修订记录 / Revised record

版本	修订日期	有修订的页码	修订涉及的内容	拟制	审核
A	2020.08.04	All	基于 BRCS120N03ZB 规格书，参考 AON2420 规格书制作	庞隆基	陈逸晞
B	2020.09.15		RDSON 测试条件从原来的 10V/20A,4.5V/10A 改为 10V/8A,4.5V/6A	庞隆基	陈逸晞
C	2021-12-1	8	3000 一盘改为 4000 一盘	黄超	庞隆基

描述 / Descriptions

N 2*2B- 塑封封装 N 沟道 MOS 场效应管。
N-Channel Enhancement Mode Field Effect Transistor in a DFN 2*2B-6L Plastic Package.

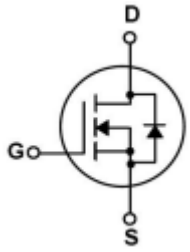
特征 / Features

V_{DS} (V) = 30V
I_D = 8 A (V_{GS} = ±20V)
无卤产品。H Product.

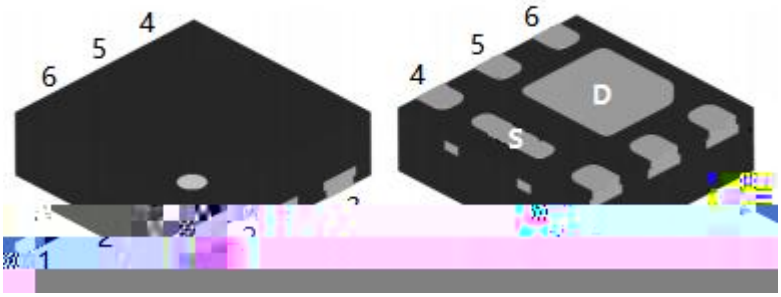
用途 / Applications

用于低压电路如：汽车电路、 C/ C 转换、便携式产品的电源高效转换。
Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



出脚	定义
Pin1	D
Pin2	D
Pin3	G
Pin4	S
Pin5	D
Pin6	D

放大及印章代码 / h_{FE} Classifications & Marking

见印章说明。See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		I_D(Tc=25℃)	8	A
Gate-Source Voltage		V_{GS}	±20	V
Avalanche Current		I_{AS}	12.9	A
Single Pulsed Avalanche Energy		E_{AS}	199	mJ
Power Dissipation		P_D(Tc=25℃)	2.8	W
Junction Temperature Range		T_j	150	℃
Storage Temperature Range		T_{stg}	-55～150	℃
Maximum Junction-to-Ambient	t≤10s	$R_{\theta JA}$	45	℃/W
	Steady-State	$R_{\theta JA}$	80	

电性能参数 / Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	30	34.7		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V V_{GS}=0V			1.0	μA
		V_{DS}=30V T_J=150℃			50	
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=8.0A		12.8	14	mΩ
		V_{GS}=4.5V I_D=6.0A		18	20	mΩ
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1	1.8	2.5	V
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_F=1.0A		0.7	1.2	V
Signal Source Resistance	Rg	F=1MHz		1.67		Ω
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=1.9Ω R_{GEN}=3.0Ω		4.8		ns
Turn-On Rise Time	t_r			3.3		
Turn-Off Delay Time	$t_{d(off)}$			18.5		
Turn-Off Fall Time	t_f			4.0		

Parameter	Symbol	Test Conditions	Min

电参数曲线图 / Electrical Characteristic Curve

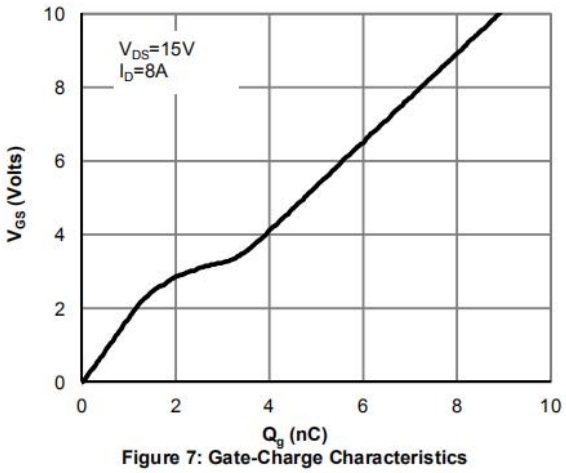
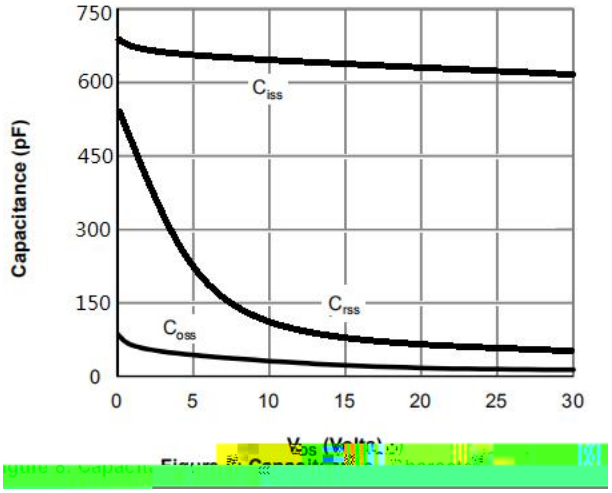
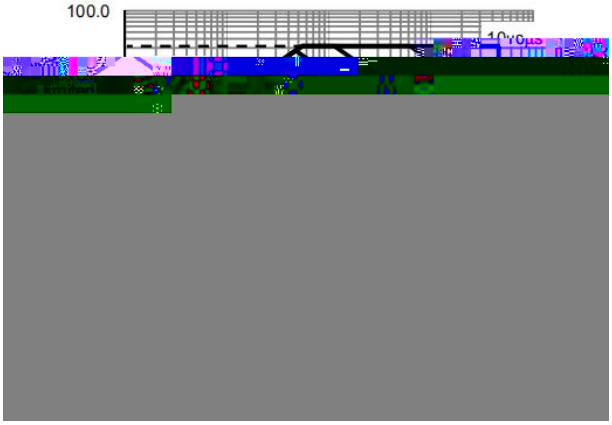
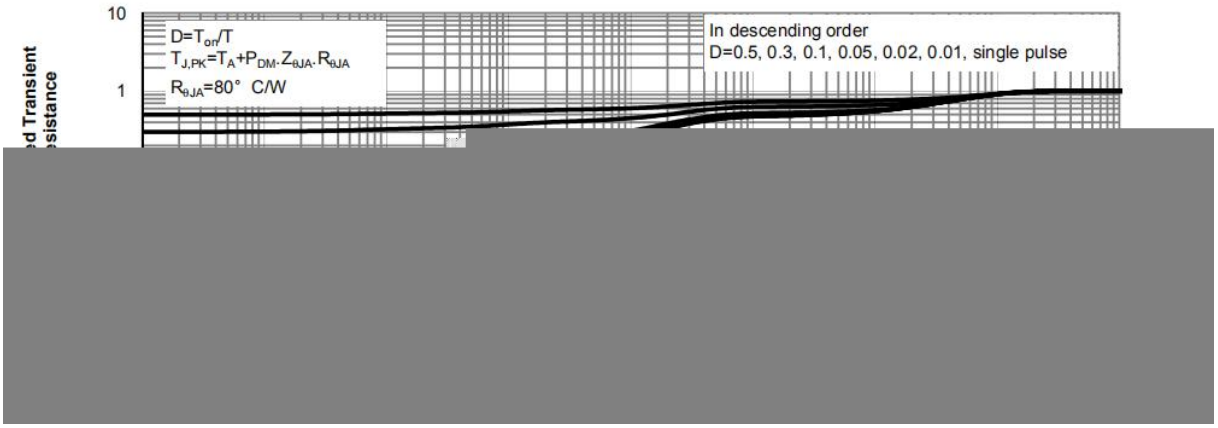


Figure 7: Gate-Charge Characteristics

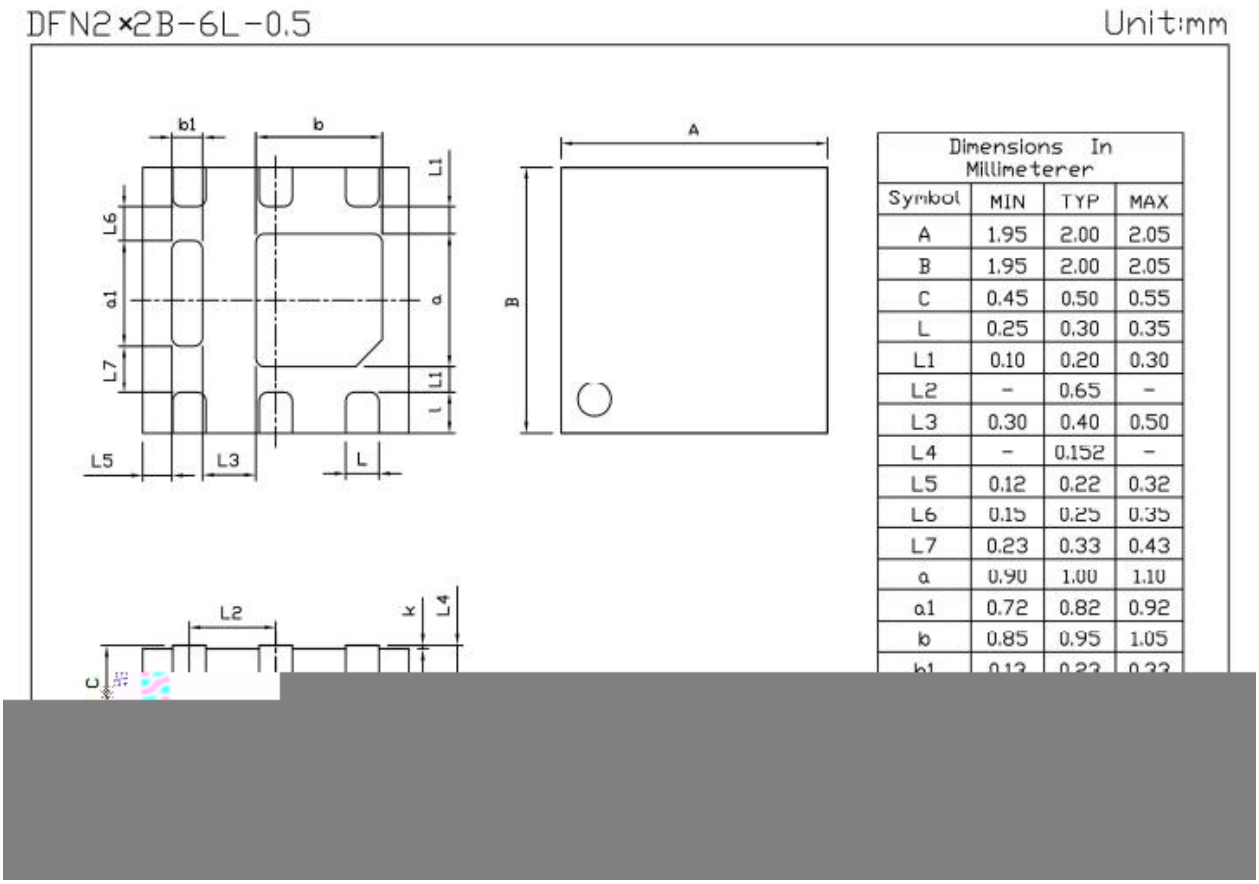






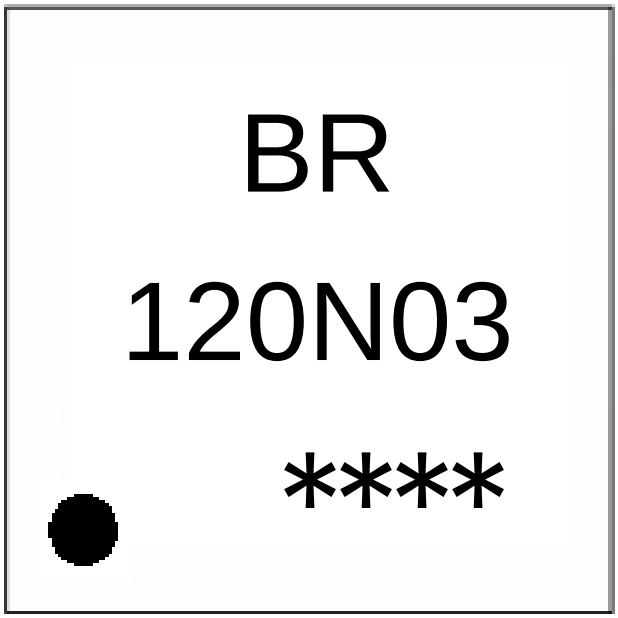
外形尺寸图 / Package Dimensions

DFN2×2B-6L-0.5 外形尺寸图



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	1.95	2.00	2.05
B	1.95	2.00	2.05
C	0.45	0.50	0.55
L	0.25	0.30	0.35
L1	0.10	0.20	0.30
L2	-	0.65	-
L3	0.30	0.40	0.50
L4	-	0.152	-
L5	0.12	0.22	0.32
L6	0.15	0.25	0.35
L7	0.23	0.33	0.43
a	0.90	1.00	1.10
a1	0.72	0.82	0.92
b	0.85	0.95	1.05
b1	0.13	0.23	0.33

印章说明 / Marking Instructions



BR
120N03
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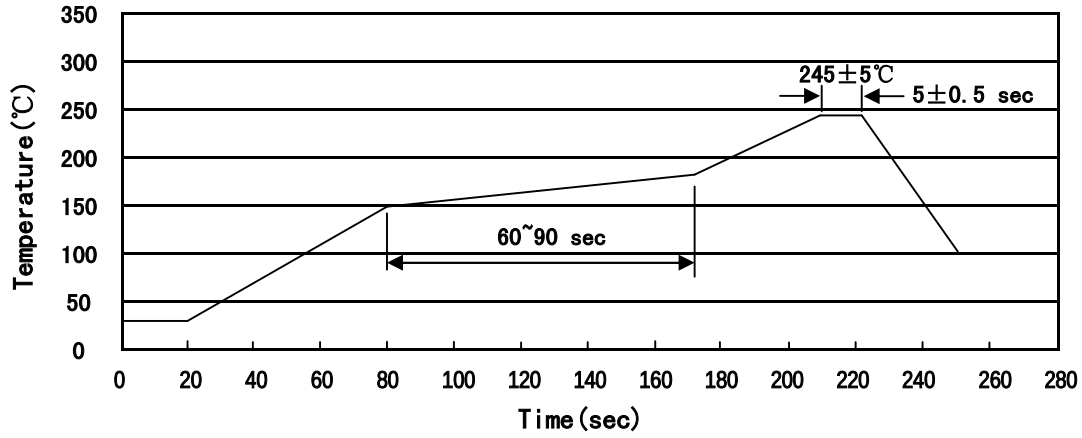
Note:

BR:	Company Code.
120N03:	Product Type
****:	Lot No. Code, code change with Lot No.

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

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

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

260±5℃	10±1 sec.	Temp.:260±5℃	Time:10±1 sec

包装规格 / Packaging SPEC.

/ REEL

Package Type	Units					Dimension		(unit mm^3)
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box	Outer Box
DFN 2*2B-6L	4,000	10	40,000	4	160,000	7″ ×8	210×205×205	445×230×435

使用说明 / Notices