

BRD65R650C

Rev.B May.-2022



DATA SHEET

修订记录 / Revised record

A	2022.4.21	ALL	AOS-AOD600A70		
B	2022.5.26	2,3,4,5	YC-RMX65R380SN_ReV1.0		

描述 / Descriptions

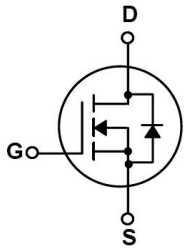
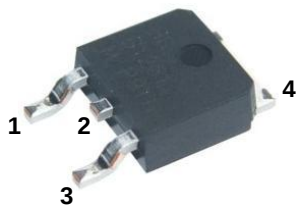
TO-252 N 650V

N-CHANNEL 650V Super-Junction Power MOSFET in a TO-252 Plastic Package.

特征 / Features $R_{DS(on)}$ C_{rss} Low $R_{DS(on)}$, low gate charge, low C_{rss} , fast switching, HF Product.**用途 / Applications**

DC/DC

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**

PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

印章代码 / Marking

See Marking Instructions.



Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	650	V
Drain Current	$I_D(T_C=25^{\circ}\text{C})$	8.5	A
Drain Current - Pulsed	I_{DM}	34	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	108	mJ
Avalanche Current	I_{AS}	5	A
Power Dissipation	$P_D(T_C=25^{\circ}\text{C})$	104	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$
Junction-to-Case	$R_{\theta JC}$	1.2	$^{\circ}\text{C/W}$
Junction-to-Ambient	$R_{\theta JA}$	55	$^{\circ}\text{C/W}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	650	700		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V$ $V_{GS}=0V$ $T_J=25^{\circ}\text{C}$			1.0	μA
Gate-Body Leakage Current, Forward	I_{GSS}	$V_{GS}=\pm 30V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.5	3.2	4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=3.5A$		580	650	m Ω
Drain-Source Diode Forward Voltage	V_{SD}					

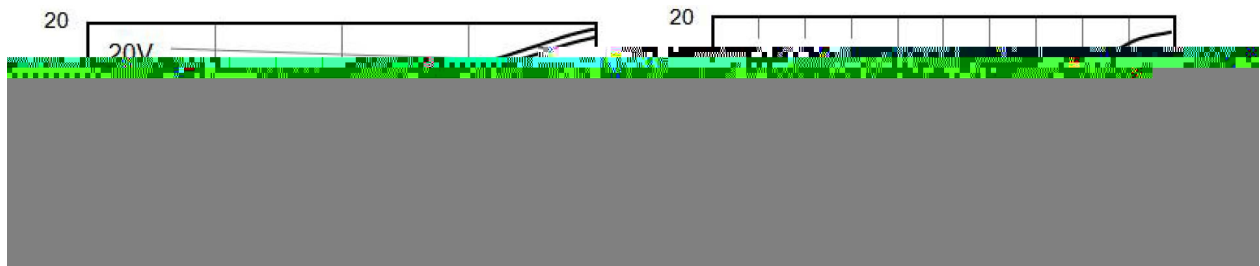


电性能参数 / Electrical Characteristics(Ta=25°C)

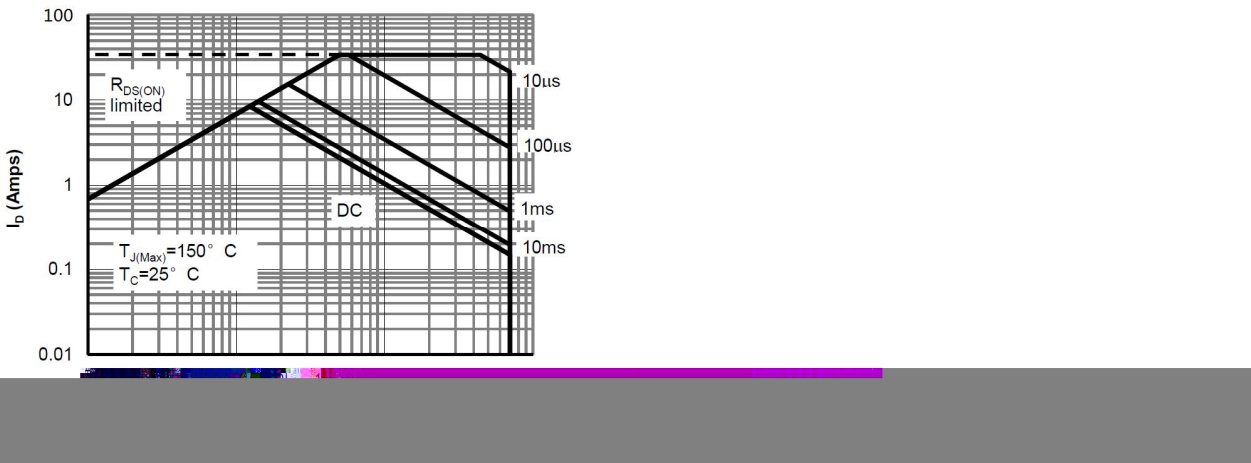
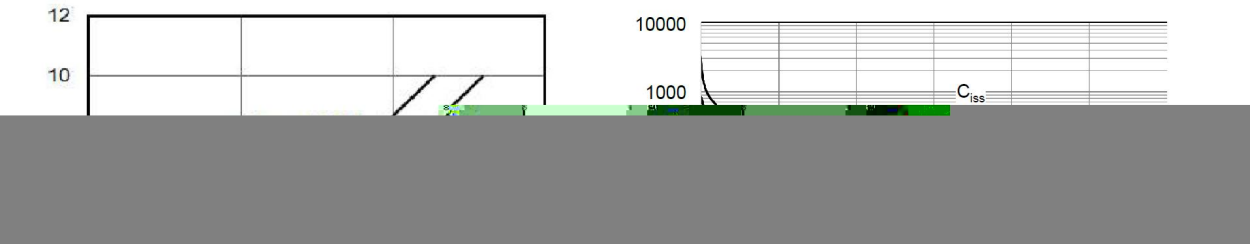
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Diode Forward Current	I_S				8.5	A
Total Gate Charge	Q_g	$V_{DS}=520V \quad I_D=3.5A$ $V_{GS}=10V$		13.3		nC
Gate-Source Charge	Q_{gs}			2.8		nC
Gate-Drain Charge	Q_{gd}			4.7		nC
Reverse recovery time	T_{rr}	$V_R=50V, I_F=3.5A,$ $dI_F/dt=100A/\mu s$		201		ns
Reverse recovery charge	Q_{rr}			1.3		uC



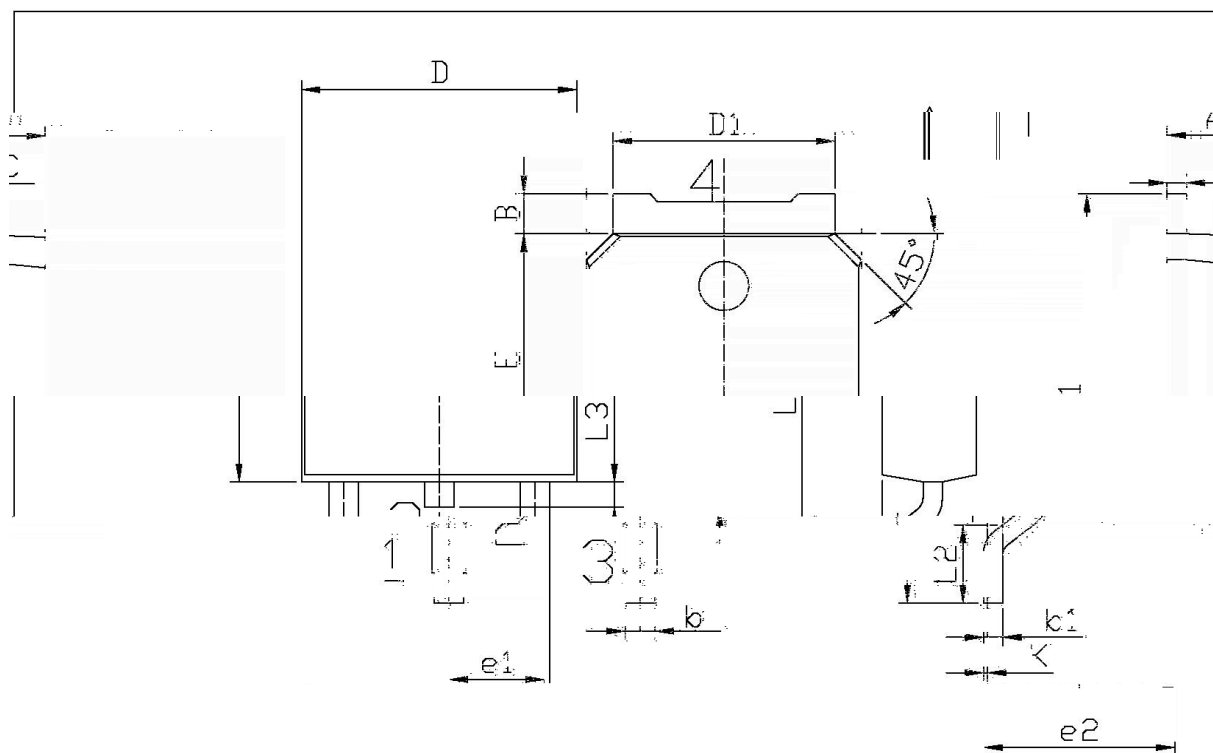
电参数曲线图 / Electrical Characteristic Curve



电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions



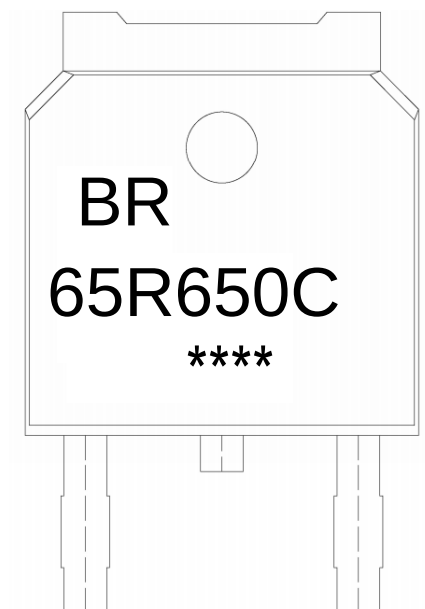
单位: mm

Diameter, In. Millimeters				Diameter, In. Millimeters			
Symbol		Symbol		Symbol		Symbol	
May		May		May		May	
50	2.40	5.95	6.25	0.11 A	2.40	5.95	6.25
65	1.25	2.24	2.34	0.11 B	0.11	0.11	0.11
70	0.40	0.40	0.40	0.11	0.11	0.11	0.11
75	0.45	0.55	0.85	0.11	0.11	0.11	0.11
1.70	2.00	0.45	0.55	0.11	0.11	0.11	0.11
6.75	L3	0.60	0.90	0.11	0.11	0.11	0.11
E 10.0	0.00	0.00	0.00	0.11	0.11	0.11	0.11

TN-252



印章说明 / Marking Instructions



BR

65R650C

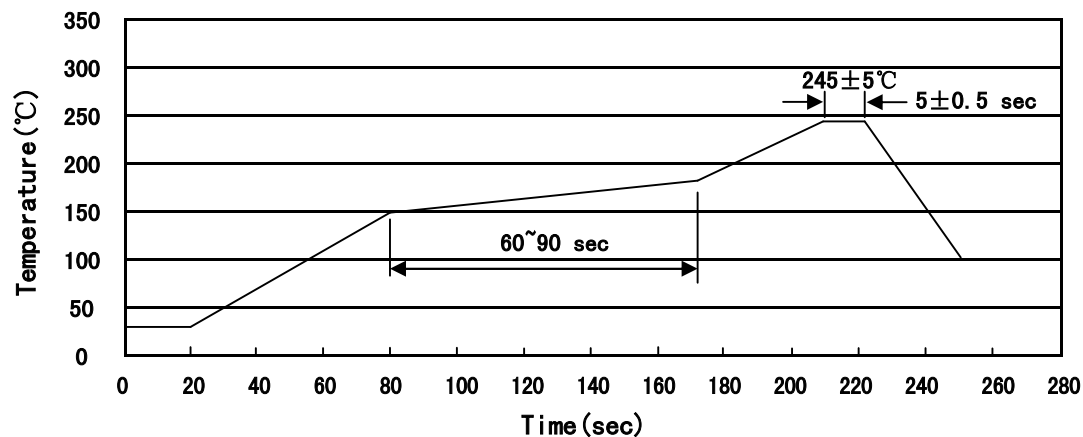
Note:

BR: Company Code

65R650C: Product Type Code

****: 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°C, Time:60~90sec. |
| 2 | 245±5 | | 5±0.5sec; | | 2.Peak Temp.:245±5°C, Duration:5±0.5sec. |
| 3 | | 2 | 10°C/sec. | | 3. Cooling Speed: 2~10°C/sec. |

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

260±5°C

10±1 sec.

Temp.:260±5°C

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
TO-252	2,500	2	5,000	6	30,000	13" ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

使用说明 / Notices