

Rev.A Apr.-2025

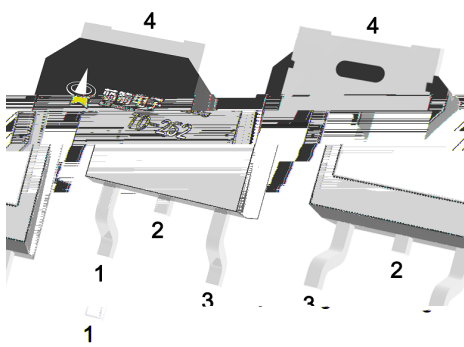
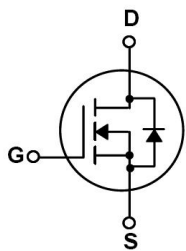
TO-252 N 650V

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

$U_{GS} + r_q$, F_{UV}

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

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



PIN1 G

PIN 2 D

PIN 3 S

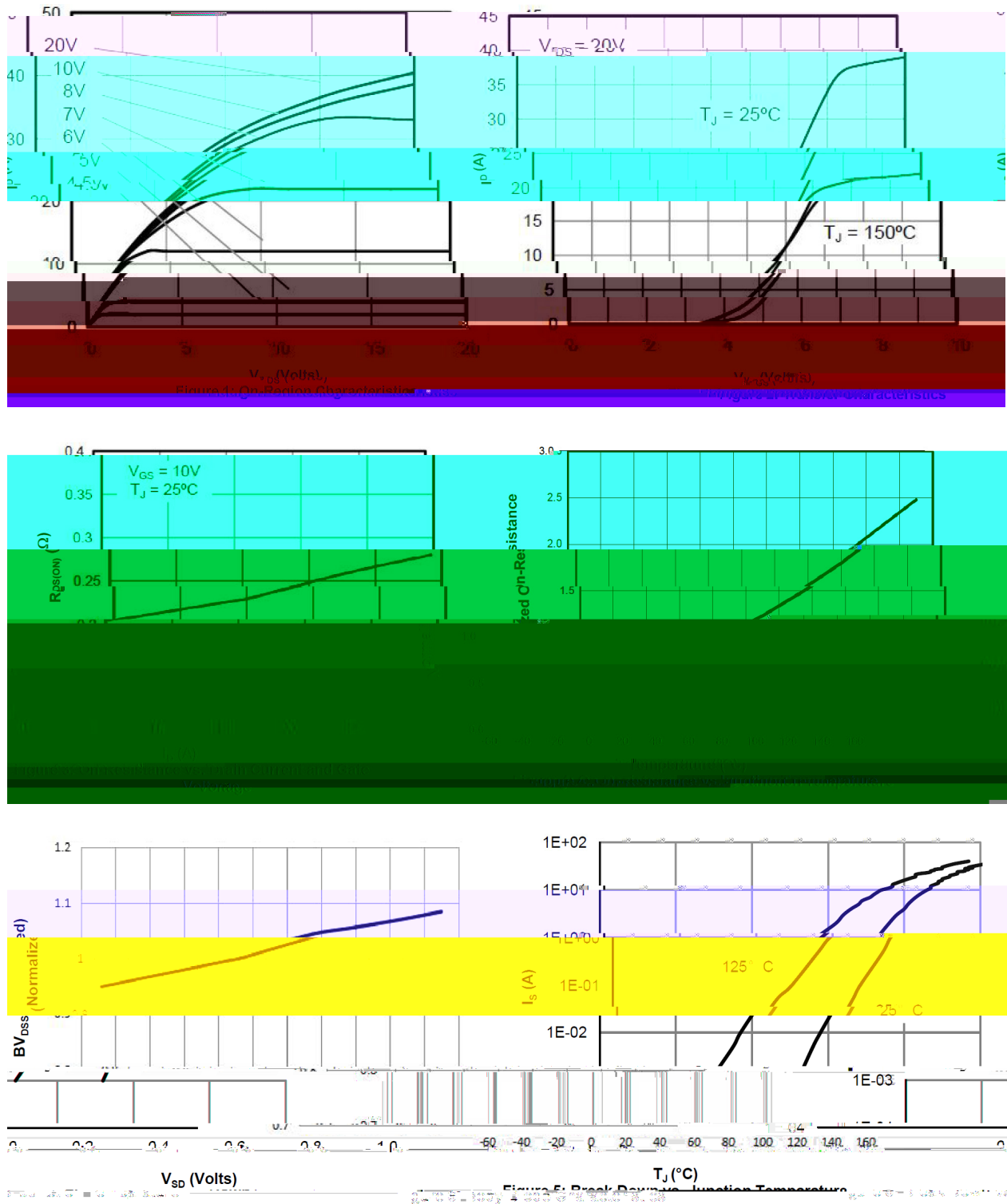
PIN 4 D

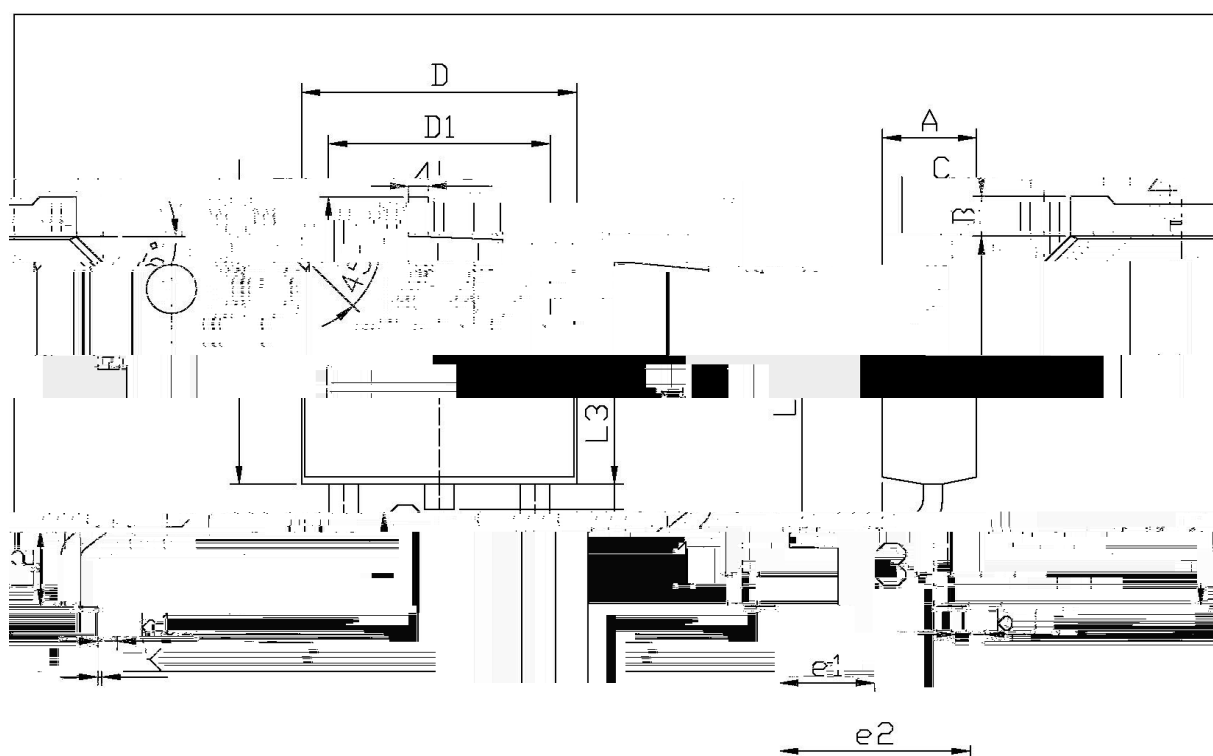
See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	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}	212	mJ
Avalanche Current	I_{AS}	7	A
Power Dissipation	$P_D(T_C=25^\circ\text{C})$	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_{DS}	$V_{GS}=0V$ $I_D=250\mu A$	650			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	3.0	4.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=7.5A$		220	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	$V_{GS}=0V$ $f=1.0\text{MHz}$		14		Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0\text{MHz}$		780		pF
Output Capacitance	C_{oss}			1300		pF
Reverse Transfer Capacitance	C_{rss}					

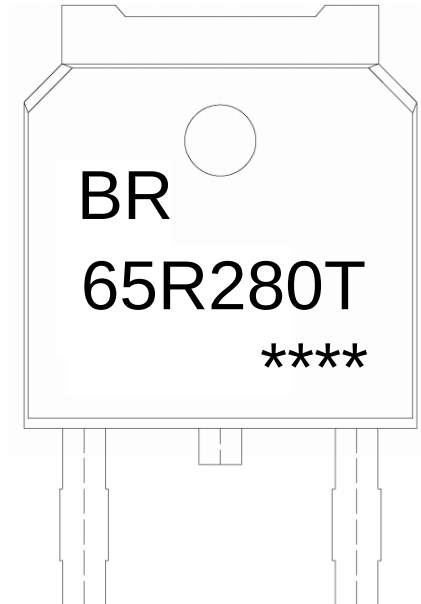
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Diode Forward Current	I_S				14	A
Total Gate Charge	Q_g	$V_{DS}=520V \quad I_D=7.5A$ $V_{GS}=10V$		23.7		nC
Gate-Source Charge	Q_{gs}			4.8		nC
Gate-Drain Charge	Q_{gd}			2.6		nC
Reverse recovery time	t_{rr}	$V_R=400 V, \quad I_F=7.5A,$ $dI_F/dt=100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





单位: mm

Dimensions In Millimeters			Dimensions In Millimeters		
Symbol	Min	Max	Symbol	Min	Max
A	5.95	6.25	B	2.20	2.40
e1	2.24	2.34	C	0.95	1.25
L1	0.55	0.75	D	6.45	6.75
L2	1.70	2.00	e2	5.10	5.50
L3	0.55	0.75			
D	6.45	6.75			
	0.90	1.00			
	0.60	0.70			



BR

98U583W

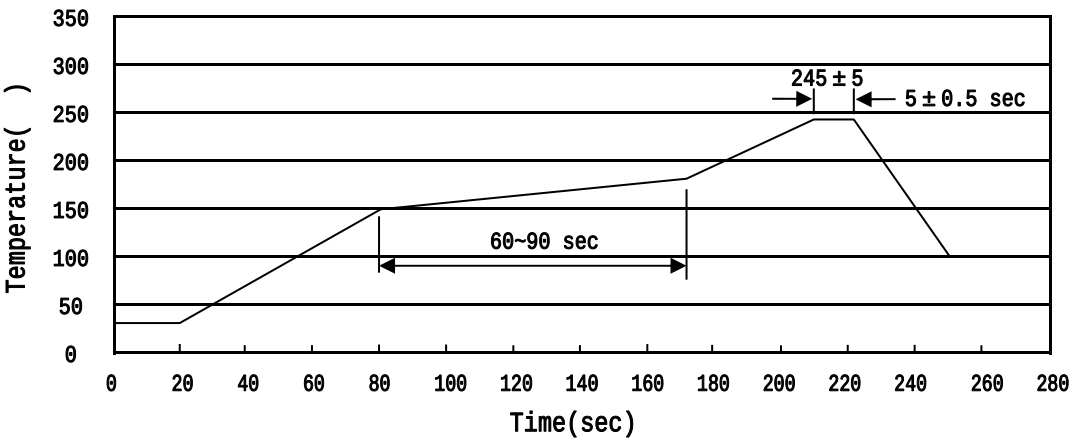
Note:

BR: Company Code

65R280T: 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 , Time:60~90sec.
- 2

245±5

5±0.5sec;

2.Peak Temp.:245±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	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

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	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