

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

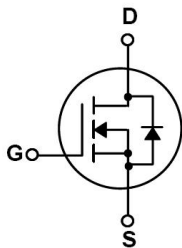
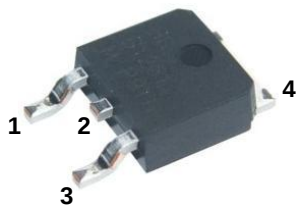
TO-252 N 650V

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	$^{\circ}\text{C/W}$

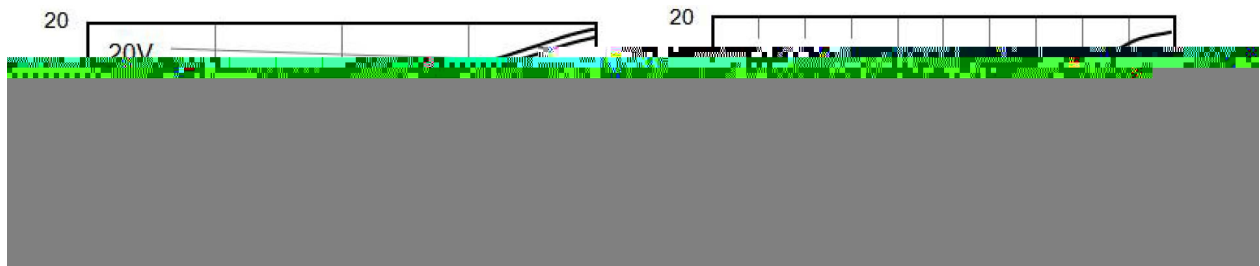
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	650	700		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V$ $V_{GS}=0V$ $T_J=25^{\circ}\text{C}$			1.0	μA
Gate-Body Leakage Current, Forward	I_{GSS}	$V_{GS}=\pm 30V$			± 100	nA
Gate 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)

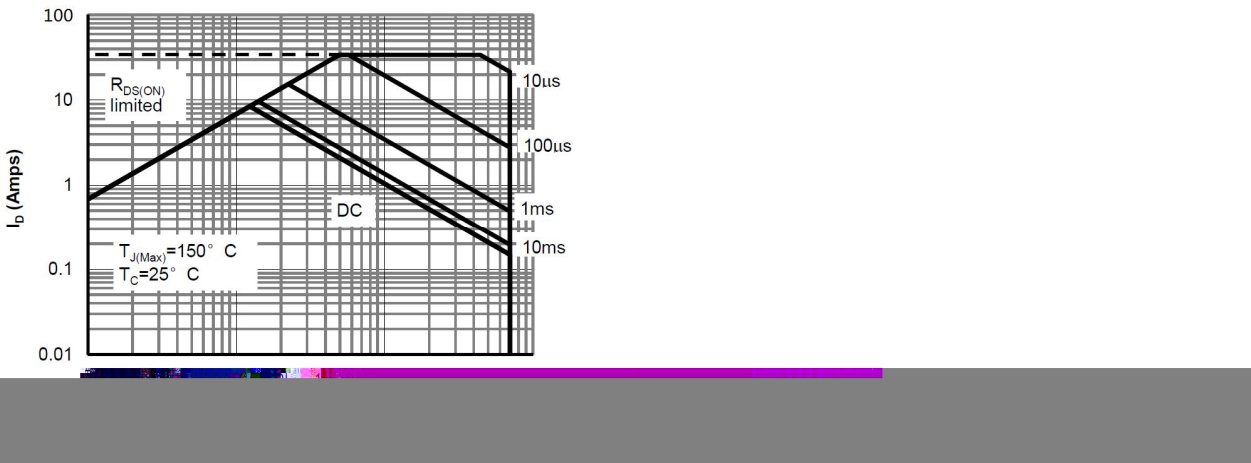
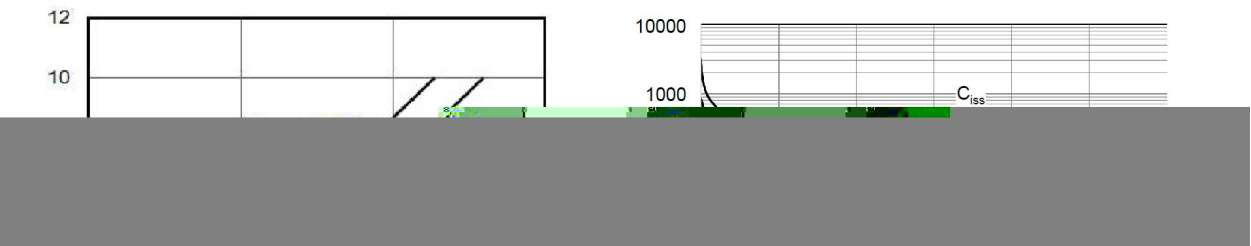
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Diode Forward Current	I_S				8.5	A
Total Gate Charge	Q_g	$V_{DS}=520V \quad I_D=3.5A$ $V_{GS}=10V$		13.3		nC
Gate-Source Charge	Q_{gs}			2.8		nC
Gate-Drain Charge	Q_{gd}			4.7		nC
Reverse recovery time	T_{rr}	$V_R=50V, I_F=3.5A,$ $dI_F/dt=100A/\mu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



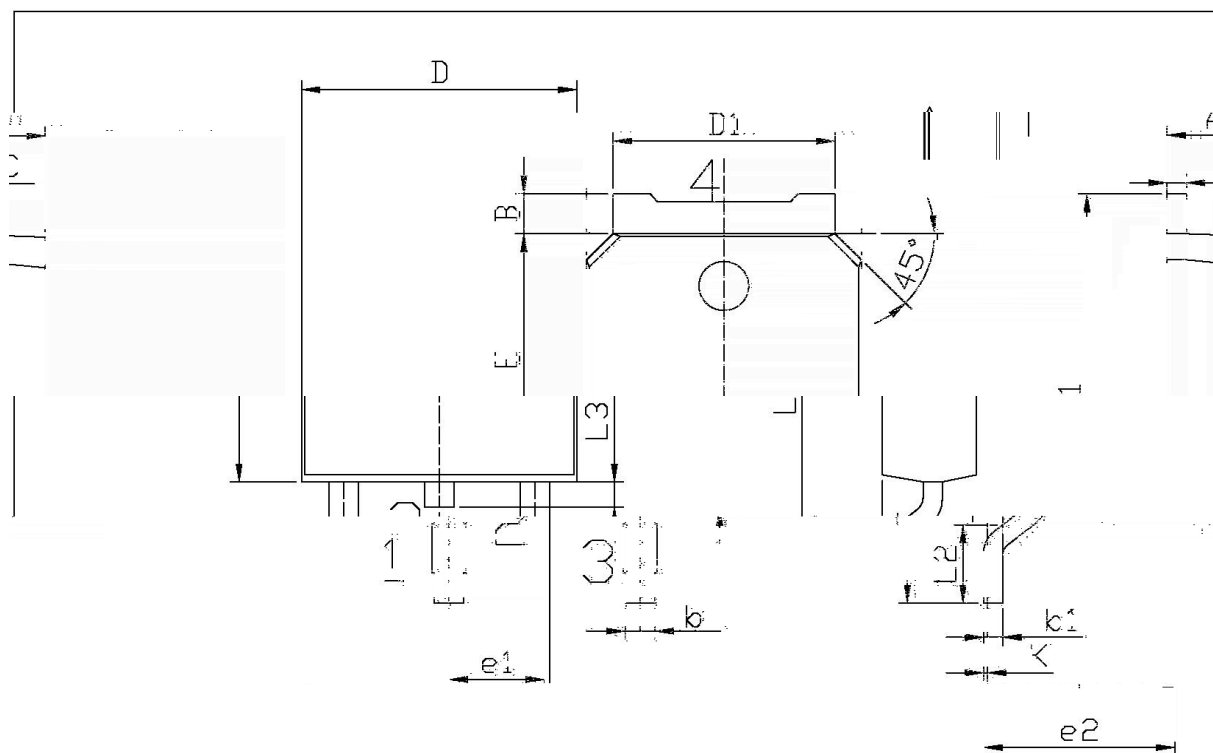
电参数曲线图 / Electrical Characteristic Curve



电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions



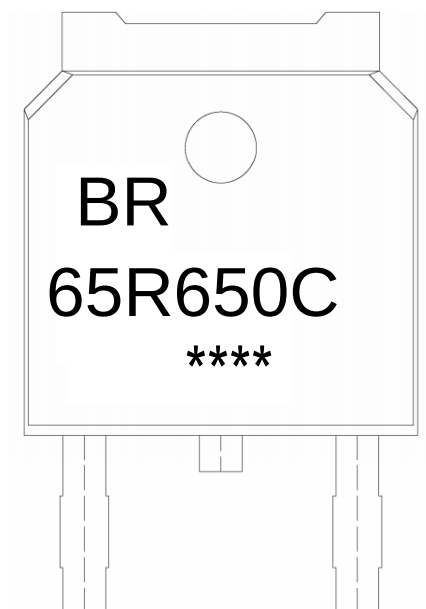
单位: mm

Diameters In Millimeters				Diameters In Millimeters			
Symbol		Symbol		Symbol		Symbol	
May		May		May		May	
50	2.40	50	5.95	50	6.25	50	0.14
65	1.25	65	2.24	65	2.34	65	0.14
75	0.40	75	0.40	75	0.70	75	0.14
51	0.45	51	0.55	51	9.85	51	10.35
1.70	2.00	1.70	0.45	1.70	0.55	1.70	1.2
6.75	L3	6.75	0.60	6.75	0.90	6.75	D
6.75	0.60	6.75	0.60	6.75	0.60	6.75	0.60

TN-252



印章说明 / Marking Instructions



BR

65R650C

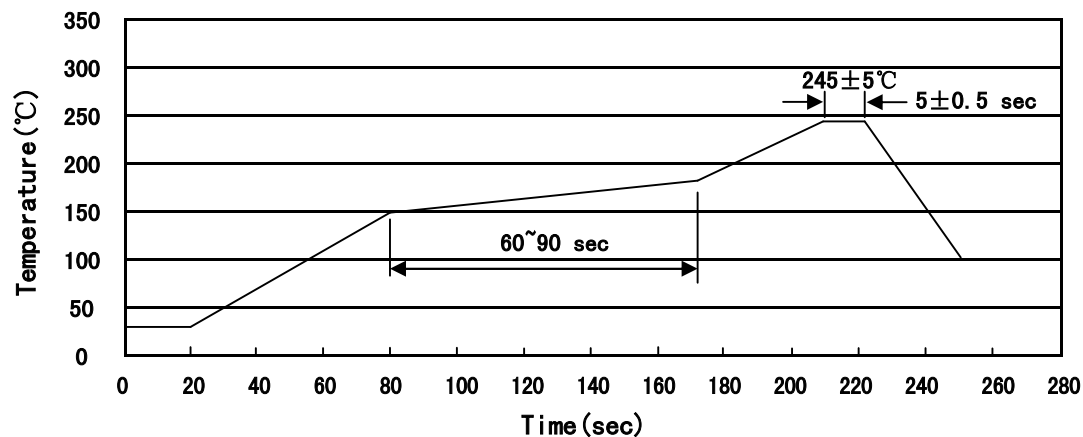
Note:

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