



SURFACE MOUNT LED

1.ELEMENT APPEARANCE

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Model No.	Material	Lighting Color	Resin Color
RT-TI2835M02-EP17	InGaN	White	Orange Diffused

2.ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

Characteristic	Symbol	Rating	Unit
Forward direct current	I _{FM}	90	mA
Reverse voltage	V _{RM}	5	V
Operating temperature	T _{opr}	-40 to +80	°C
Storage temperature	T _{stg}	-40 to +100	°C
Power dissipation	P _d	315	mW

3.ELECTRO-OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition		Min.	Typ.	Max.	Unit
Luminous Flux	ψ_v	IF=60mA	L0	20	~	22	Lm
			L1	22	~	24	
			L2	24	~	26	
Forward voltage	V_F	IF=60mA	V1	3.0	~	3.1	V
			V2	3.1	~	3.2	
			V3	3.2	~	3.3	
			V4	3.3	~	3.4	
			V5	3.4	~	3.5	
Reverse current	IR	VR=5V				2	μ A
Viewing angle	2 θ 1/2	IF=60mA			120		deg.
Color rendering	CRI	IF=60mA		80			Ra
Color temperature	CCT1	IF=60mA			2700		K
	CCT2				3000		

※Radiant Intensity Measurement allowance is ±15%

※Forward voltage Measurement allowance is ±0.05V

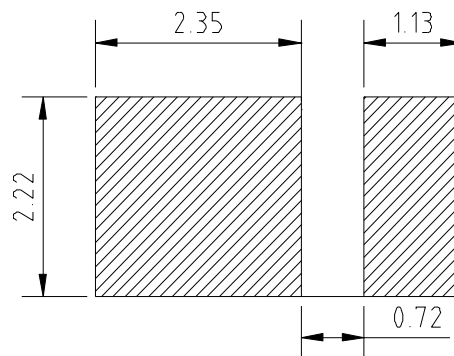
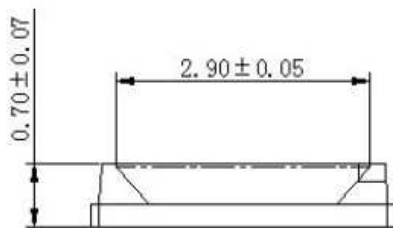
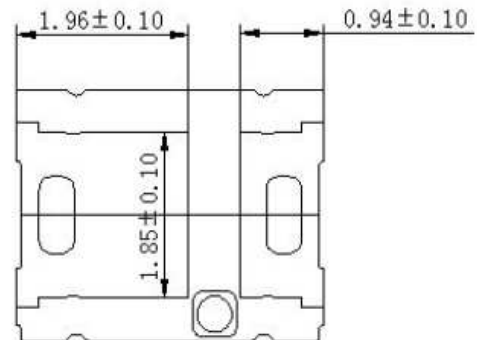
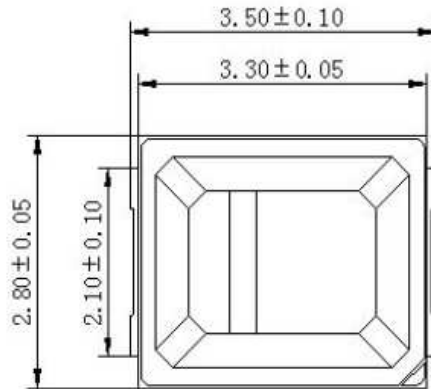
※Measurement Uncertainty of the color coordinates : ±0.01



Model : RT-TI2835M02-EP17

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4.DIMENSIONS UNIT : mm TOLERANCE : $\pm 0.25\text{mm}$





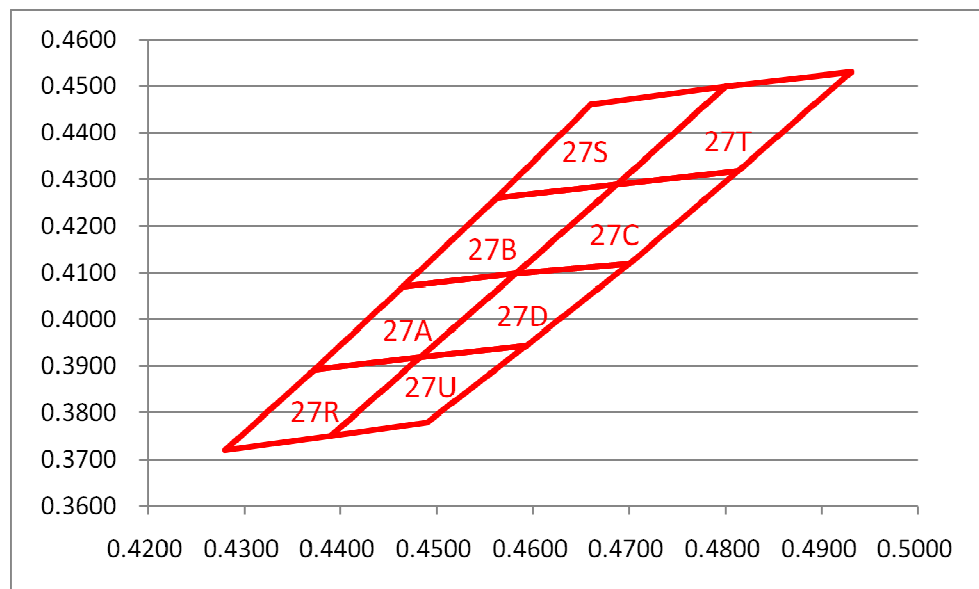
5.CHROMATICITY COORDINATE RANKS (IF=60mA) AT Ta=25℃

2700K

27C/2580~2700K		27D/2580~2700K		27T/2580~2700K		27U/2580~2700K	
X	Y	X	Y	X	Y	X	Y
0.4687	0.4289	0.4582	0.4099	0.4800	0.4500	0.4483	0.3919
0.4582	0.4099	0.4483	0.3919	0.4687	0.4289	0.4390	0.3750
0.4700	0.4120	0.4593	0.3944	0.4813	0.4319	0.4490	0.3780
0.4813	0.4319	0.4700	0.4120	0.4930	0.4530	0.4593	0.3944
0.4687	0.4289	0.4582	0.4099	0.4800	0.4500	0.4483	0.3919
27A/2700~2870K		27B/2700~2870K		27R/2700~2870K		27S/2700~2870K	
X	Y	X	Y	X	Y	X	Y
0.4465	0.4071	0.4562	0.4260	0.4373	0.3893	0.4660	0.4460
0.4373	0.3893	0.4465	0.4071	0.4280	0.3720	0.4562	0.4260
0.4483	0.3919	0.4582	0.4099	0.4390	0.3750	0.4687	0.4289
0.4582	0.4099	0.4687	0.4289	0.4483	0.3919	0.4800	0.4500
0.4465	0.4071	0.4562	0.4260	0.4373	0.3893	0.4660	0.4460

* Measurement Uncertainty of the color coordinates : ± 0.01

色塊圖：



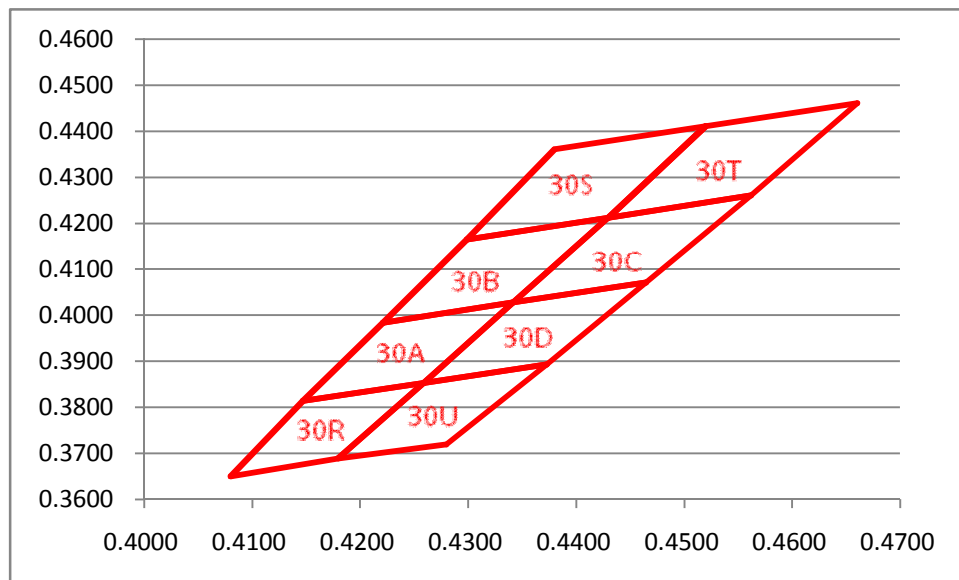


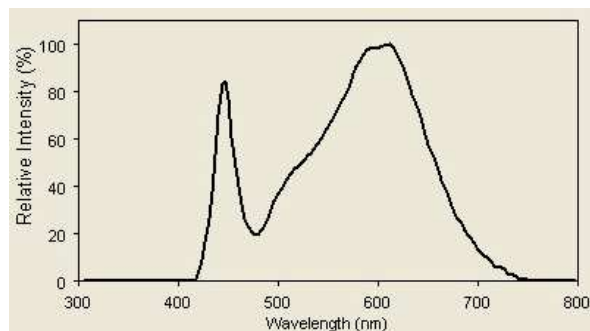
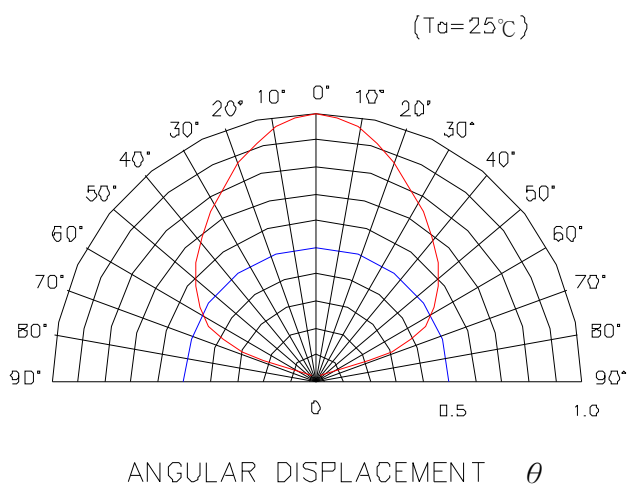
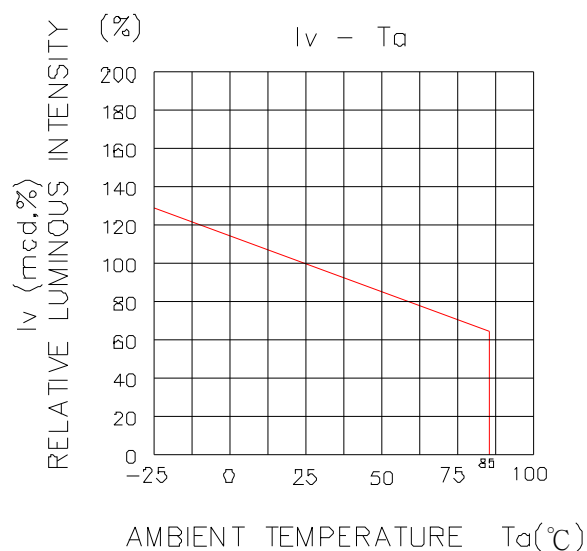
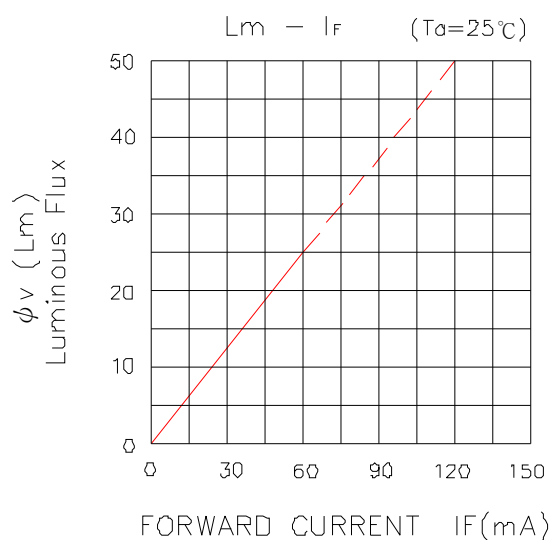
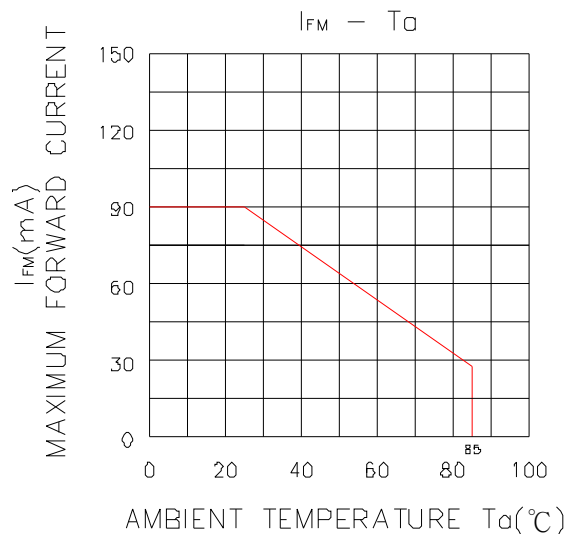
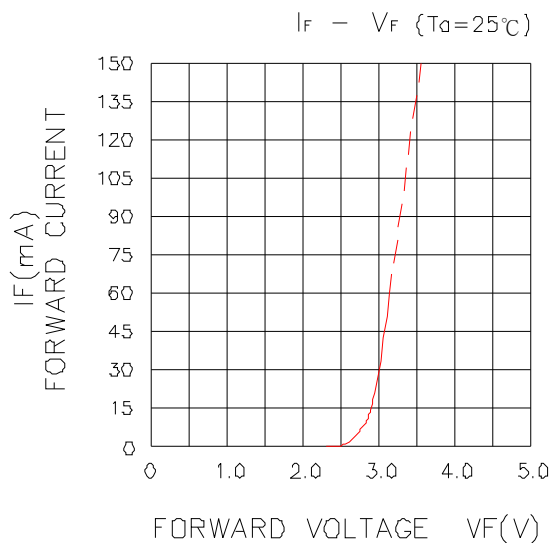
3000K

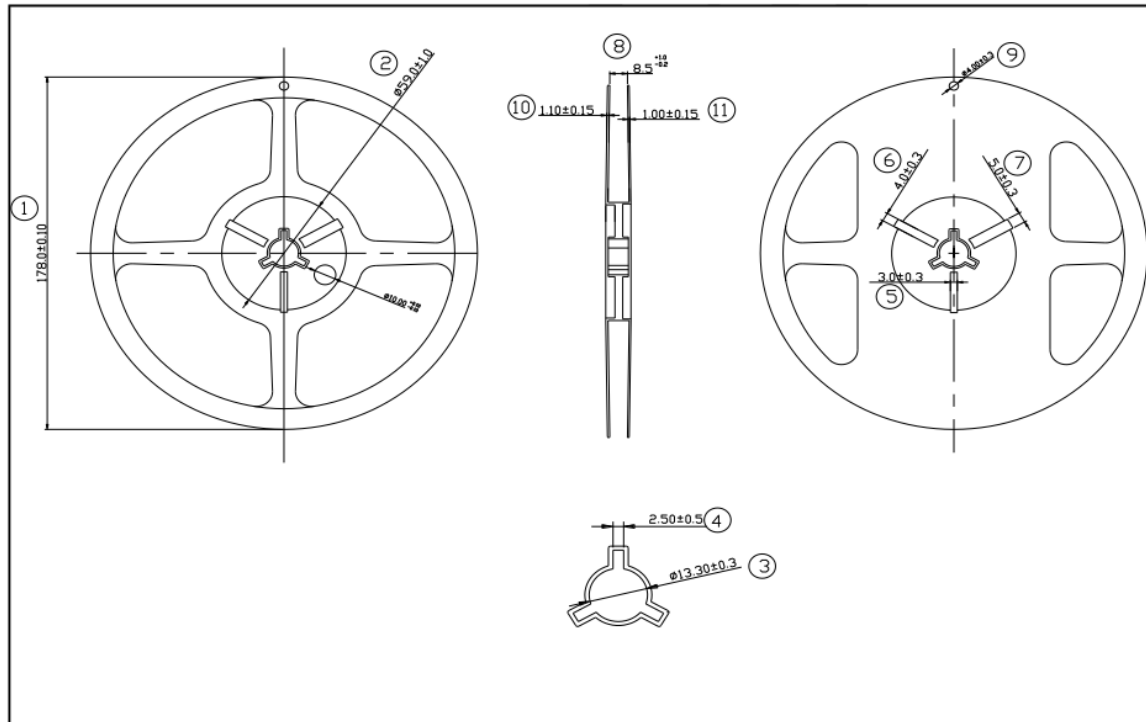
30C/2870~3035K		30D/2870~3035K		30T/2870~3035K		30U/2870~3035K	
X	Y	X	Y	X	Y	X	Y
0.4430	0.4212	0.4342	0.4028	0.4520	0.4410	0.4259	0.3853
0.4342	0.4028	0.4259	0.3853	0.4430	0.4212	0.4180	0.3690
0.4465	0.4071	0.4373	0.3893	0.4562	0.4260	0.4280	0.3720
0.4562	0.4260	0.4465	0.4071	0.4660	0.4460	0.4373	0.3893
0.4430	0.4212	0.4342	0.4028	0.4520	0.4410	0.4259	0.3853
30A/3035~3220K		30B/3035~3220K		30R/3035~3220K		30S/3035~3220K	
X	Y	X	Y	X	Y	X	Y
0.4221	0.3984	0.4299	0.4165	0.4147	0.3814	0.4380	0.4360
0.4147	0.3814	0.4221	0.3984	0.4080	0.3650	0.4299	0.4165
0.4259	0.3853	0.4342	0.4028	0.4180	0.3690	0.4430	0.4212
0.4342	0.4028	0.4430	0.4212	0.4259	0.3853	0.4520	0.4410
0.4221	0.3984	0.4299	0.4165	0.4147	0.3814	0.4380	0.4360

* Measurement Uncertainty of the color coordinates : ± 0.01

色塊圖：





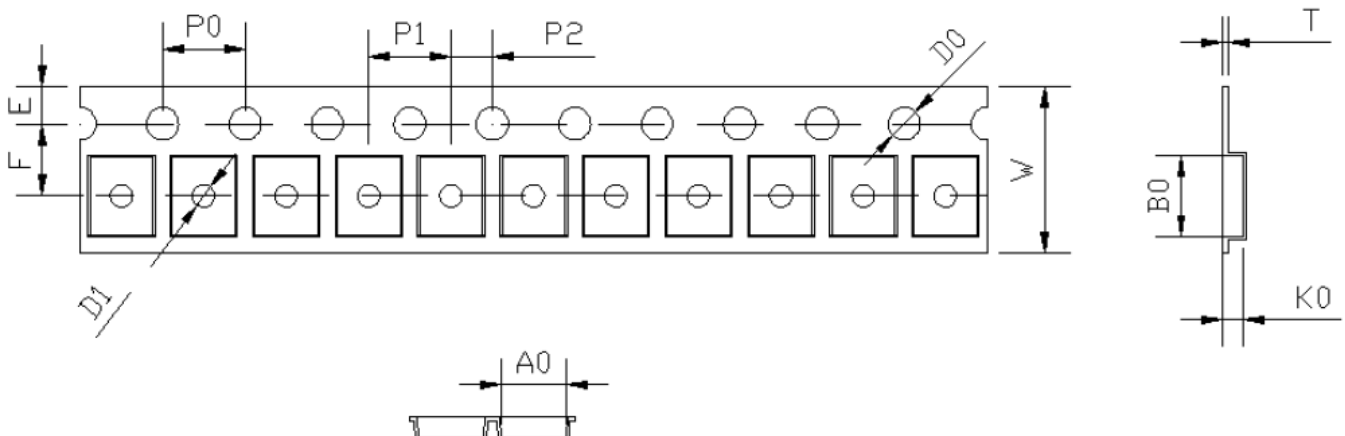
**Reel Dimensions**

Note:

Tolerances unless mentioned $\pm 0.1\text{mm}$. Unit = mm

Carrier Tape Dimensions: Loaded Quantity 3000pcs Per Reel

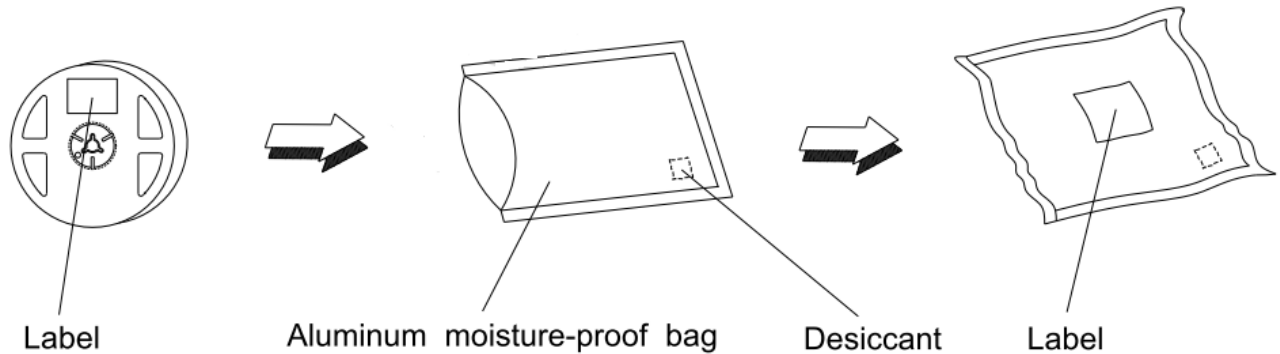
symbol	AO	BO	KO	PO	P1	P2
Spec	3.10 ± 0.10	3.80 ± 0.10	1.05 ± 0.10	4.0 ± 0.10	4.0 ± 0.10	2.0 ± 0.05
symbol	W	T	E	F	DO	D1
Spec	8.00 ± 0.20	0.20 ± 0.05	1.75 ± 0.10	3.5 ± 0.05	1.55 ± 0.05	1.10 ± 0.05



Note:

1. Tolerance unless mentioned is $\pm 0.1\text{mm}$; Unit = mm

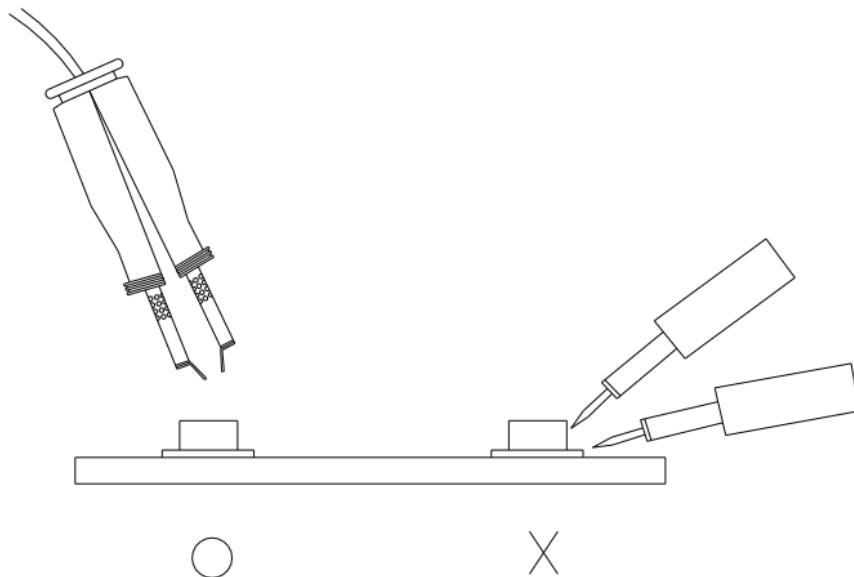
Moisture Resistant Packing Process



Precautions for Use

Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



Soldering Profile

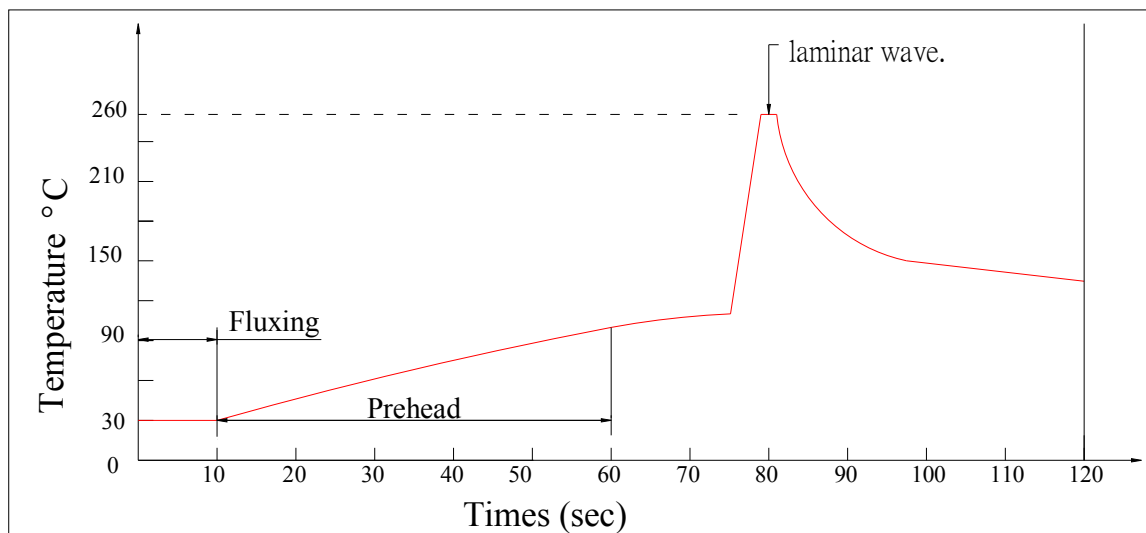
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Compliant with the following condition :

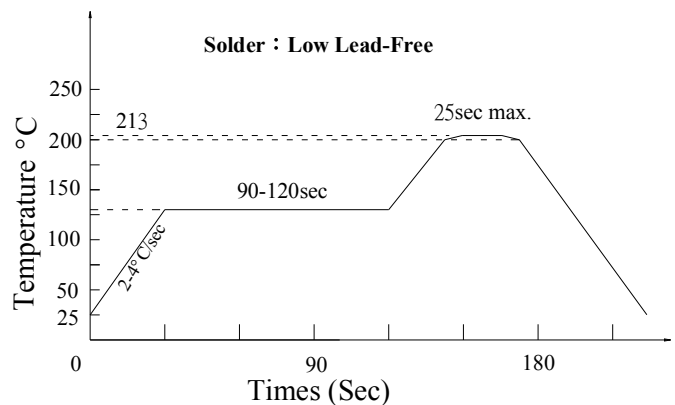
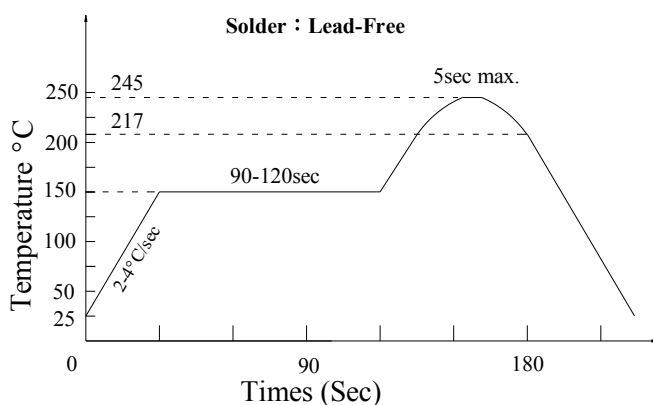
(1) Lead quantity of product below 100 ppm

(2) Lead-free process

Shape	Lead Frame Type
Hand soldering	1.Temp.at tip of iron : 300 °C max.(30W max.) 2.Soldering time : 3 sec max. 3.Distance : 3 mm MIN (from solder joint to case)
DIP soldering	1.Preheat temp : 100 °C max , 60 sec max. 2.Bath temp : 260 °C max. 3.Bath time : 3 sec max. 4.Distance : 3 mm MIN (From solder joint to case)
Recommended soldering profile	1.Preheat temp. : 100 °C , 50 sec max. 2.Peak temp. : 260 °C max. 3.Peak time : 3 sec max. 4.Duration above: 200°C , 3 sec max.



SMD Type		
Profile Feature	Solder : Lead-Free	Solder : Low Lead-Free
Preheat temp	150-180 °C , 4°C/sec max. 120 sec max.	130-170 °C , 4°C/sec max. 120 sec max.
Peak temp	245 °C max. , 5 sec max.	213 °C max. , 25 sec max.
Duration above	217 °C , 60 sec max.	200 °C , 40 sec max.





Reliability Test Items

CONDITIONS :

The reliability of products shall be satisfied with items listed below.

NO.	<u>Item</u>	Condition	Time / Cycle	Criteria	Ac / Re	Sample Quantity
1	Soldering Heat Test	260°C	5 sec	Open / Short	0 / 1	60 pcs
2	Thermal Shock	0°C (5min) ~80°C (5min)	20 Cycles	Open / Short	0 / 1	60 pcs
3	High Temp. Storage	85°C	1000 Hrs	Open / Short	0 / 1	60 pcs
4	Low Temp. Storage	-40°C	1000 Hrs	Open / Short	0 / 1	60 pcs
5	Temperature Cycle Test	-40°C~85°C	100 Cycles , 200Hrs	Open / Short	0 / 1	60 pcs
6	High Temp. High Humidity Test	60°C , 90% RH	1000Hrs	Open / Short	0 / 1	60 pcs
7	DC Operation Life Test	IF=150mA	1000Hrs	Power decay	≤ 30%	60 pcs