

BRCS120N06RA

Rev.B Dec.-2025



DATA SHEET

N

N-CHANNEL MOSFET in a

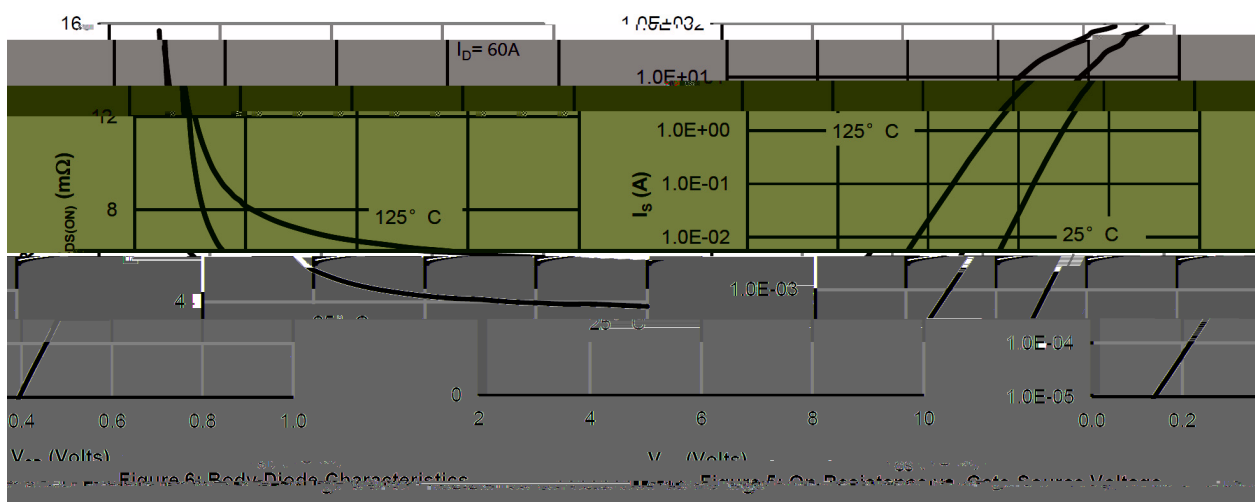
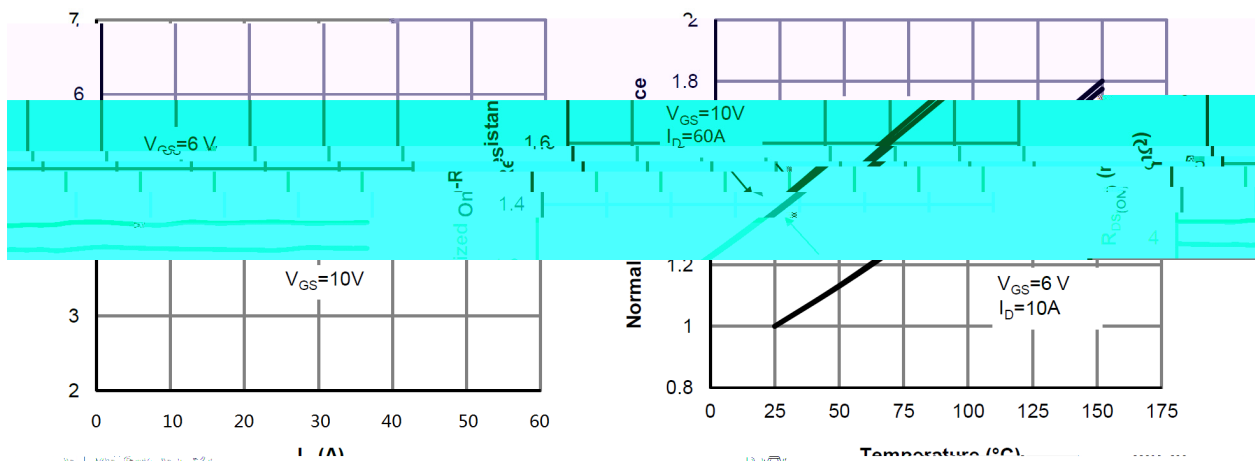
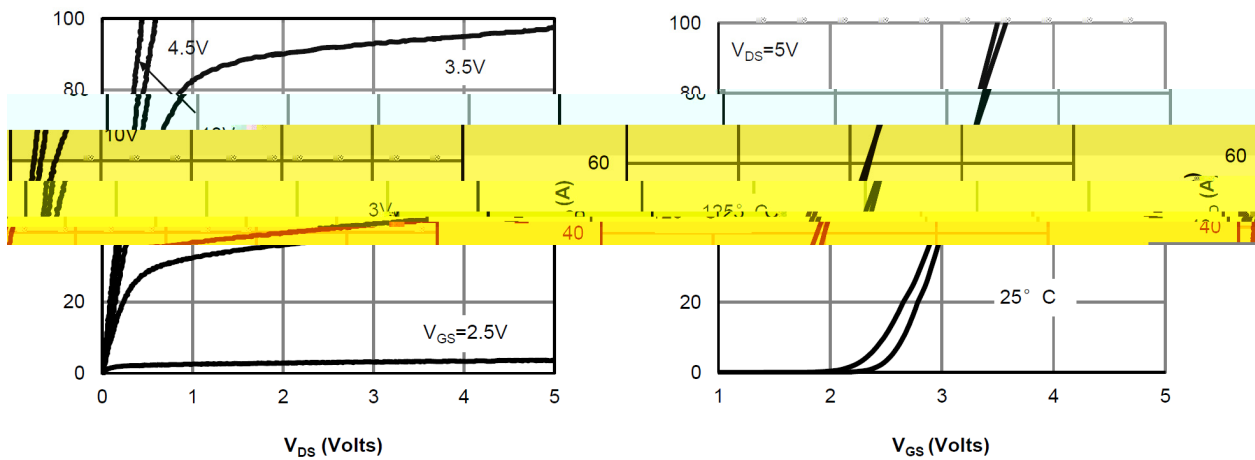
/ Absolute Maximum Ratings(Ta=25 –)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Drain Current	$I_D(T_C=25^\circ\text{C})$	120	A
	$I_D(T_C=100^\circ\text{C})$	88	A
Pulsed Drain Current	I_{DM}	480	A
Gate-Source Voltage	V_{GS}	± 20	V
Avalanche energy L=0.5mH	E_{AS}	860	mJ
Total Power Dissipation	$P_D(T_C=25^\circ\text{C})$	195	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Thermal Resistance-Junction to Case	$R_{\theta JC}$	0.64	/W
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	65	

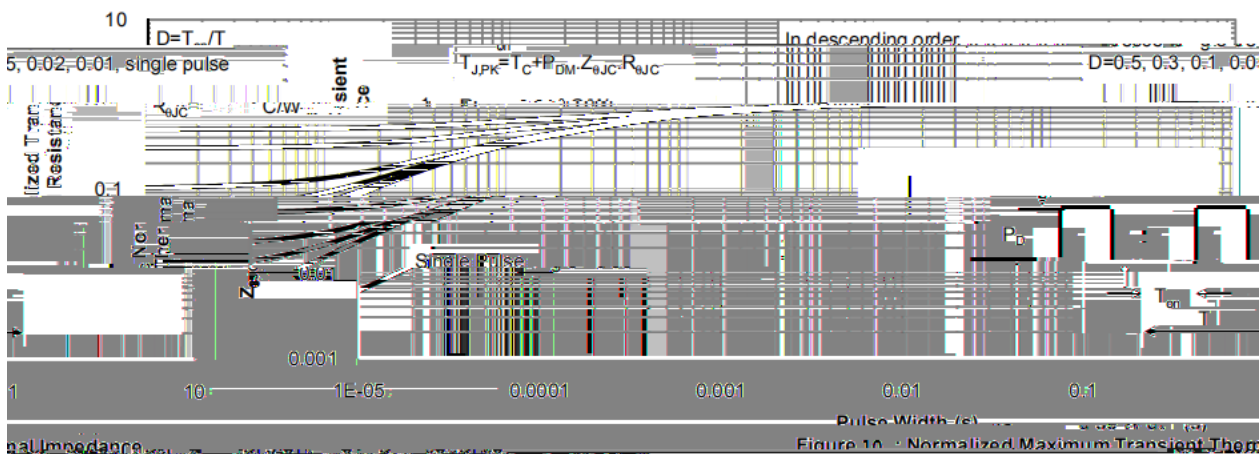
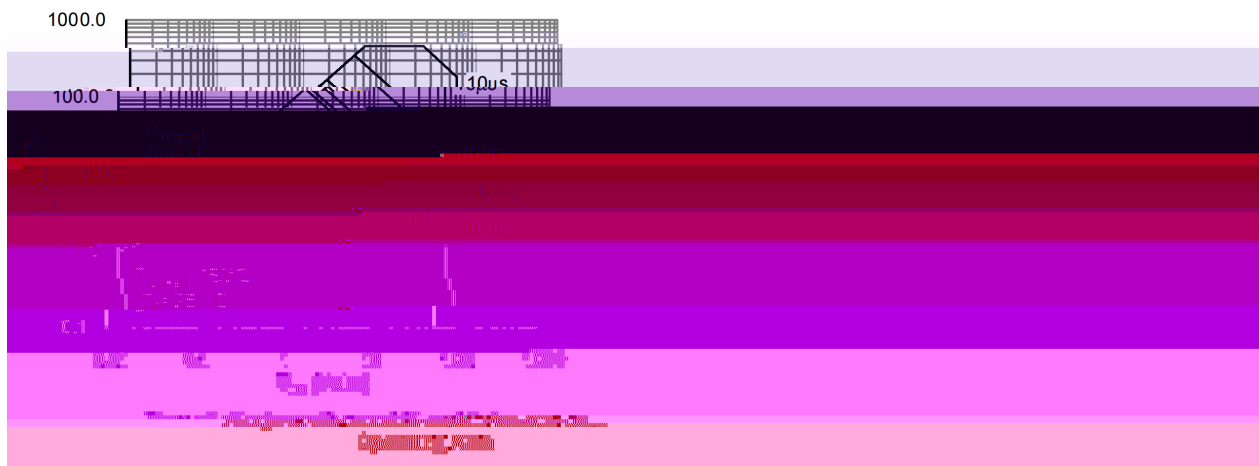
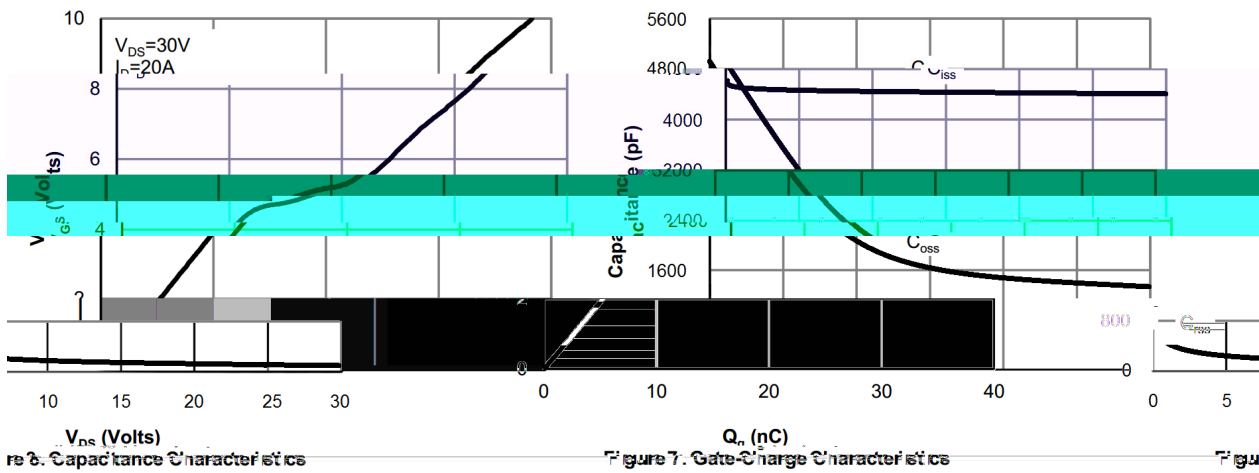
/ Electrical Characteristics(Ta=25 –)

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
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.5	1.9	3.5	V
Static Drain-Source On-Resistance	$R_{DS(on)1}$	$V_{GS}=10V$ $I_D=60A$		4	6	m Ω
	$R_{DS(on)2}$	$V_{GS}=6V$ $I_D=10A$		5	10	m Ω
Forward On Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Gate Series Resistan	R_g	$f=1.0MHz$		1.0		
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$		4400		pF
Output Capacitance	C_{oss}			1400		
Reverse Transfer Capacitance	C_{rss}			73		
Total Gate Charge	Q_g	$V_{GS}=10V$, $I_D=20A$ $V_{DS}=30V$		42		nC
Gate-Source charge	Q_{gs}			14		
Gate-Drain charge	Q_{gd}			11		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=1.5$ $V_{DS}=30V$ $R_{GEN}=3$		13		ns
Turn-On Rise Time	t_r			4		
Turn-Off Delay Time	$t_{d(off)}$			47		
Turn-Off Fall Time	t_f			6.5		

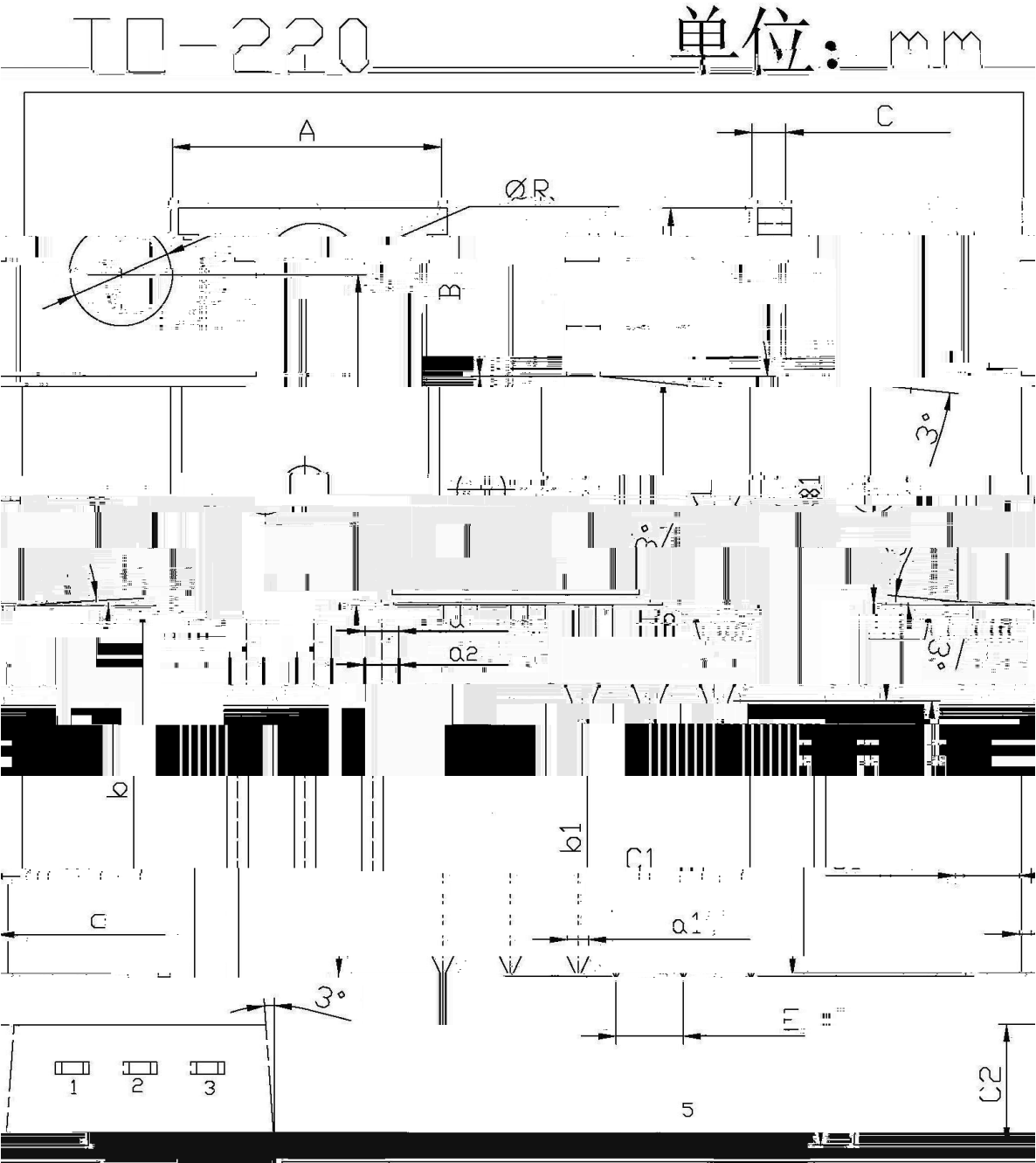
/ Electrical Characteristic Curve



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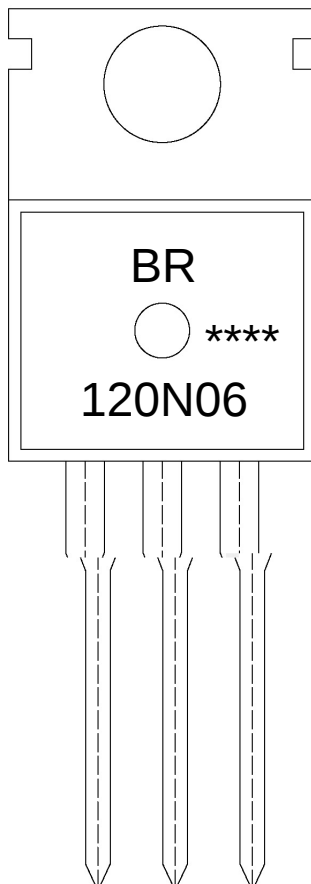
/ Package Dimensions



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
L	15.7	16.1	B1	9.0	9.4
a1	12.6	12.6	a2	9.6	9.6



/ Marking Instructions



Note:

BR: Company Code

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

120N06: Product Type

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

- 1

25 150

60 90sec;
- 2

255 5

5 0.5sec;
- 3

2 10 /sec.
- Note:

1.Preheating:25~150 , Time:60~90sec.

2.Peak Temp.:255 5 , Duration:5 0.5sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

270 5

10 1 sec.

Temp.:270±5

Time:10±1 sec

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