

BRCS030N10SHRA
Rev.B Sep.-2022

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Drain Current	$I_D(T_c=25^{\circ}\text{C})$	212	A
Pulsed Drain Current	I_{DM}	445	A
Gate-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy(L=0.5mH)	E_{AS}	1000	mJ
Avalanche Current	I_{AS}	50	A
Total Power Dissipation	$P_D(T_c=25^{\circ}\text{C})$	260	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$

1 / Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=50V$ $R_L=2.5$ $R_{GEN}=3$		23		ns
Turn-On Rise Time	t_r			17		
Turn-Off Delay Time	$t_{d(off)}$			50		
Turn-Off Fall Time	t_f			21		

Electrical Characteristic Curve

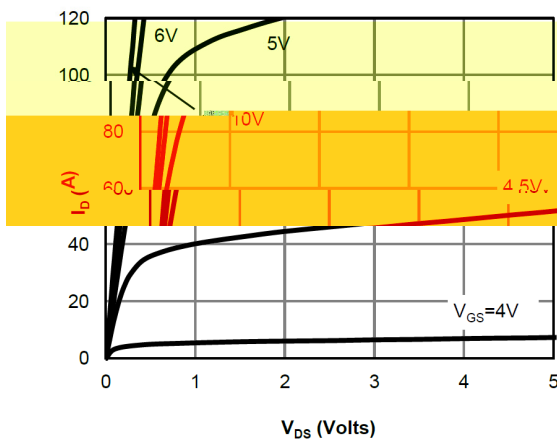


Figure 1: On-Region Characteristics

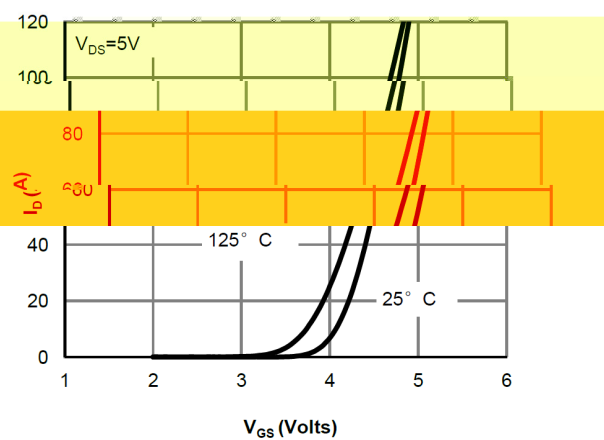


Figure 2: Transfer Characteristics

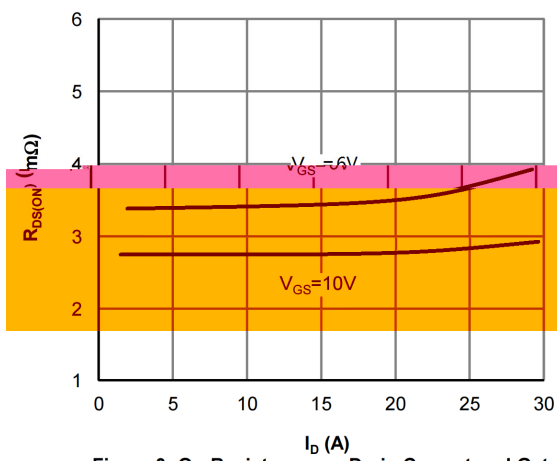


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

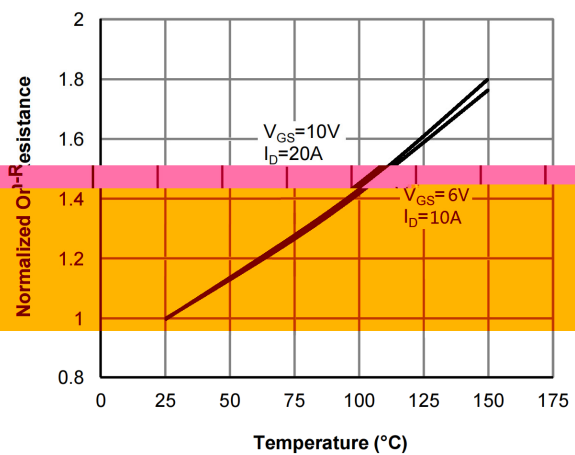


Figure 4: On-Resistance vs. Junction Temperature

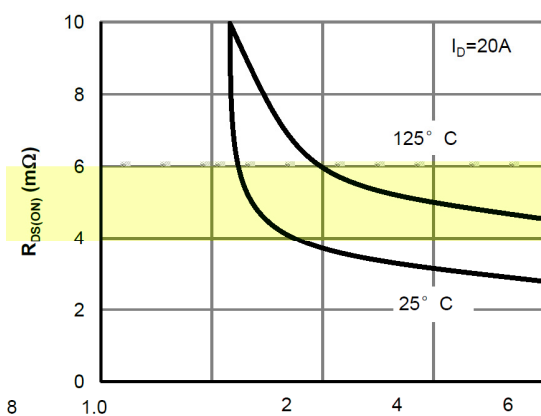


Figure 5: On-Resistance vs. Gate-Source Voltage

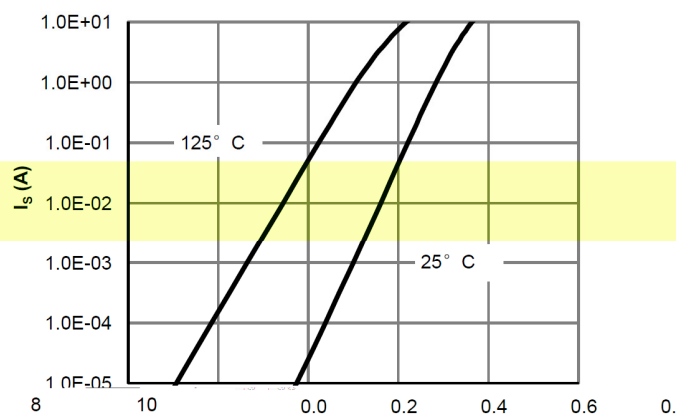


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

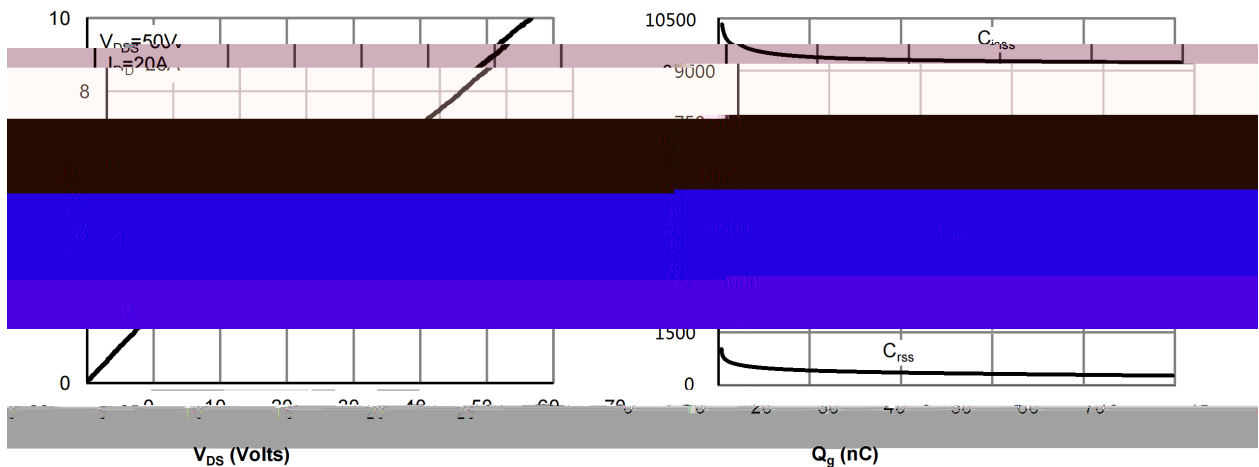


Figure 6: Capacitance Characteristics vs. Drain-Source Voltage V_{DS} Figure 7: Gate Charge Characteristics vs. Gate-Source Voltage V_{GS}

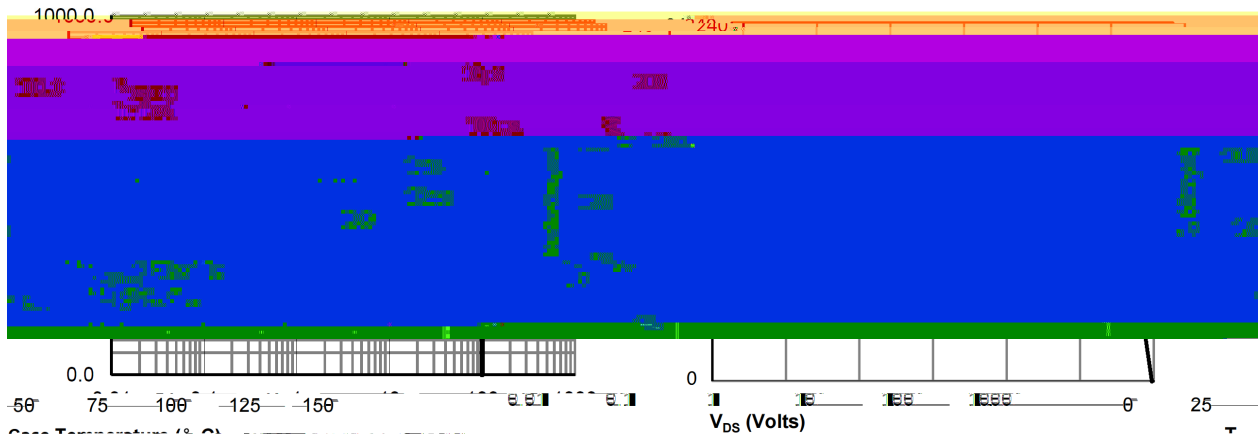


Figure 8: Maximum Continuous Drain Current vs. Case Temperature

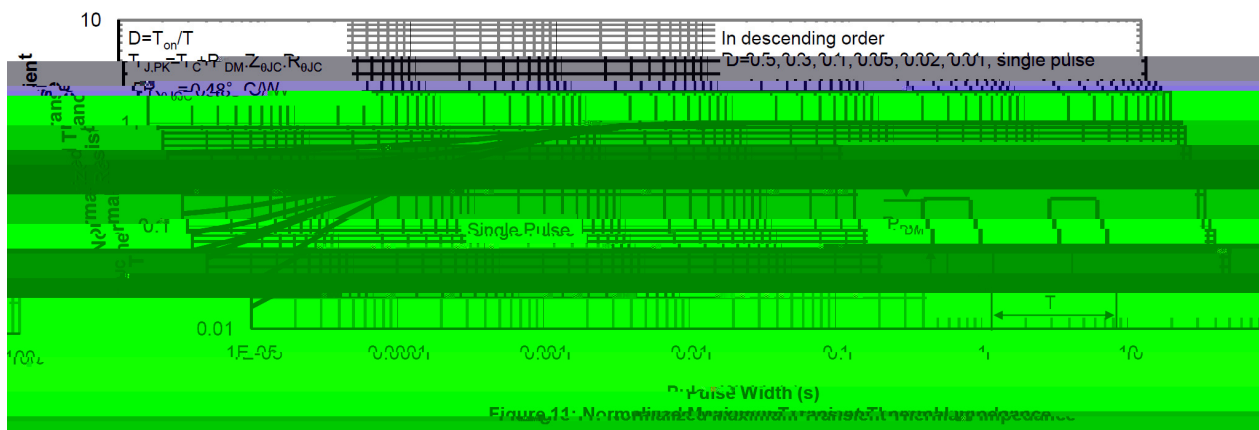
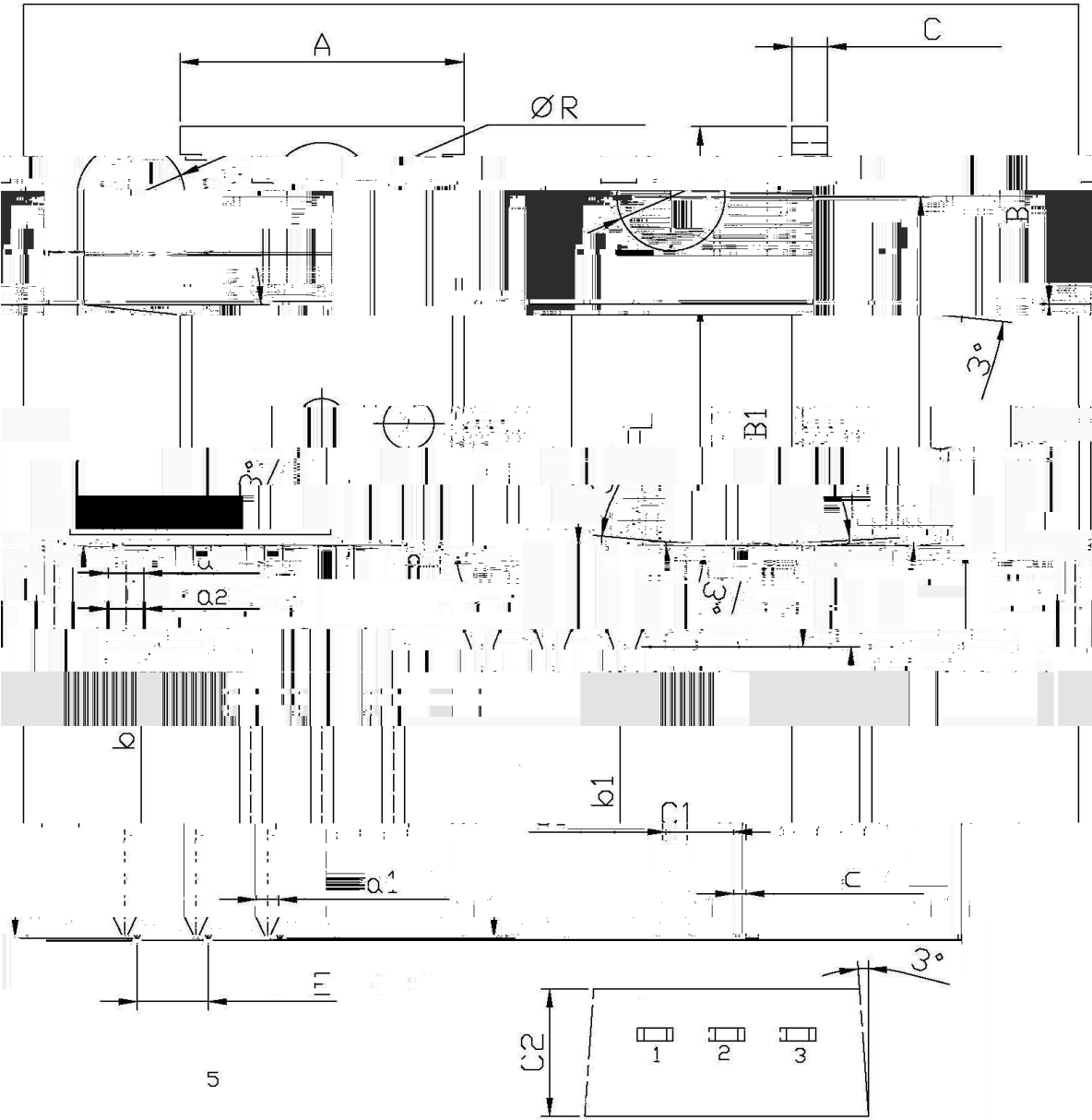


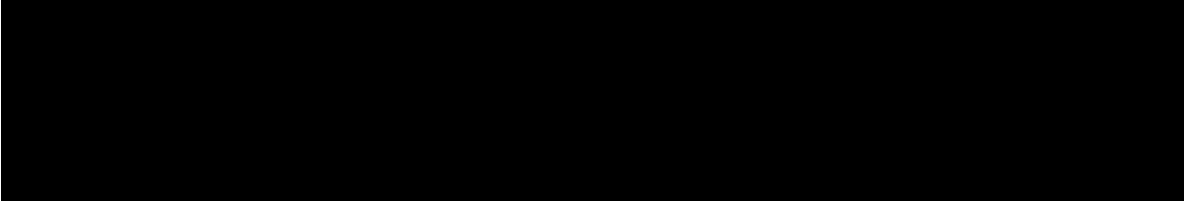
Figure 9: Maximum Pulsed Drain Current vs. Pulse Width

/ Package Dimensions

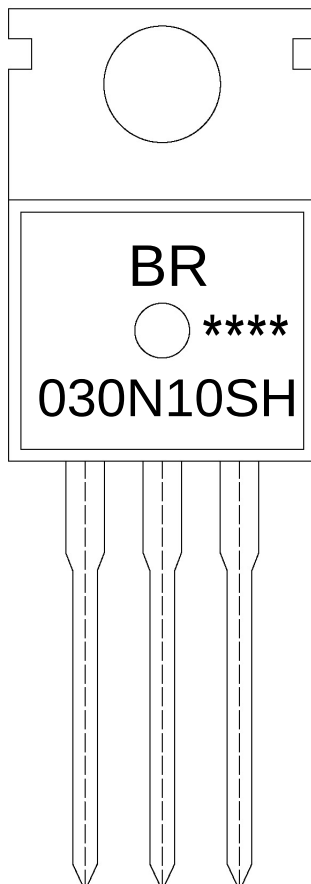
T0-220 单位: mm



Dimensions In Millimeters			Dimensions In Millimeters		
Symbol	Min	Max	Symbol	Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
⊥	15.7	16.1	B1	9.0	9.4
b1	12.6	13.6	C1	2.2	2.6



/ Marking Instructions



BR

030N10SH

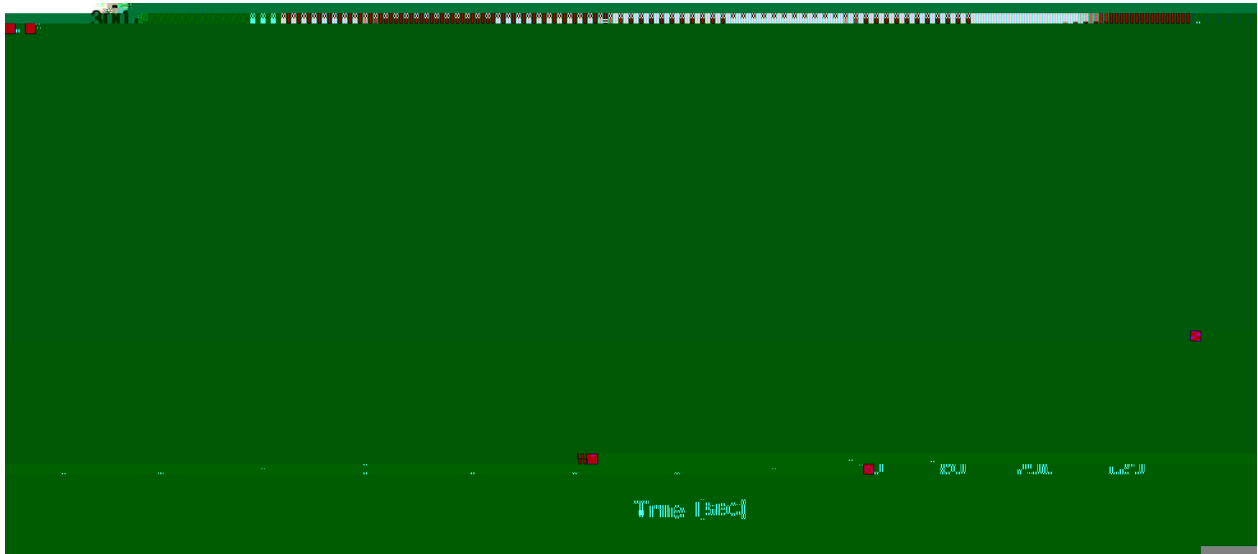
Note:

BR: Company Code

030N10SH: Product Type

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

↓ ↱ M () / 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. |

↓ Y / Resistance to Soldering Heat Test Conditions

270±5 10±1 sec. Temp.:270±5℃ 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

v / Notices