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/ Descriptions

TO-220F N 650V

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

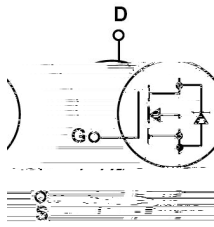
/ Features

 $R_{DS(on)} \times Q_g$ 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

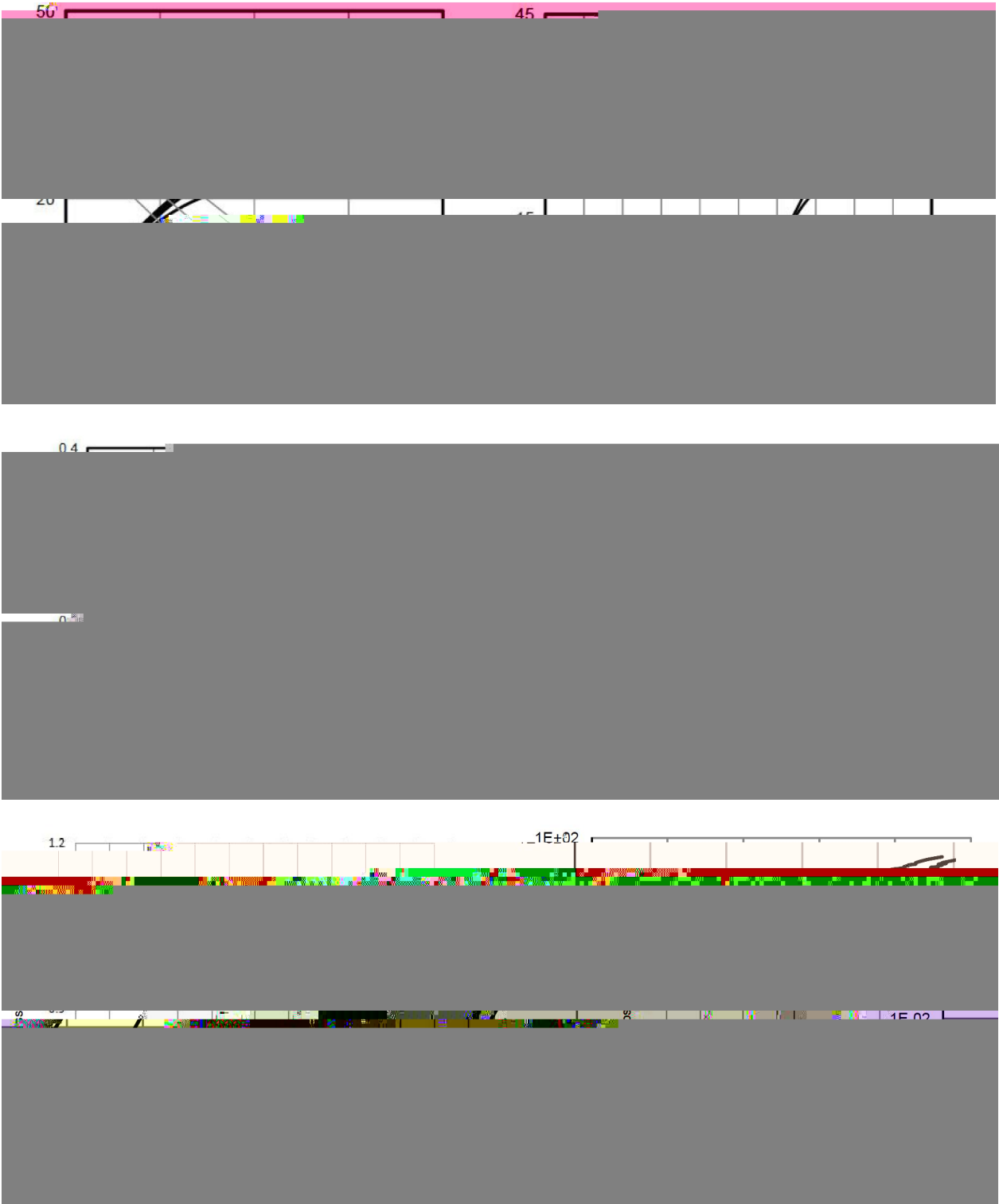
See Marking Instructions.

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	
Junction-to-Case	$R_{\theta JC}$	4.2	$^{\circ}\text{W}$
Junction-to-Ambient	$R_{\theta JA}$	65	$^{\circ}\text{W}$

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	3.3	4.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=5.5A$		235	280	m Ω

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous						

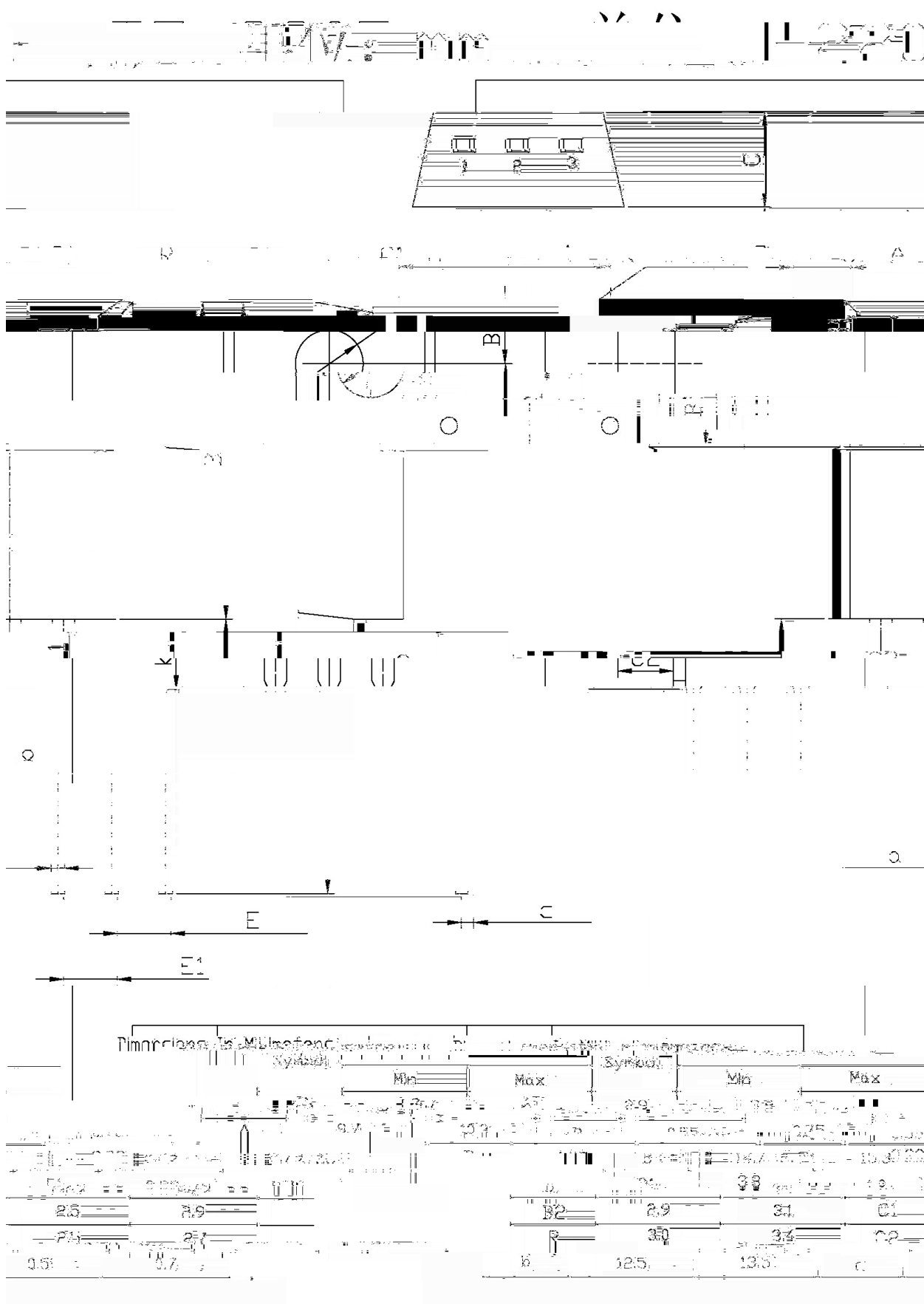
/ Electrical Characteristic Curve



BRF65R280C

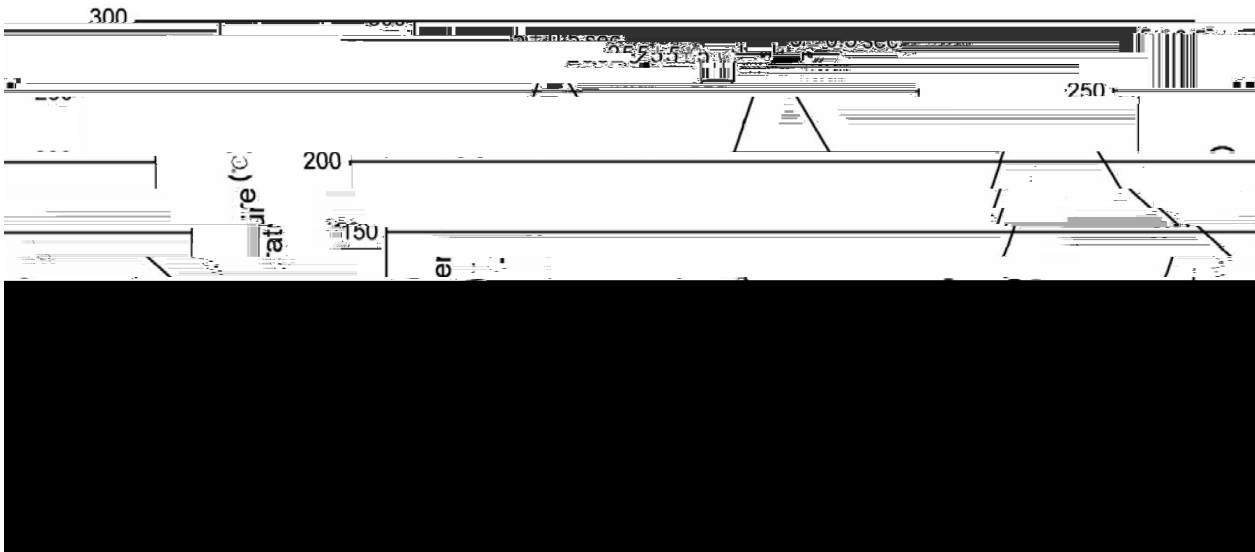
Rev.B May.-

/ Package Dimensions



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

R



Note:

- 1

25 150₀

60 90sec;

1.Preheating:25~150°C, Time:60~90sec.
- 2

255±5₀

5±0.5sec;

2.Peak Temp.:255±5°C, Duration:5±0.5sec.
- 3

2 10°C/sec.

3. Cooling Speed: 2~10°C/sec.

/ Resistance to Soldering Heat Test Conditions

270±5°C

10±1 sec.

Temp.:270±5

Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量	Dimension 包装尺寸 (unit: mm ³)	±
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