TO-252 Ł N ڜ 650V ∧ ڍ

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

UGV+rq, ڎ U Ң Fuvv ھ

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

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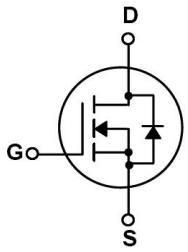
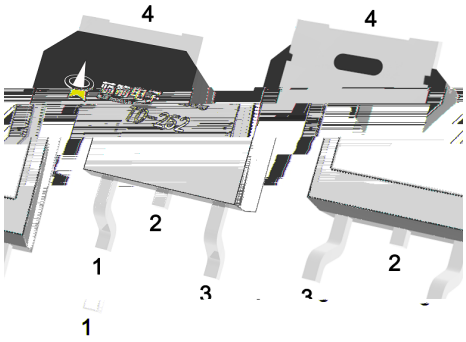
Power factor correction, Switched mode power supplies, Uninterruptible Power Supply.





PIN1 G PIN 2 D PIN 3 S PIN 4 D

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See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	650	V
Drain Current	I_D(Tc=25)	14	A
Drain Current - Pulsed	I_{DM}	56	A
Gate-Source Voltage	V_{GS}	±30	V
Single Pulsed Avalanche Energy	E_{AS}	212	mJ
Avalanche Current	I_{AS}	7	A
Power Dissipation	P_D(Tc=25)	138	W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	
Junction-to-Case	$R_{\theta JC}$	0.9	/W
Junction-to-Ambient	$R_{\theta JA}$	55	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	650			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=650V V_{GS}=0V T_J=25			1.0	μA
Gate-Body Leakage Current, Forward	I_{GSS}	V_{GS}=±30V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2.5	3.0	4.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=7.5A		220	280	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_{SD}=1A T_J=25			1.2	V
Gate Resistance	R_g	V_{GS} = 0V f = 1.0MHz		14		Ω
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		780		pF
Output Capacitance	C_{oss}			1300		pF
Reverse Transfer Capacitance	C_{rss}					

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Diode Forward Current	I_S				14	A
Total Gate Charge	Q_g	V_{DS}=520V I_D=7.5A V_{GS}=10V		23.7		nC
Gate-Source Charge	Q_{gs}			4.8		nC
Gate-Drain Charge	Q_{gd}			2.6		nC
Reverse recovery time	t_{rr}	V_R=400 V, I_F=7.5A, dI_F/dt=100 A/μs		229		ns
Reverse recovery charge	Q_{rr}			2.4		uC

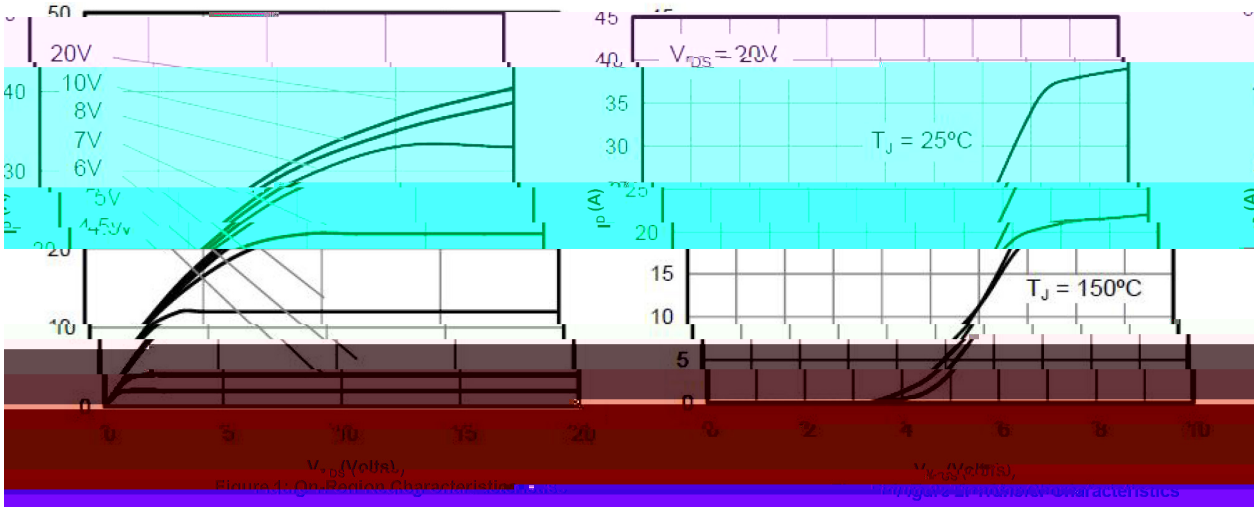
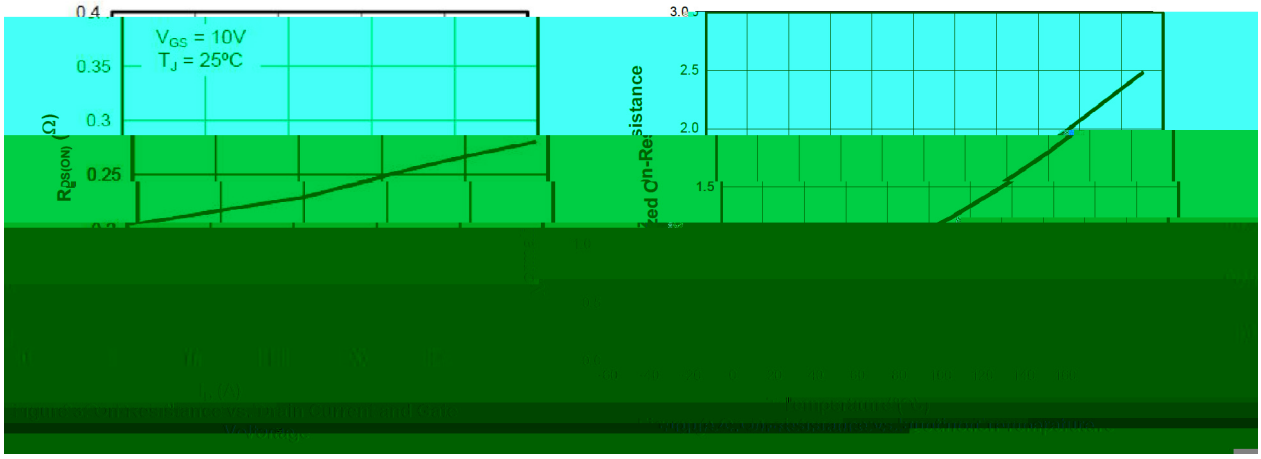


Figure 4: On-Region Characteristics



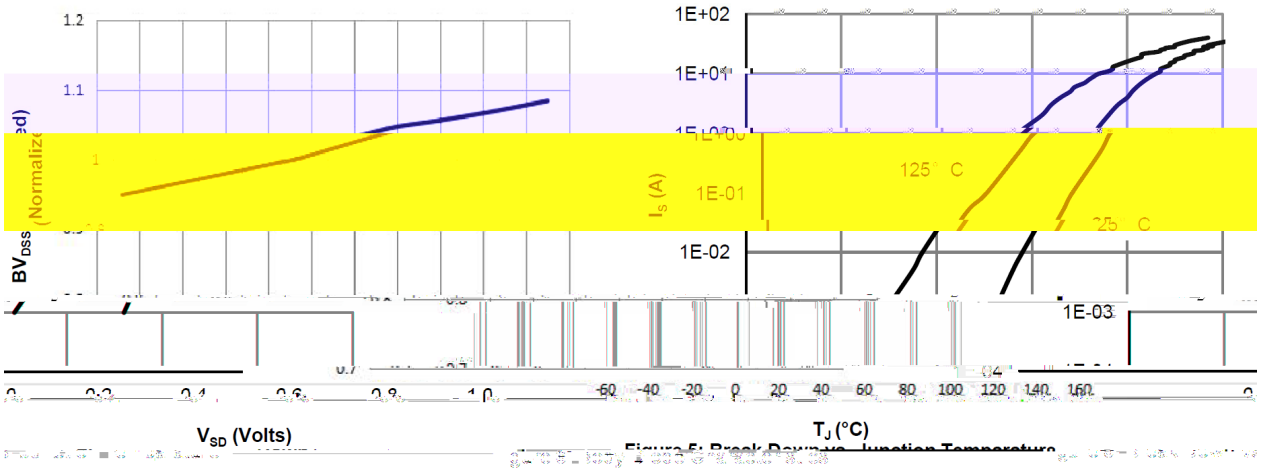


Figure 5: Break Down vs. Junction Temperature

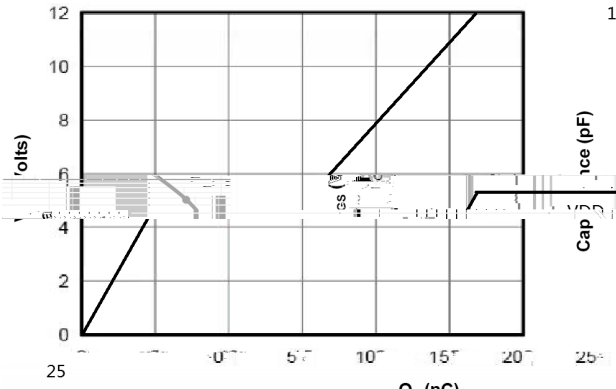


Figure 7: Gate-Charge Characteristics

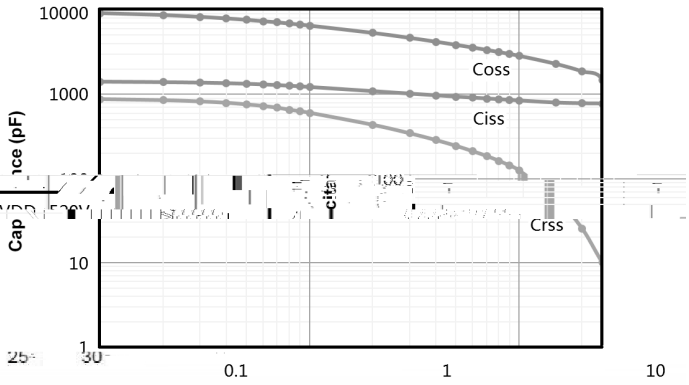


Figure 8: Capacitance Characteristics

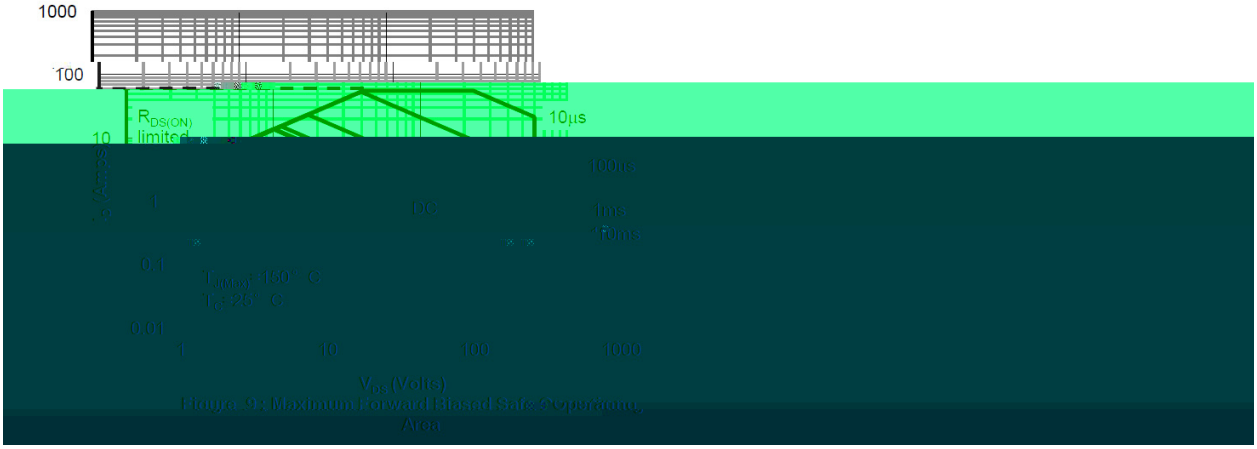


Figure 9: Maximum Forward Biased Safe Operating Area

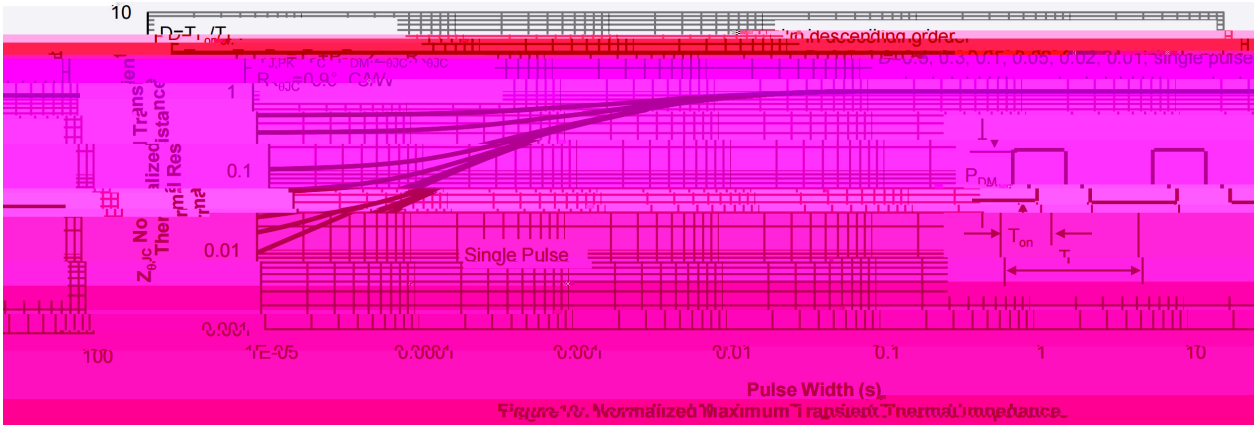
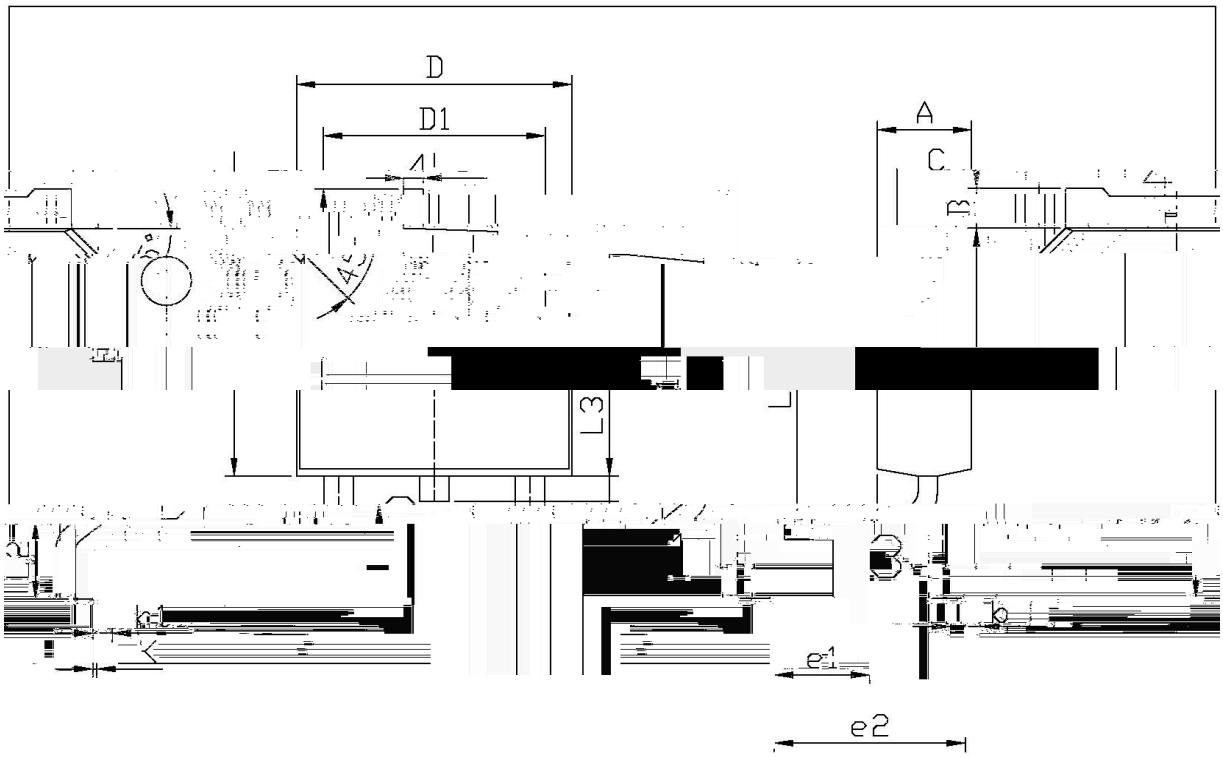


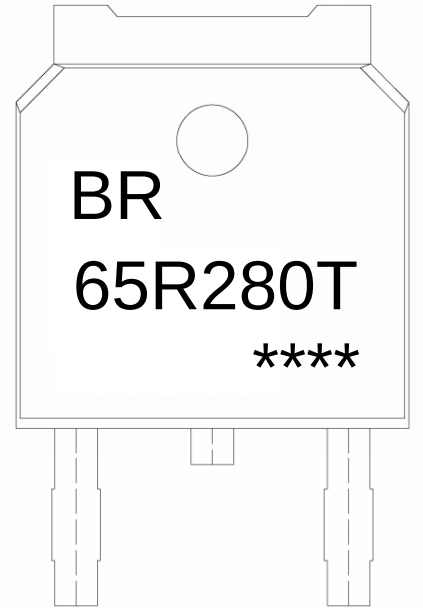
Figure 10: Normalized Maximum Transient Thermal Impedance



单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max.		Min	Max
L	5.95	6.25	A	2.20	2.40
e1	2.24	2.34	B	0.95	1.25
c	0.45	0.55	L1	9.85	10.35
K	0.00	0.10	D	6.45	6.75

TO-252



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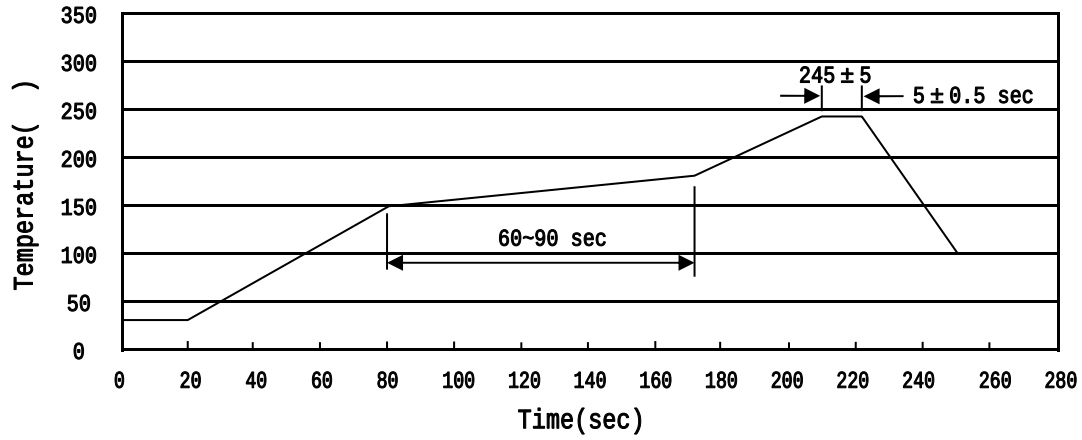
Note:

BR:	Company Code
65R280T:	Product Type Code
****:	Lot No. Code, code change with Lot No

Temperature Profile for IR Reflow Soldering(Pb-Free)



ب	Note:
1 أ 150 180 ژ 60 90sec;	1.Preheating:150~180 , Time:60~90sec.
2 245±5 ژ ٨ 5±0.5sec;	2.Peak Temp.:245±5 , Duration:5±0.5sec.
3 ھ 2 10 /sec.	3. Cooling Speed: 2~10 /sec.

260±5 ژ 10±1 sec. Temp.:260±5 Time:10±1 sec

Ь / REEL

Package Type	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13 ×16	360×360×50	380×335×366

Ь / TUBE

Package Type	Units					Dimension		(unit mm³)
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	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