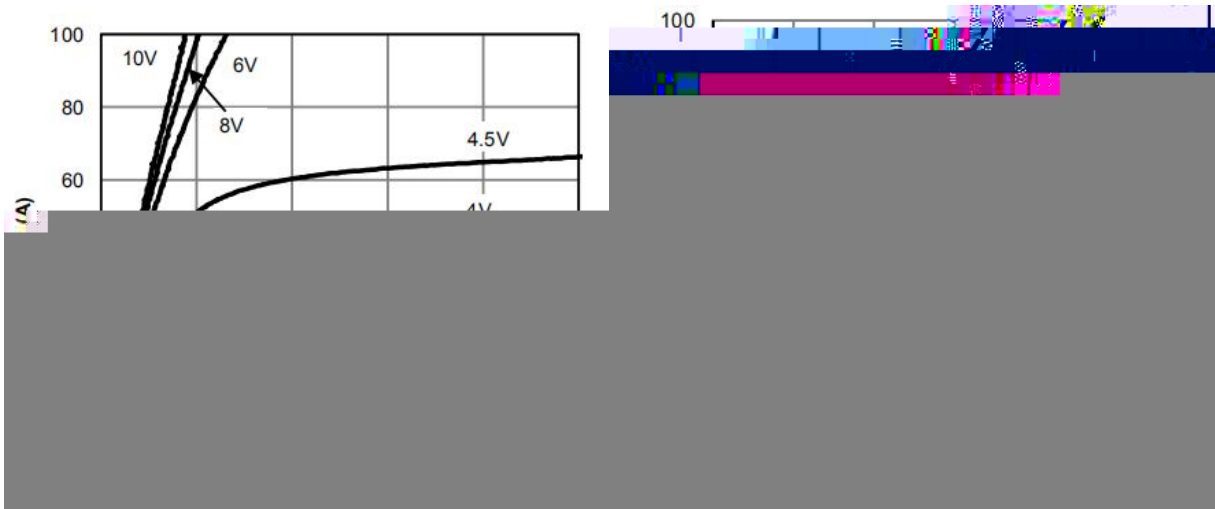
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V$ $V_{GS}=0V$			1.0	$\mu A$
		$V_{DS}=30V$ $T_J=150^{\circ}C$			50	
Gate-Body Leakage Current Forward	$I_{GSS}$	$V_{GS}=\pm 20V$ $V_{DS}=0V$			$\pm 0.1$	$\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20.0A$		11	13	$m\Omega$
		$V_{GS}=4.5V$ $I_D=10.0A$		16	18	$m\Omega$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1	1.8	3	V
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$ $I_F=1.0A$		0.7	1.2	V
Signal Source Resistance	$R_g$	$F=1MHz$		1.67		$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		666		$pF$
Output Capacitance	$C_{oss}$			26		
Reverse Transfer Capacitance	$C_{rss}$			63		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15V$ $V_{GS}=10V$ $R_L=0.75\Omega$ $R_{GEN}=3.0\Omega$		7		ns
Turn-On Rise Time	$t_r$			13.5		
Turn-Off Delay Time	$t_{d(off)}$			18.5		
Turn-Off Fall Time	$t_f$			4		



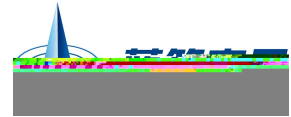
**/ Electrical Characteristics(Ta=25 )**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	$V_{DS}=15V$ $V_{GS}=10V$ $I_D=20.0A$		14		nC
Total Gate Charge	$Q_{g(4.5V)}$			6.5		
Gate-Source Charge	$Q_{gs}$			3		
Gate-Drain Charge	$Q_{gd}$			2.5		

**/ Electrical Characteristic Curve**



**Figure 5: On-Resistance vs. Gate-Source Voltage**



**/ Electrical Characteristic Curve**

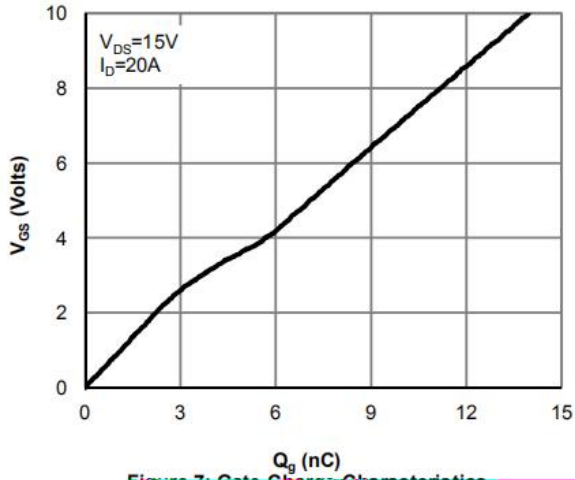


Figure 7: Gate-Charge Characteristics

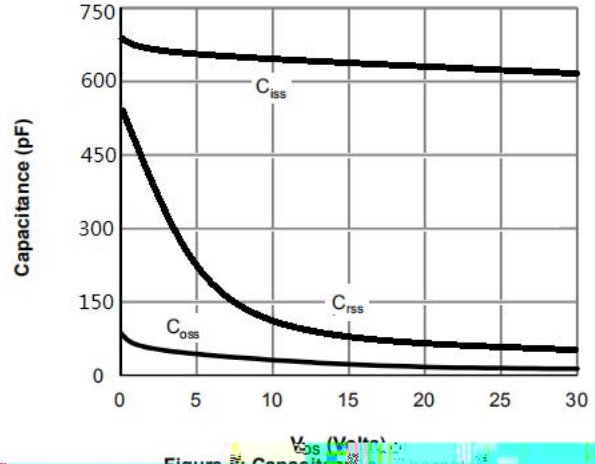
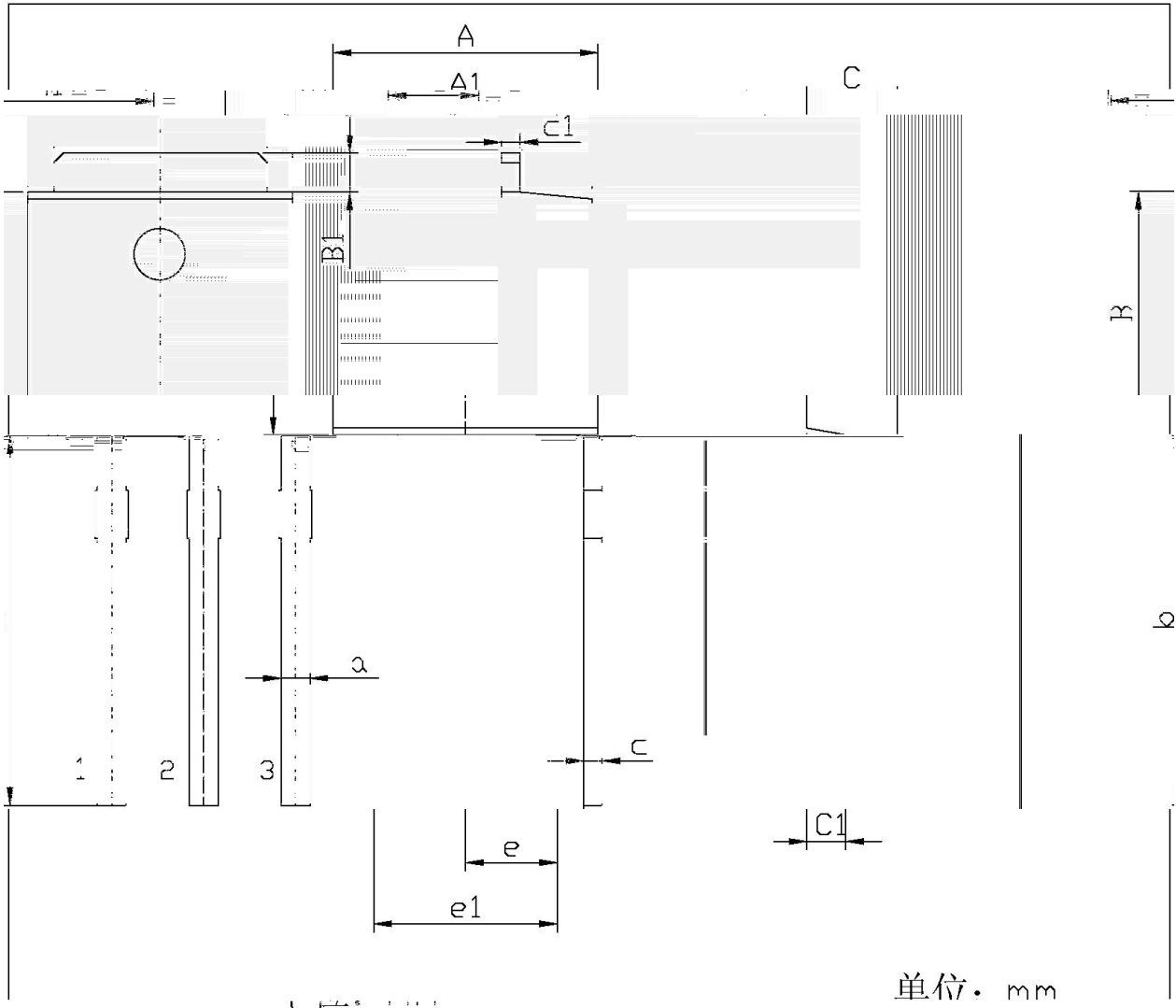


Figure 8: Capacitance Characteristics



**/ Package Dimensions**

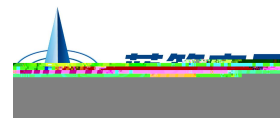


单位. mm

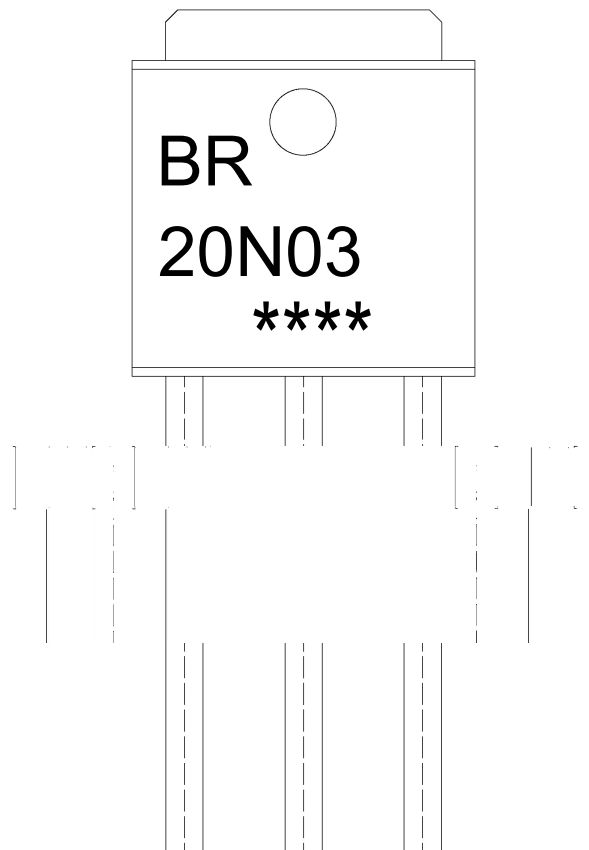
Dimensions In Millimeters			
Max	Symbol	Min	Max
6.75	a	0.50	0.70
5.50	b	9.00	9.40
6.25	c	0.45	0.55
	B1	0.95	1.25
	c	2.20	2.40
	e1	4.43	4.73

Dimensions In Millimeters	
Symbol	Min
A	6.45
A1	5.10
B	5.95
c1	0.45
e	2.24
	2.34

BRCS20N03IP



**/ Marking Instructions**



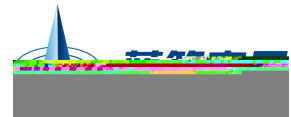
BR

Note:

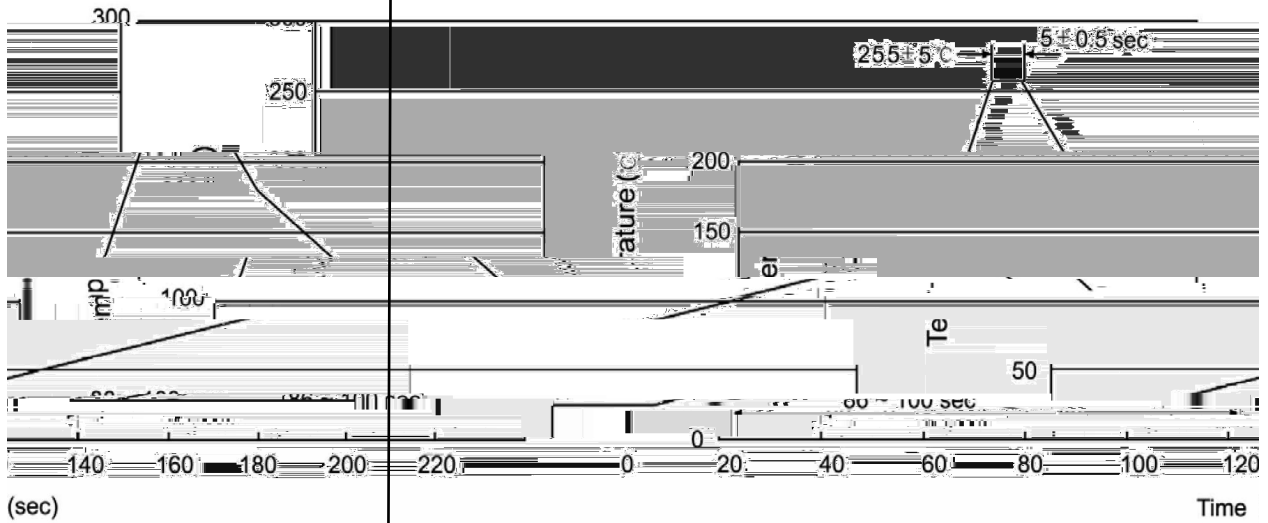
BR: Company Code

20N03: Product Type.

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



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



Note:

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

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱
T0	1,000	10	10,000	5	50,000	135×190	237×172×102	360×245×195