

BRD65R380C

Rev.B May.-2022



DATA SHEET

/ Revised record

A	2022.4.21	ALL	AOS-AOD380A60		
B	2022.5.26	2,3,4,5	YC-RMX65R380SN_ReV1.0		

/ Descriptions

TO-252 N 650V

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

/ Features

$R_{DS(on)}$ C_{rss}

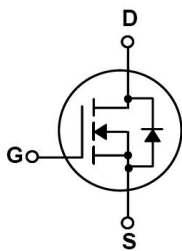
Low $R_{DS(on)}$, low gate charge, low C_{rss} , fast switching, HF Product.

/ 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.

/ Equivalent Circuit



/ Pinning



PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

/ Marking

See Marking Instructions.



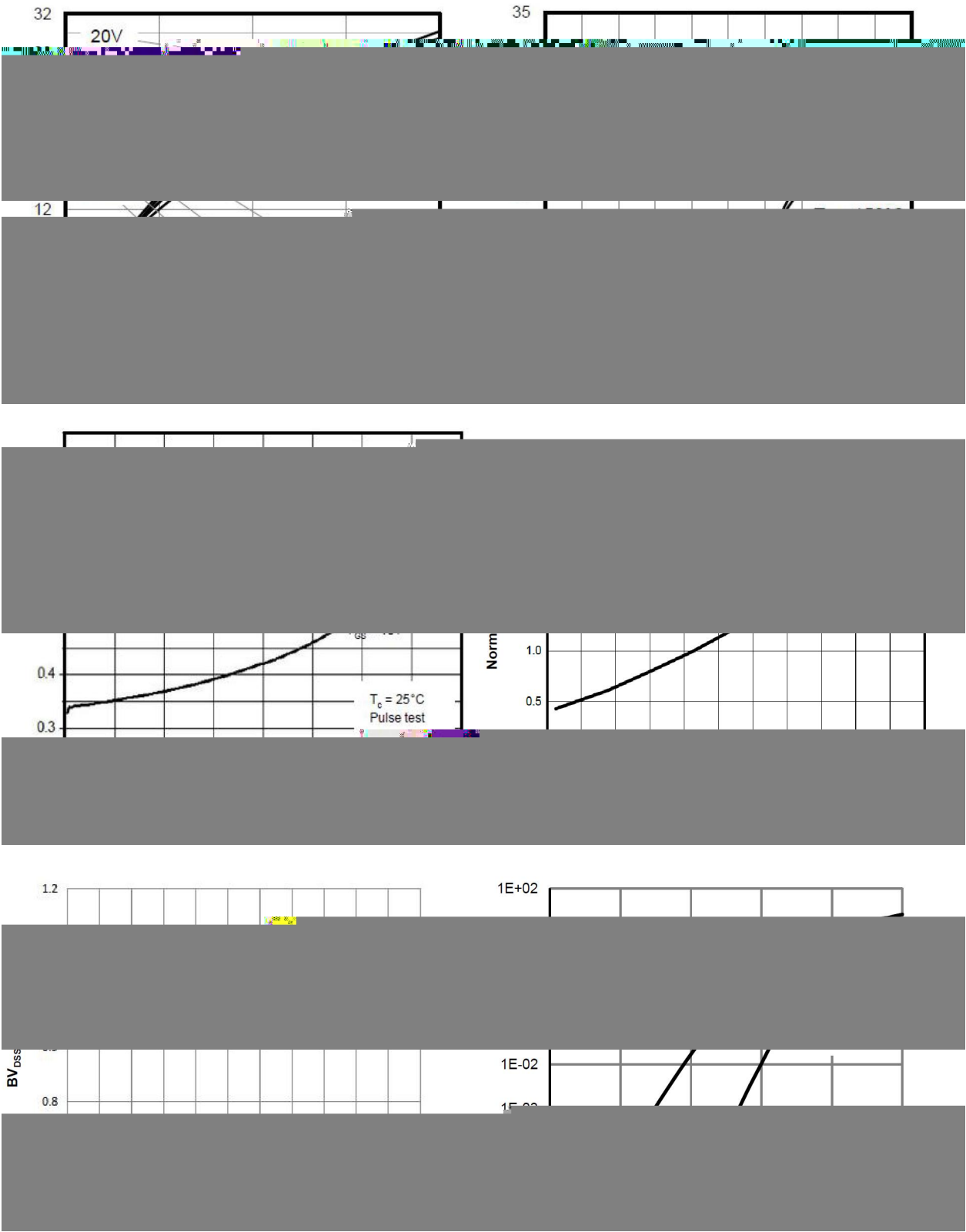
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	650	V
Drain Current	$I_D(T_C=25^{\circ}C)$	11	A
Drain Current - Pulsed	I_{DM}	44	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	277	mJ
Avalanche Current	I_{AS}	8	A
Power Dissipation	$P_D(T_C=25^{\circ}C)$	125	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$
Junction-to-Case	$R_{\theta JC}$	1	$^{\circ}C/W$
Junction-to-Ambient	$R_{\theta JA}$	55	$^{\circ}C/W$

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}	$V_{DS}=650V$ $V_{GS}=0V$ $T_J=25^{\circ}C$			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	3.3	4.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=5.5A$		320	380	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_{SD}=1A$ $T_J=25^{\circ}C$			1.2	V
Gate Resistance	R_g	$V_{GS}=0V$ $f=1.0MHz$		4.1		Ω
Input Capacitance	C_{iss}	$V_{DS}=100V$ $V_{GS}=0V$ $f=1.0MHz$		735		pF
Output Capacitance	C_{oss}			35		pF
Reverse Transfer Capacitance	C_{rss}			0.45		pF

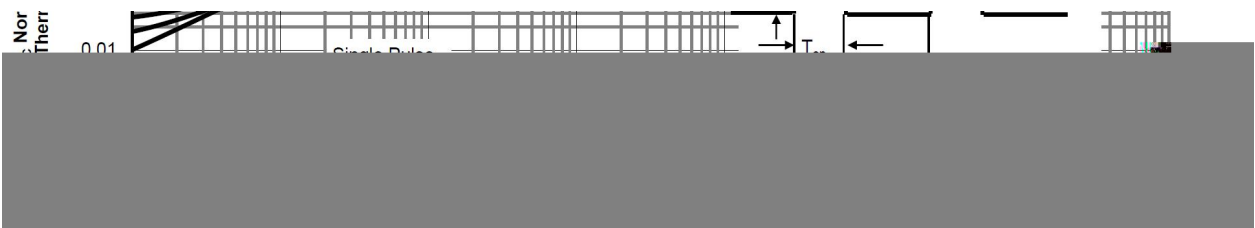
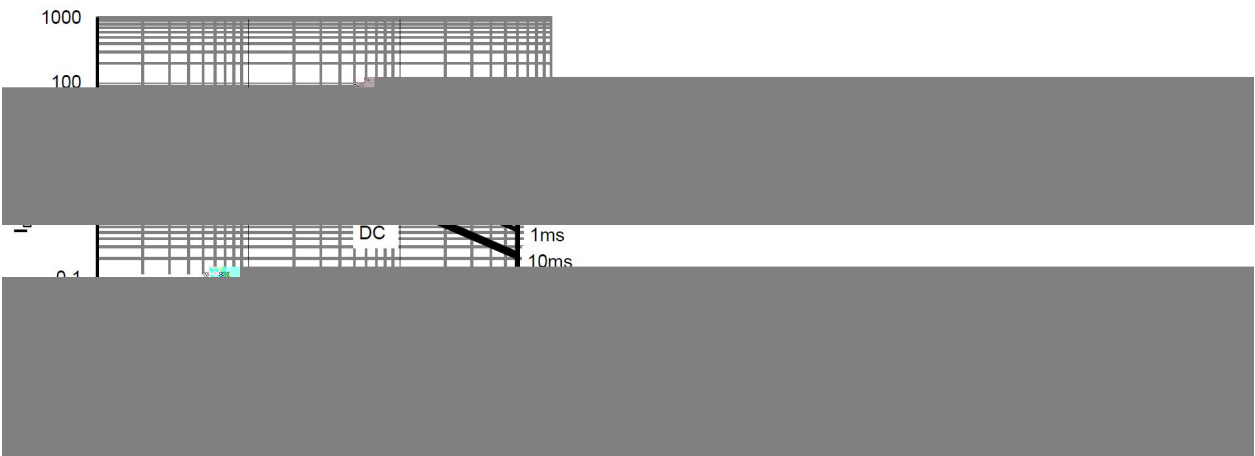
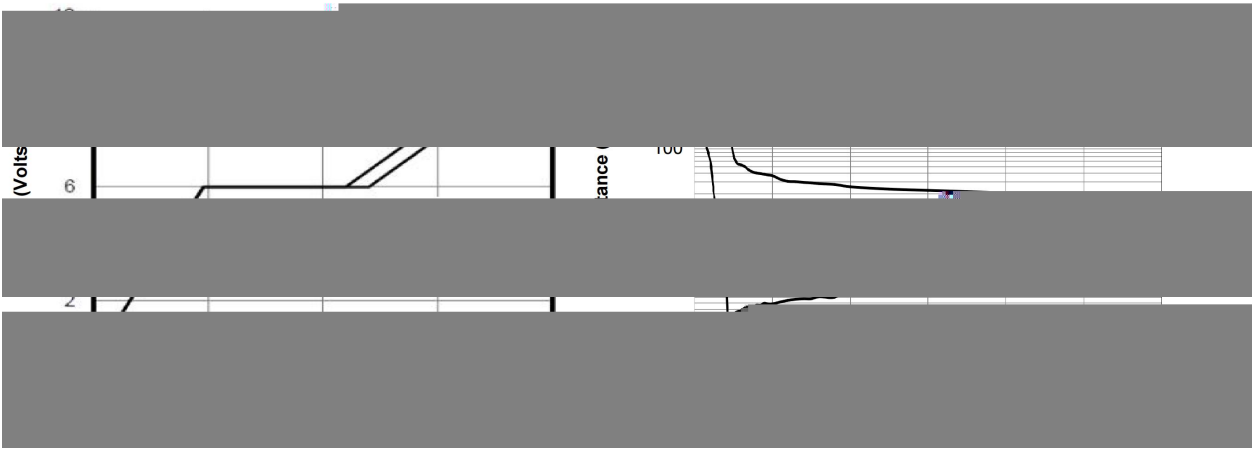
Turn

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Diode Forward Current	I_S				11	A
Total Gate Charge	Q_g	$V_{DS}=480V \quad I_D=5.5A$ $V_{GS}=10V$		19.2		nC
Gate-Source Charge	Q_{gs}			3.1		nC
Gate-Drain Charge	Q_{gd}			8.2		nC
Reverse recovery time	T_{rr}	$V_R=400V, I_F=5.5A,$		310		ns
Reverse recovery charge	Q_{rr}			2.8		uC

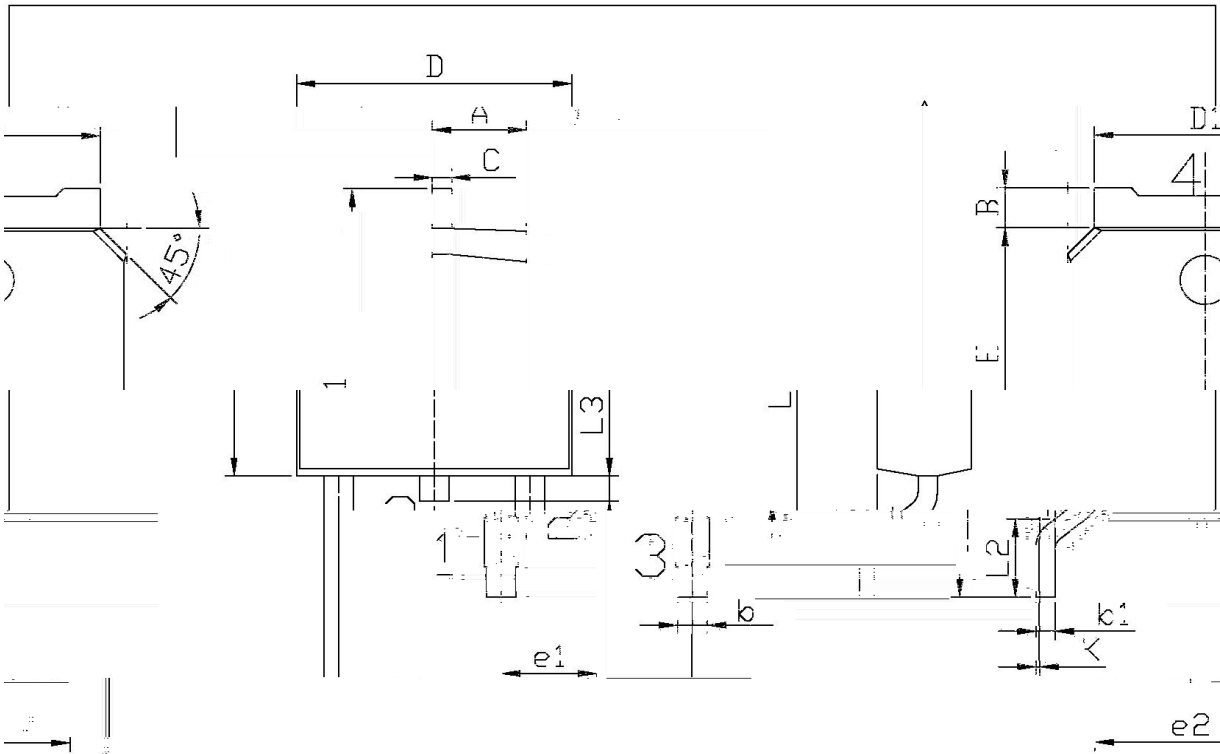
/ Electrical Characteristic Curve



/ Electrical Characteristic Curve



/ Package Dimensions

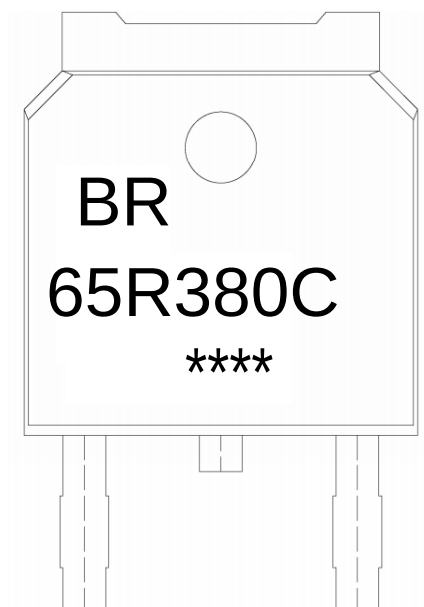


单位: mm

Symbol	Dimension	Symbol	Dimension
A	2.20	B	0.95
B	0.95	C	1.20
C	1.20	D	6.45
D	6.45	E	0.55
E	0.55	L	0.45
L	0.45	L1	0.60
L1	0.60	L2	0.90
L2	0.90	L3	0.30
L3	0.30	b	0.30
b	0.30	k1	0.30
k1	0.30	e1	2.50
e1	2.50	e2	2.50
e2	2.50		

10-252

/ Marking Instructions



BR

65R380C



Note:

BR: Company Code

65R380C: Product Type Code

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

() / 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. |

/ Resistance to Soldering Heat Test Conditions

260±5°C 10±1 sec. Temp.:260±5°C Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (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 盒	Outer Box 箱
TO-252	2,500	2	5,000	6	30,000	13" ×16	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (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			