/ Descriptions

WR06S Ṃ Ṃ Ŀ ʌ ɹ ɷ ǁ ǜ ɥ ˥ Insulated-Gate Bipolar Transistor in a TO-3P Plastic Package.

/ Features

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Low gate charge,, Low saturation voltage ,Positive temperature coefficient, RoHS product.

/ Applications

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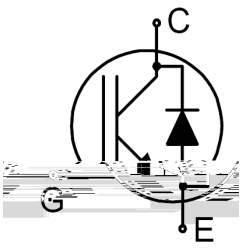
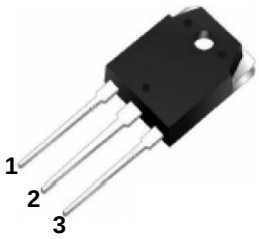
General purpose inverter, Frequency converters, Induction Heating(IH), Uninterrupted Power Supply(UPS).

/ Equivalent Circuit



/ Pinning



PIN1 χ Gate PIN 2 χ Collector PIN 3 χ Emitter

/ h_{FE} Classifications & Marking

ð м ˧ ب ˝ See Marking Instructions.

v ˝Ω Parameter	˧ N Symbol	˝Ω Ö Rating	D Ӈ Unit
Collector-emitter voltage	V_{CES}	1200	V
Gate-emitter voltage	V_{GES}	±20	V
Collector current	I_C	30	A
Collector current@T_C=100		15	A
Collector peak current, T_P limited by T_{JMAX}	I_{CM}	45	A
Diode forward current@T_C=100	I_F	15	A
Diode maximum forward current	I_{FM}	45	A
Power dissipation(T_C=25)	P_D	186	W
Power dissipation(T_c=100)		74	W
Operating junction and storage temperature range	T_J, T_{stg}	-55 150	
Maximum temperature for soldering	T_L	300	
IGBT thermal resistance,junction-case	$R_{th(j-c)}$	0.67	/W
Diode thermal resistance,junction-case	$R_{th(j-C)}$	2.88	/W
Thermal resistance,junction-ambient	$R_{th(j-a)}$	40	/W

v ˝Ω Parameter	˧ N Symbol	⊥ ; ˆ ţ Test Conditions	ω ṇ Ö Min	ƐĂ̂ţPÖ° Unit

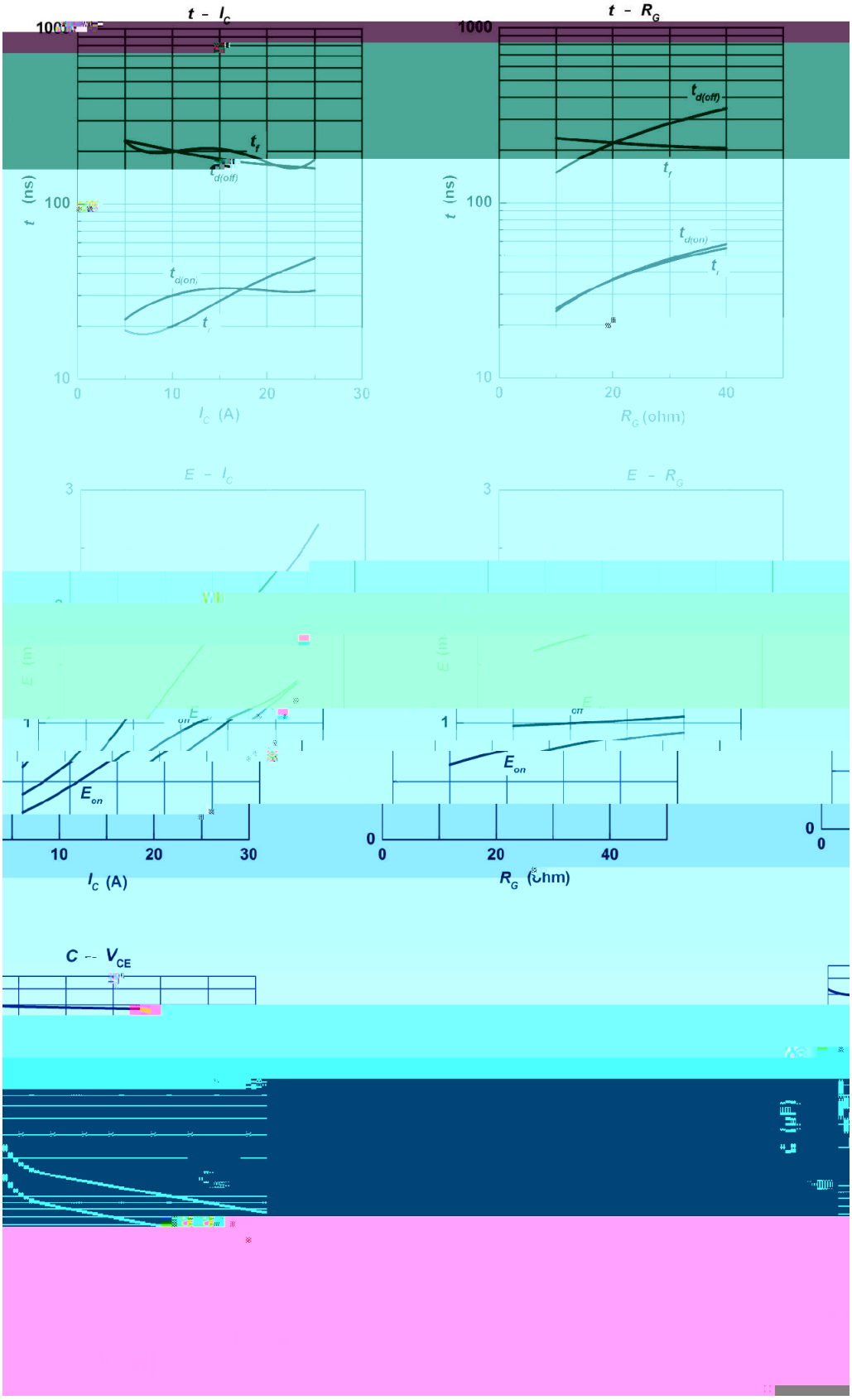
/ Electrical Characteristics(Ta=25)

v Ώ Parameter	ɬ N Symbol	⊥ ⁝ ˣ Ţ Test Conditions	ω ṇ Ö Min	Ɛ ʒ Ö Typ	ω ᶻ Ö Max	D Ɉ Unit
Turn-on delay time	$t_{d(ON)}$	V_{CE}=600V I_C=15A R_G=15Ω V_{GE}=15/0V Inductive Load	-	25	-	ns
Rise time	t_r		-	48	-	
Turn-off delay time	$t_{d(OFF)}$		-	155	-	
Fall time	t_f		-	115	-	
Turn-On Switching Loss	E_{on}		-	0.67	-	mJ
Turn-Off Switching Loss	E_{off}		-	0.45	-	
Total Switching Loss	E_{ts}		-	1.12	-	
Total gate charge	Q_G	V_{CE}=600V I_C=15A V_{GE}=15V	-	130	180	nC
Gate-emitter charge	Q_{G-E}		-	15	22	
Gate-collector charge	Q_{G-C}		-	50	65	
Diode forward voltage	V_F	I_F=15A	-	1.2	2.0	V
Reverse recovery time	Trr	I_F=15A di/dt=200A/μS	-	330	360	ns
Diode Peak Reverse Recovery Current	Irr		-	30	40	A
Reverse recovery charge	Qrr		-	4770	6600	nC

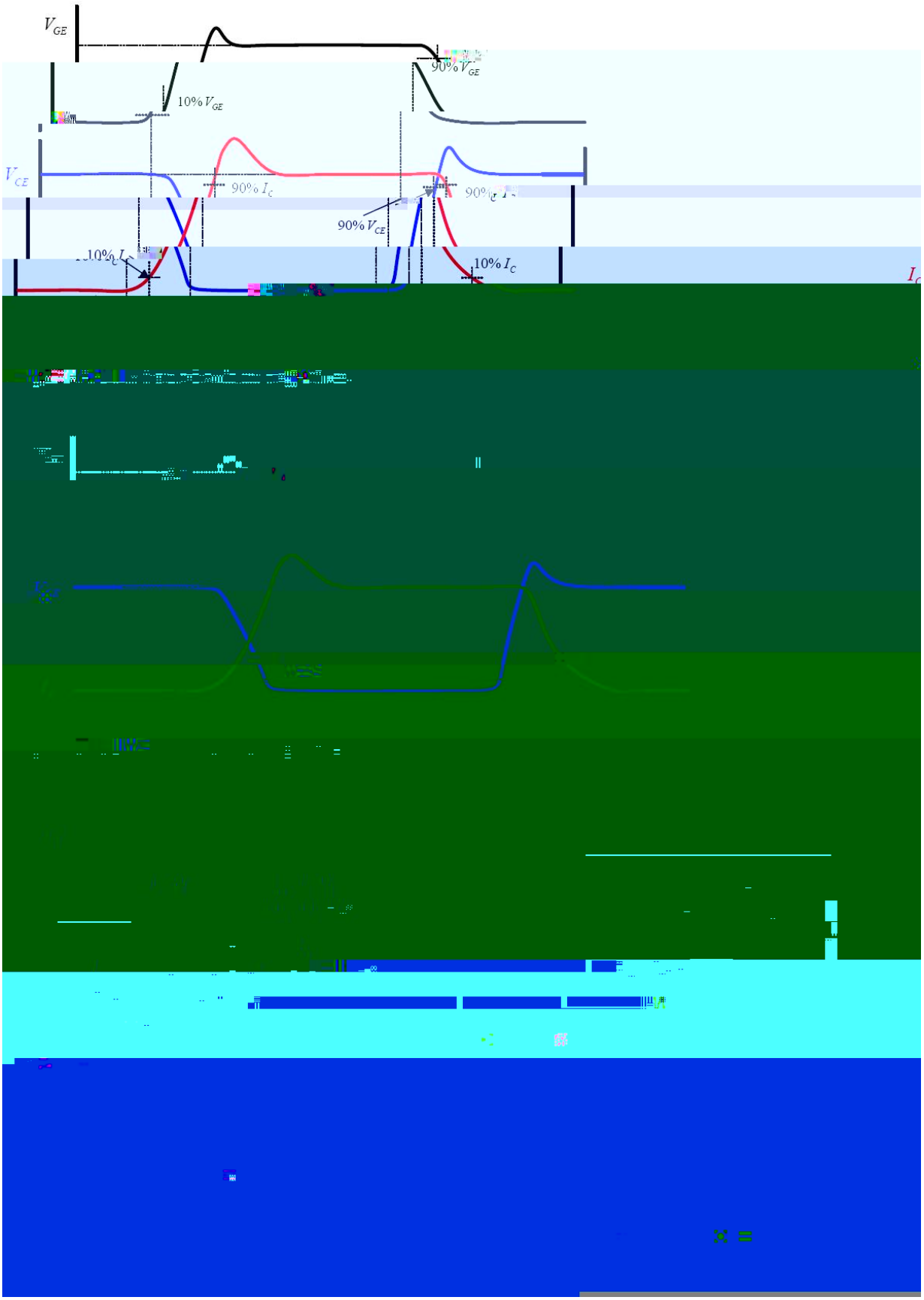
/ Electrical Characteristic Curve



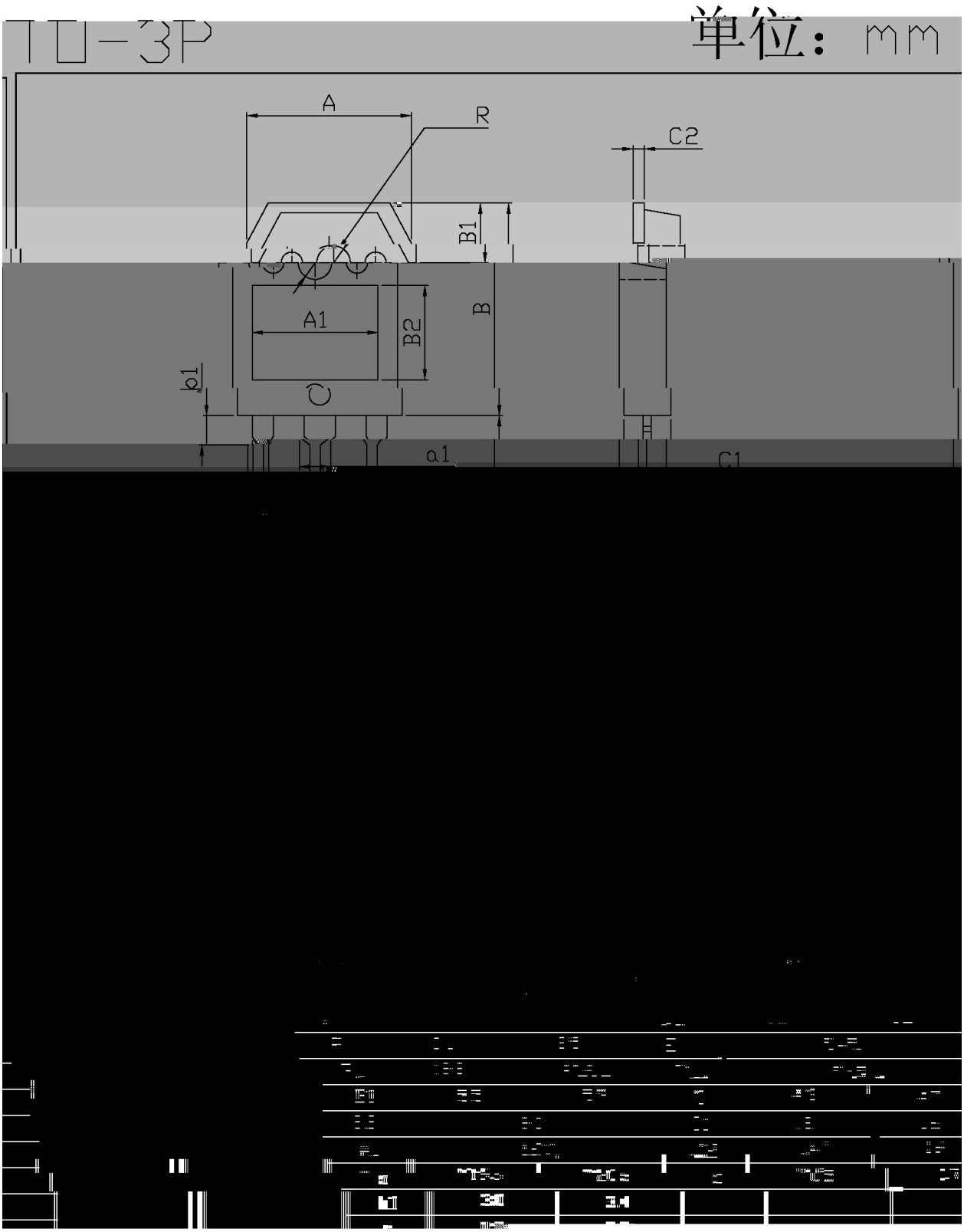
/ Electrical Characteristic Curve



/ Wave curve

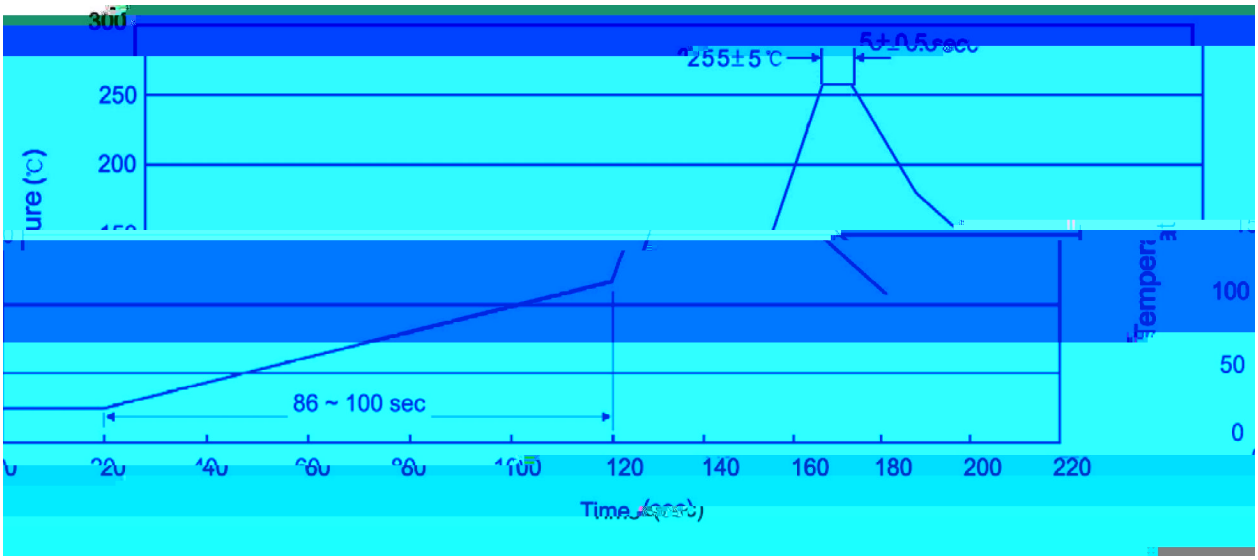


/ Package Dimensions



BRG15N120D

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



ب ˝ χ

1 ǂ ♬ □ ỷ 25 Ḱ 150 ł ı `H ڑ 60 Ḱ 90sec;

2 Š Ö □ ỷ 255 ° 5 ł ı `H ڑ `Y ⺈ ⺮ 5 ° 0.5sec;

3 ì ˙ ⺈ ˛ ɔ ھ ỷ ⺮ 2 Ḱ 10 ł /sec.

Note:

1.Preheating:25~150 ł , Time:60~90sec.

2.Peak Temp.:255 ° 5 ł , Duration:5 ° 0.5sec.

3. Cooling Speed: 2~10 ł /sec.

/ Resistance to Soldering Heat Test Conditions

□ ỷ χ 270 ° 5 ł `H ڑ χ 10 ° 1 sec. Temp.:270±5 Time:10±1 sec

/ Packaging SPEC.

˘ ˥ ˤ ˫ / TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	只 套管	套管 盒	只 盒	盒 箱	只 箱	套管	盒	箱

/ Notices