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84 64.634 TD [(A)]TJ ET 2022 4.280. 0 0 0 sc 0 0 0 ALDL 16.787 40c 0 0 r 7 10.56 0 0 Tm3 SC 0 Tr5 0 0 0 sc 0 0 00 15.284 64.634 T

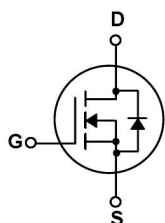
/ Descriptions

TO-220F N 650V

N-CHANNEL 650V Super-Junction Power MOSFET in a TO-220F Plastic Package.

/ Features $R_{DS(on)} \times Q_g$ 100% ROHSVery low $R_{DS(on)} \times Q_g$, 100% avalanche tested, RoHS compliant.**/ Applications**

For switch mode power supply, uninterruptible power supply, power factor correction.

/ Equivalent Circuit**/ Pinning**

PIN1 G

PIN 2 D

PIN 3 S

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	650	V
Drain Current	$I_D(T_c=25^{\circ}\text{C})$	14	A
Drain Current - Pulsed	I_{DM}	56	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	433	mJ
Avalanche Current	I_{AS}	10	A
Power Dissipation	$P_D(T_c=25^{\circ}\text{C})$	30	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$
Junction-to-Case	$R_{\theta JC}$	4.2	$^{\circ}\text{C/W}$
Junction-to-Ambient	$R_{\theta JA}$	65	$^{\circ}\text{C/W}$

/ Electrical Characteristics(Ta=25)

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	3.3	4.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=5.5A$		235	280	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_{SD}=1A$ $T_J=25^{\circ}\text{C}$			1.2	V
Gate Resistance	R_g	$V_{GS}=0V$ $f=1.0\text{MHz}$		3.7		Ω
Input Capacitance	C_{iss}	$V_{DS}=100V$ $V_{GS}=0V$ $f=1.0\text{MHz}$		995		pF
Output Capacitance	C_{oss}			50		pF
Reverse Transfer Capacitance	C_{rss}			0.87		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=400V$ $I_D=7.5A$ $R_G=25\Omega$ $V_{GS}=10V$		20		ns
Turn-On Rise Time	t_r			40		ns
Turn-Off Delay Time	$t_{d(off)}$			95		ns
Turn-Off Fall Time	t_f			43		ns

BRF65R280C

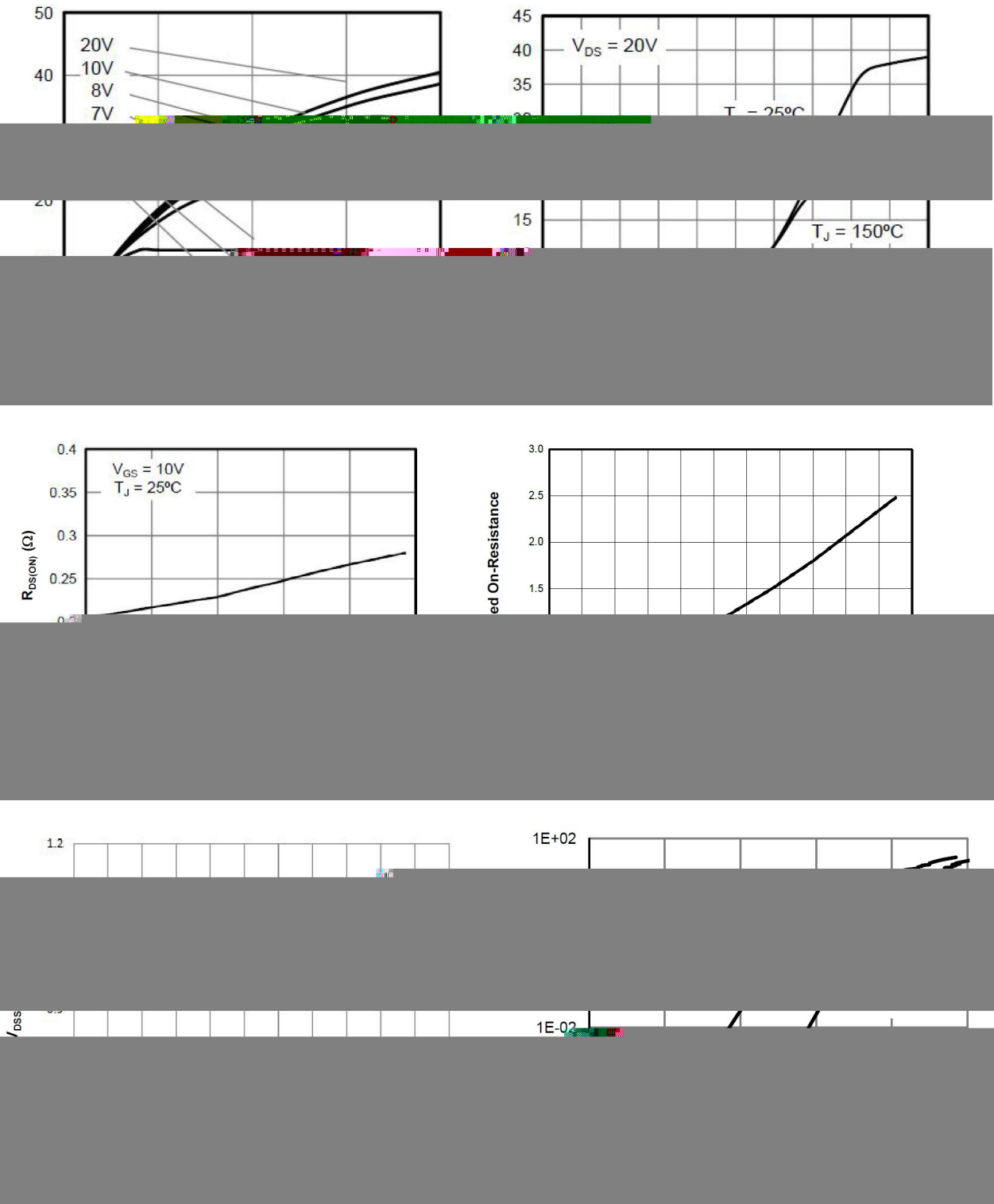
Rev.B May.-2022



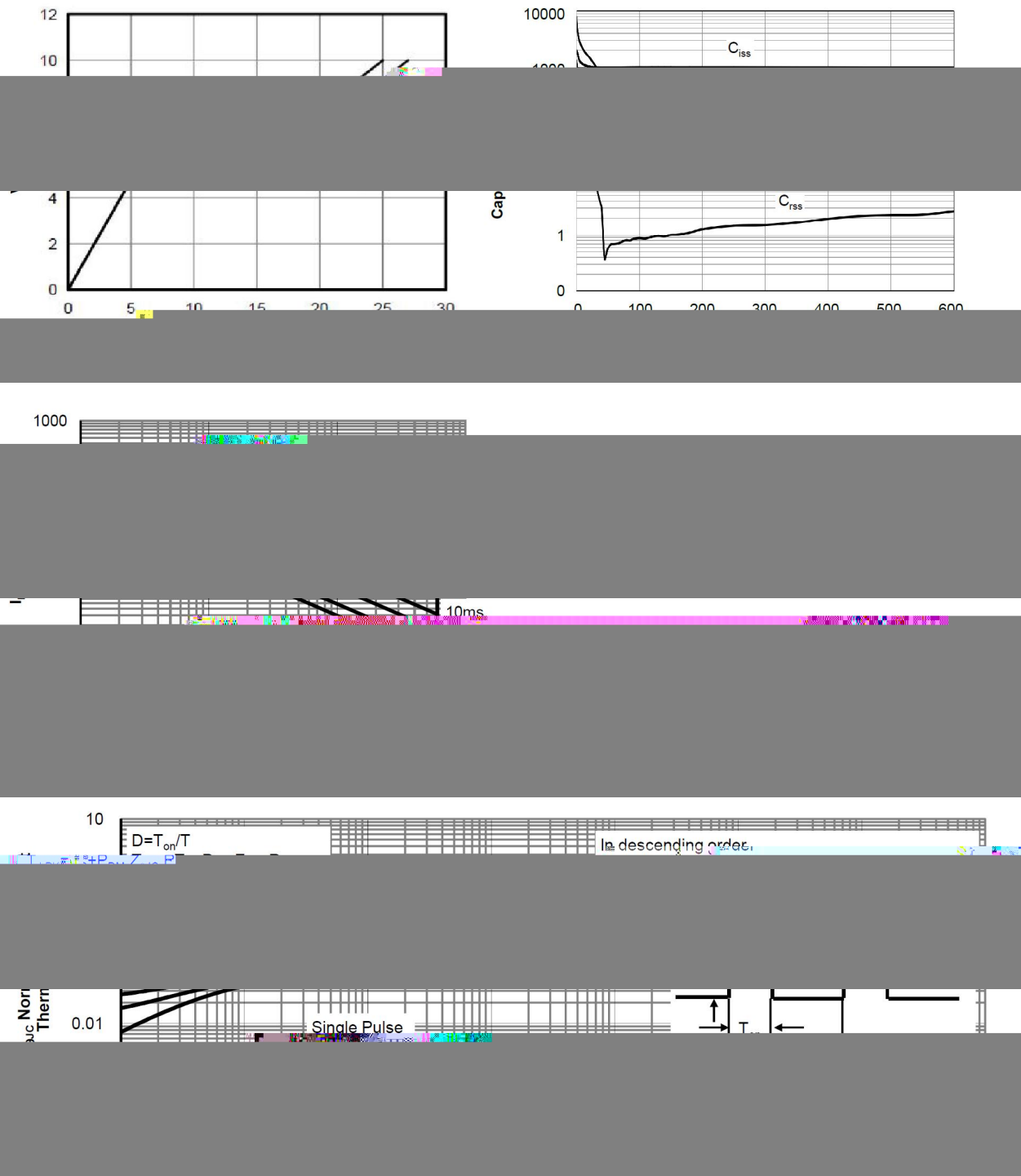
DATA SHEET

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous						

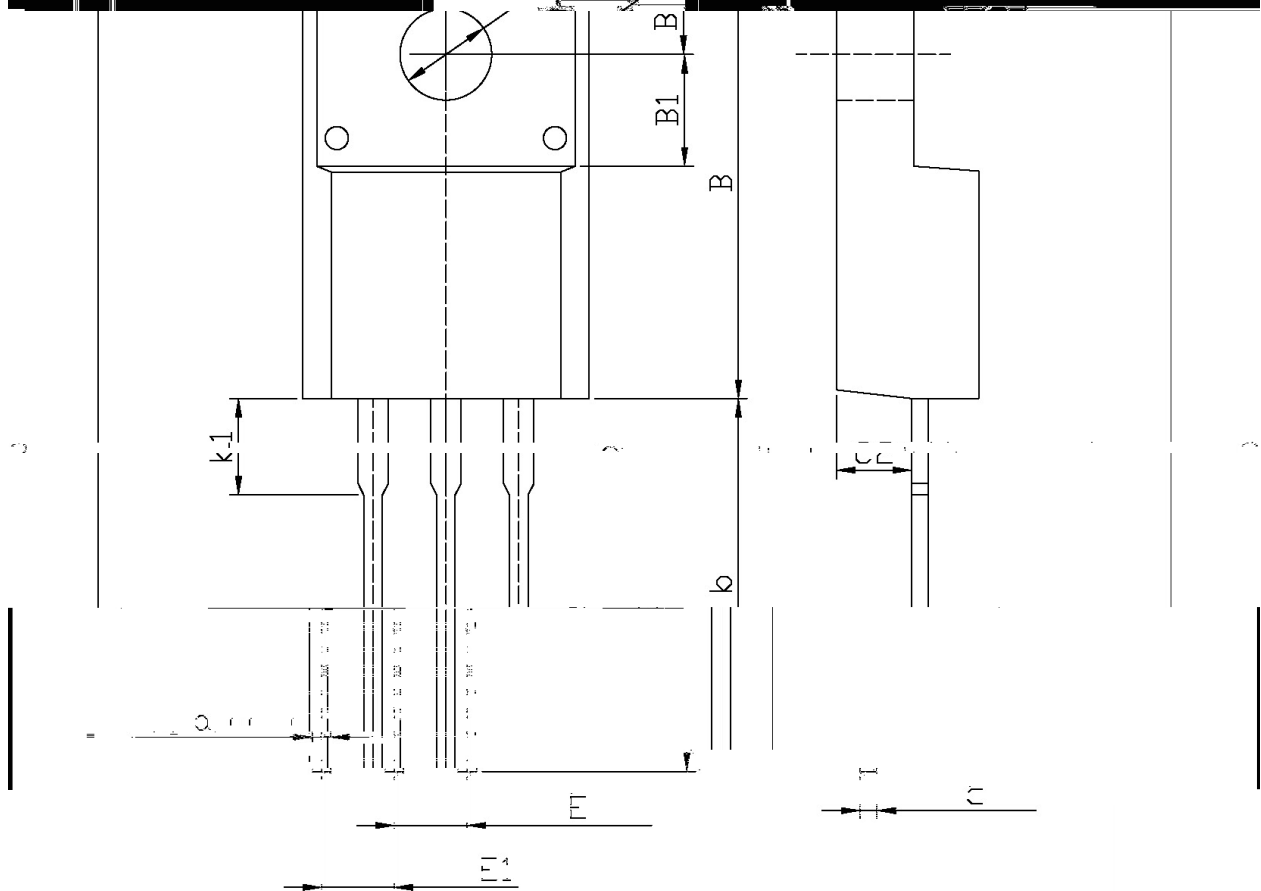
/ Electrical Characteristic Curve



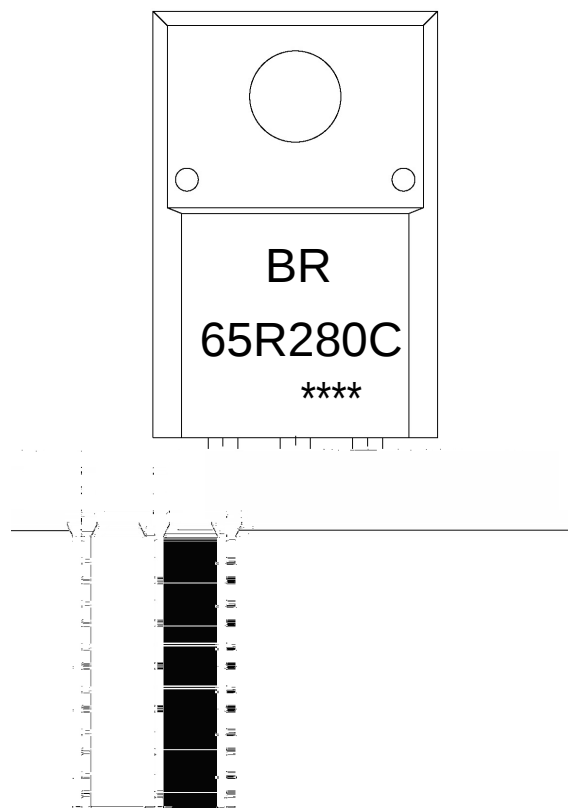
/ Electrical Characteristic Curve



/ Package Dimensions



Dimensions In Millimeters				Dimensions In Millimeters			
Symbol		Min	Max	Symbol		Min	Max
A	0.75	9.7	10.3	A	0.75	9.7	10.3
B1	3.8	4.0	2.89	B1	3.8	4.0	2.89
B2	2.9	3.1	2.5	B2	2.9	3.1	2.5
R	3.0	3.4	2.5	R	3.0	3.4	2.5
b	2.5	3.3	0.5	b	2.5	3.3	0.5

/ Marking Instructions

说明：

BR： 为公司代码

65R280C： 为型号代码

****： 为生产批号代码，随生产批号变化

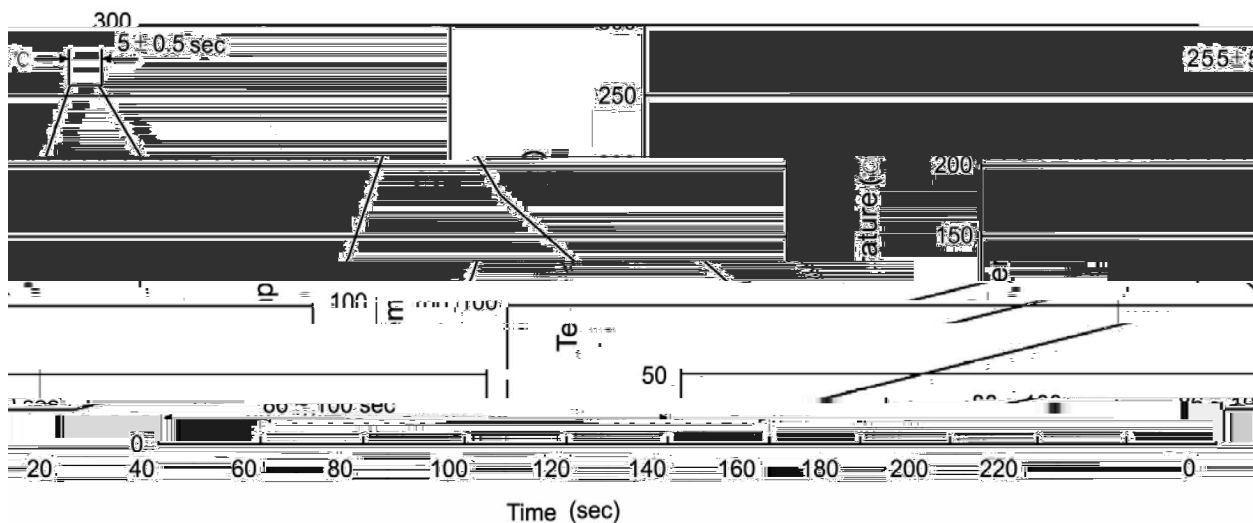
Note:

BR: Company Code

65R280C: Product Type

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

() / Temperature Profile for Dip Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 255±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:25~150°C, Time:60~90sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

/ Resistance to Soldering Heat Test Conditions

温度：270±5°C

时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

/ Packaging SPEC.

散件包装 / BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag 袋	Inner Box 盒	Outer Box 箱