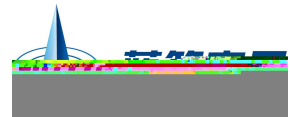


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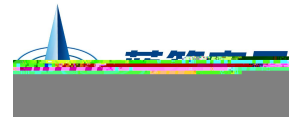


DATA SHEET

A	2022.08.03	ALL	AOS-AOD4185		

BRCS120P04DP

Rev.A Aug.-2022



DATA SHEET

TO-252 P MOS

P-CHANNEL MOSFET in a TO-252 Plastic Package.

Low On-Resistance, fast switch

W

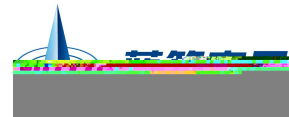
f

/ Absolute Maximum Ratings($T_a=25$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-40	V
Drain Current - Continuous	$I_D(T_c=25)$	-50	A
Drain Current – Pulsed	I_{DM}	-128	A
Gate-Source Voltage	V_{GS}	20	V
Power Dissipation	$P_D(T_c=25)$	62.5	W
Single Pulse Avalanche Energy(L=0.5mH)	E_{AS}	317.5	mJ
Avalanche Current(L=0.5mH)	I_{AS}	-31.5	A
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 150	°C
Thermal resistance, junction - ambient	t 10s	20	°C/W
	Steady-State	50	
Thermal resistance, junction - case	Steady-State	2.0	

/ Electrical Characteristics($T_a=25$)

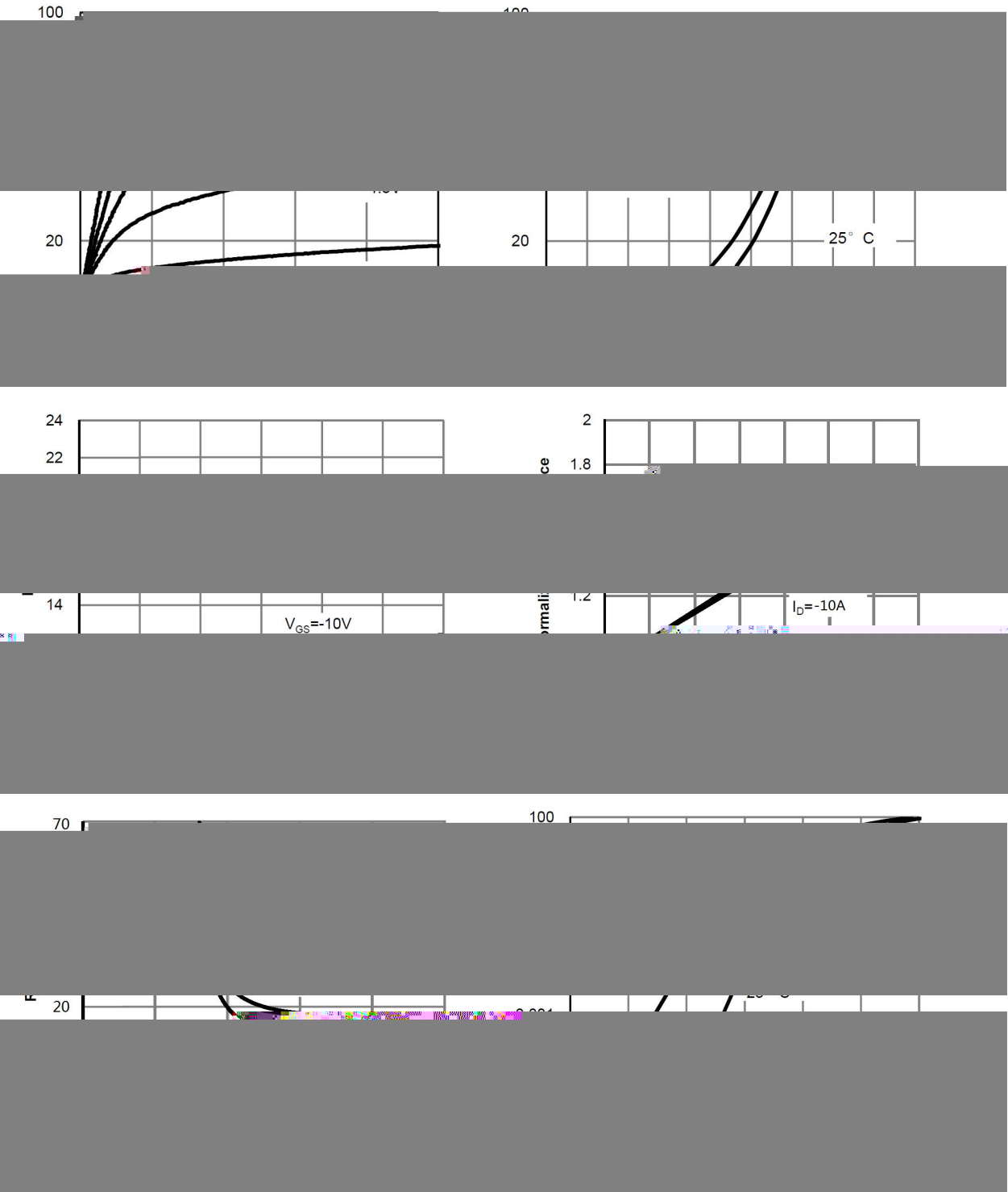
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
	BV_{DSS}	$I_D=-250\mu A$ $V_{GS}=0V$	-40	-48		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-40V$ $V_{GS}=0V$			-1	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1	-1.7	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V$, $I_D=-20A$		11.4	14	m Ω
		$V_{GS}=-4.5V$, $I_D=-10A$		15	20	
Diode Forward Voltage	V_{SD}	$I_S=-1A$, $V_{GS}=0V$			-1.2	V
Input Capacitance	C_{iss}	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		4760		pF
Output Capacitance	C_{oss}			2800		
Reverse Transfer Capacitance	C_{rss}			1960		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		17.5		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=-10V$, $V_{DS}=-20V$, $I_D=-20A$		43		nC
Total Gate Charge	$Q_{g(4.5V)}$			19		
Gate Source Charge	Q_{gs}			7.2		
Gate Drain Charge	Q_{gd}			8.5		



/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-20V$ $R_L=1$ $R_{GEN}=3$		9.4		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			56		
Turn-Off Fall Time	t_f			32		

/ Electrical Characteristic Curve



/ Electrical Characteristic Curve

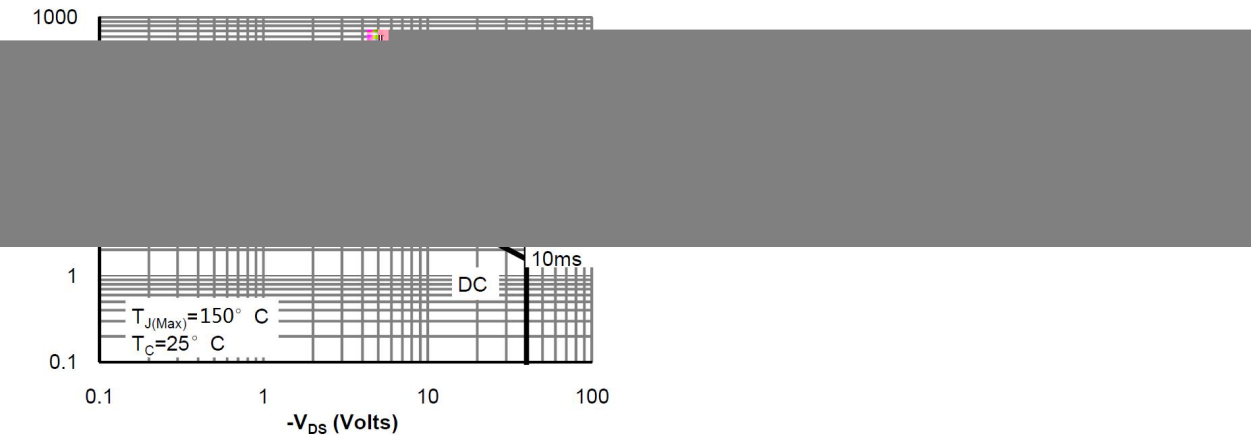
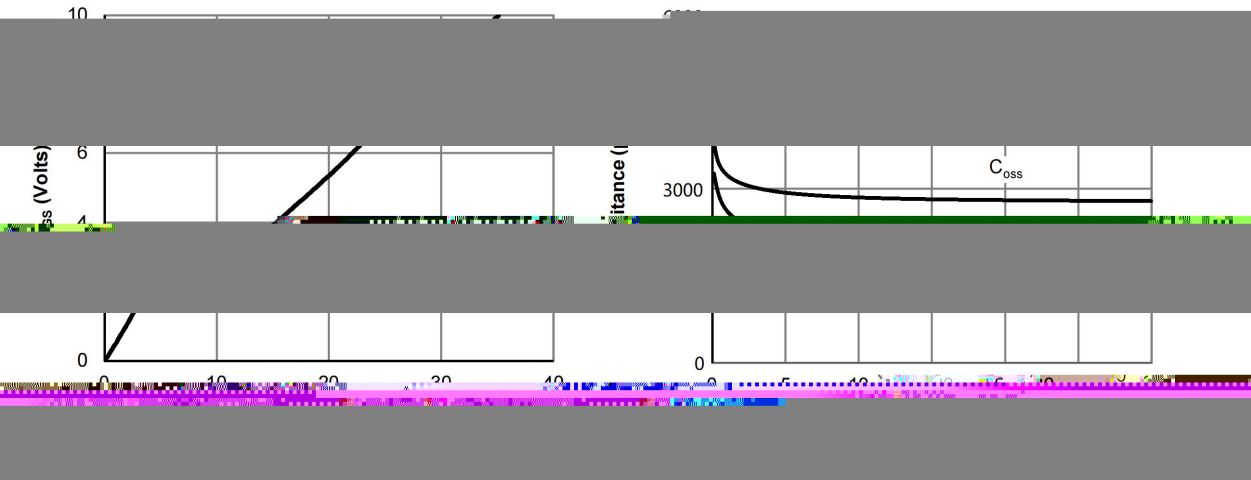
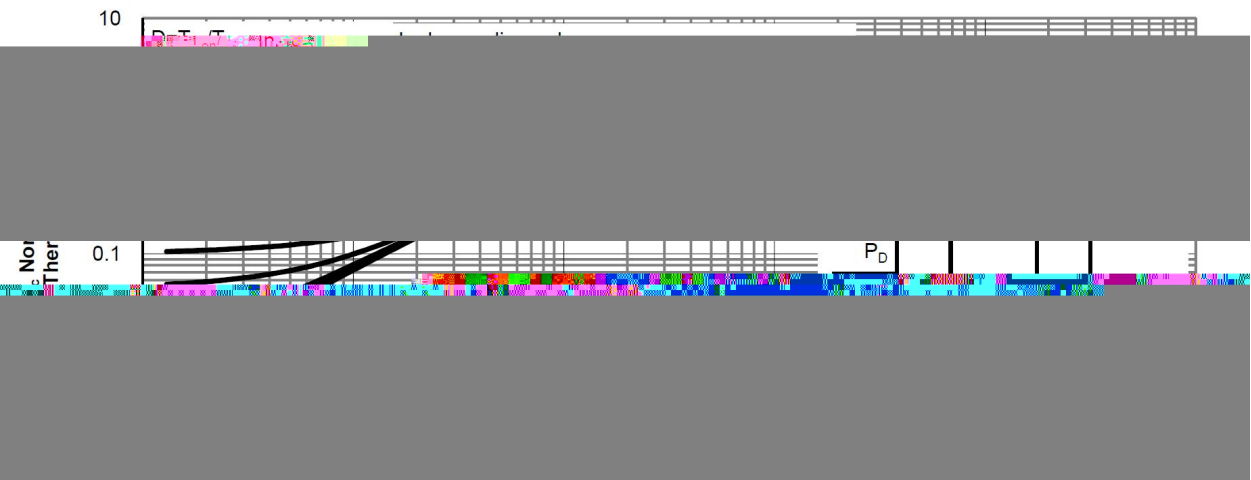
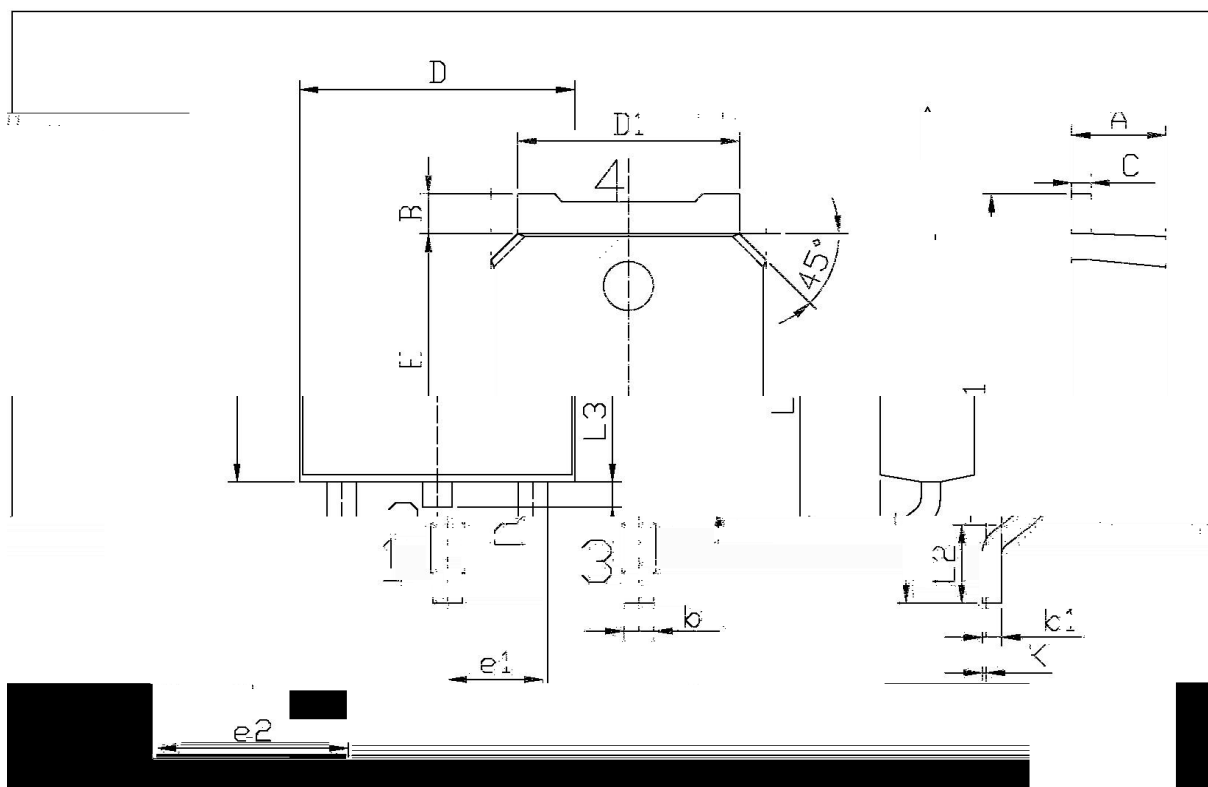


Figure 9: Maximum Forward Biased Safe Operating Area



/ Package Dimensions

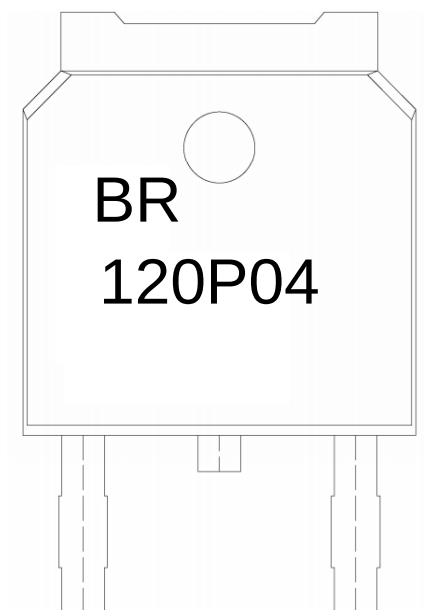


单位: mm

Dimeric form, La Millimetre				Dimeric form, La Millimetre			
Symbol		Symbol		Symbol		Symbol	
Max	Min	Max	Min	Max	Min	Max	Min
20	2.40	5.95	6.25	A	2		
95	11.25	2.24	2.34	B	0		
0	0.50	0.90	0.93				
b1	0.45	0.55	0.55				
1.70	2.00	0.45	0.55	1.2			
6.75	L3	0.60	0.90	D		6.45	
5.50	K	0.20	0.40			5.40	

TN-252

/ Marking Instructions



BR

120P04

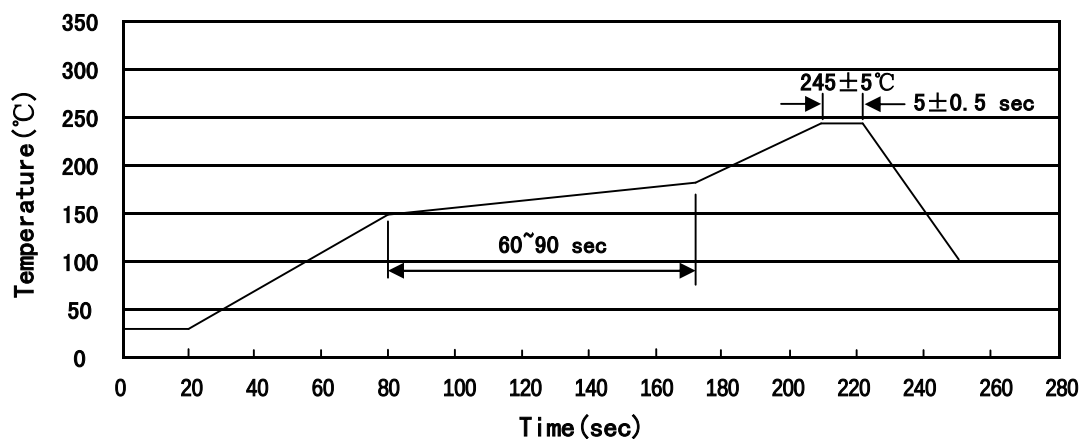
Note:

BR: Company Code

120P04: Product Type

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

() /



说明：

- 1、预热温度 150~180°C，时间 60~90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

/ Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

/ Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱
						"		

套管包装 / TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只 套管	套管 盒	只 盒	盒 箱	只 箱	套管	盒	箱

/ Notices