

High Power UV LED Product Specification

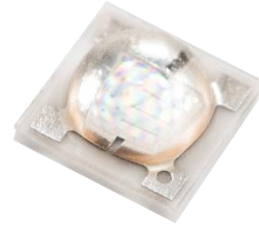
Updated on 2017/11/15

Approval Sheet

PU88S04 UV Emitter
 Product Specification

RoHS

Product	UV 3535 Emitter
Part Number	PU88S04
Customer	
Issue Date	2017/6/30



Feature

- ✓ 3W UV LED Emitter
- ✓ Compact dimensions: 3.45 mm × 3.45 mm × 2.10 mm
- ✓ Dice Technology : AlGaIn
- ✓ View angle: $\theta = 125^\circ$
- ✓ High power operation
- ✓ Low thermal resistance
- ✓ Environmental friendly ; RoHS compliance

Applications

- ✓ UV curing
- ✓ Counterfeit banknote detection
- ✓ Photo catalytic purification

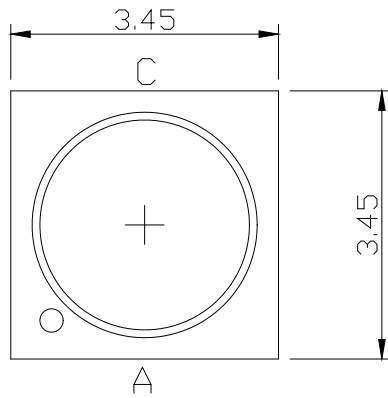
MAKER			CUSTOMER
Prepared	Checked	Approved	Approver
SP Lin	HW Huang	KH Shen	

Outline Dimension

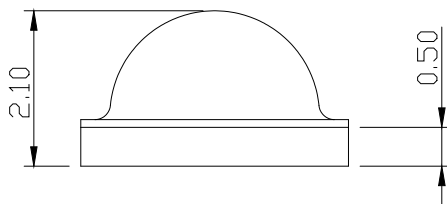
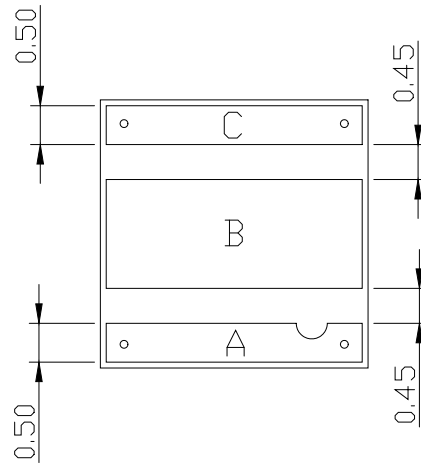
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Outline Dimension

Top view



Bottom view



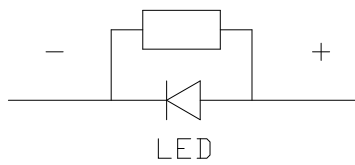
Unit:mm

A:Anode

B:Thermal

C:Cathode

Protection Device



*. Tolerance:±0.15mm

Performance

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Opto-Electrical Characteristics

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	
Forward Voltage ^{*(1)}	V_F	$I_F = 350\text{mA}$	3.0	3.4	3.5	V	
Wavelength ^{*(2)}	W_P	$I_F = 350\text{mA}$	395	--	400	nm	
Thermal Resistance ^{*(3)}	R_{th}	$I_F = 350\text{mA}$	6	--	10	$^{\circ}\text{C}/\text{W}$	
View Angle	θ	$I_F = 350\text{mA}$	--	125	--	deg	
Radiant Power ^{*(4)}	P_O	$I_F = 350\text{mA}$	395nm	510	570	mW	
							--
				--			--

(1).The Forward Voltage tolerance is $\pm 0.1\text{V}$

(2).Peak Wavelength tolerance is $\pm 3\text{nm}$

(3).Thermal resistance is calculated from junction to solder

(4).The Radiant Power tolerance $\pm 10\%$

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
DC Forward Current	I_F	700	mA
Surge Forward Current ^{*(1)}	I_{FS}	700	mA
ESD	V_{ESD}	8000	V
Power Dissipation	P_d	3.10	W
Soldering Temperature ^{*(2)}	T_S	260	$^{\circ}\text{C}$
Junction Temperature	T_J	120	$^{\circ}\text{C}$
Storage Temperature	T_{Stg}	-40~+100	$^{\circ}\text{C}$
Operation Temperature	T_{Op}	-30~+85	$^{\circ}\text{C}$

(1) Frequency Duty $<10\%$, $t_p=100\mu\text{ s}$.

(2) JEDEC STD-020 latest version compliant.

(3) Proper current rating must be observed to maintain junction temperature below T_J max.

Binning

PU88S04 UVA Emitter

Product Specification

Wavelength Rank (Ta=25°C)

W _P Rank	Min.	Max.	Unit	Condition
U0395	395	400	nm	I _F =350mA

Radiant Power Rank (Ta=25°C)

P _O Rank	Min.	Max.	Unit	Condition
01	460	510	mW	I _F =350mA
02	510	560	mW	I _F =350mA
03	560	610	mW	I _F =350mA
04	610	660	mW	I _F =350mA
05	660	710	mW	I _F =350mA

Forward Voltage Rank (Ta=25°C)

V _F Rank	Min.	Max.	Unit	Condition
01	3.0	3.1	V	I _F =350mA
02	3.1	3.2	V	I _F =350mA
03	3.2	3.3	V	I _F =350mA
04	3.3	3.4	V	I _F =350mA
05	3.4	3.5	V	I _F =350mA

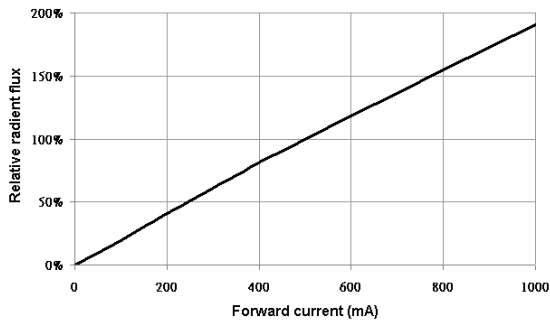
Bin code definition (for example)

W _P Rank	P _O Rank	V _F Rank
U0395	02	01

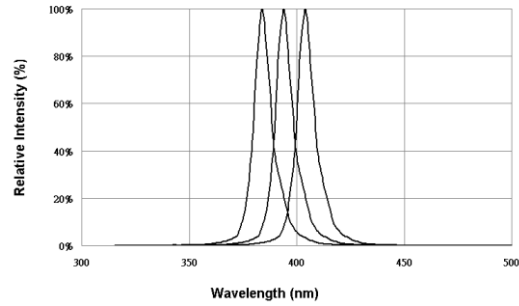
Characteristics

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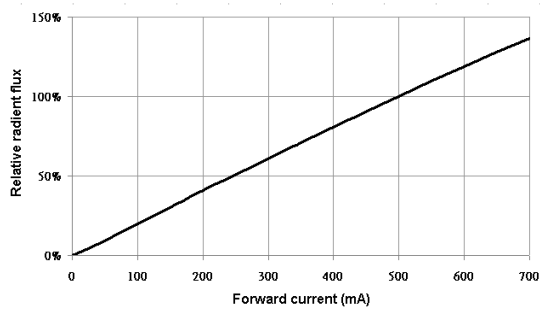
Relative Radiant Flux vs. Forward Current



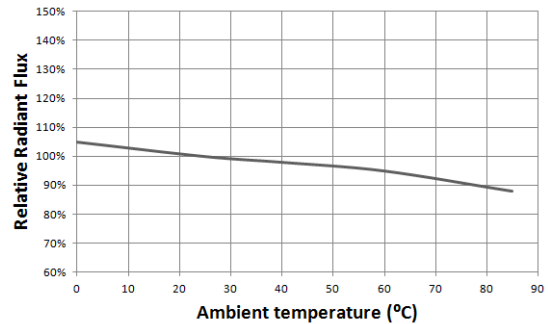
Relative Spectral Distribution vs. Wavelength at 25°C, I_F=350mA



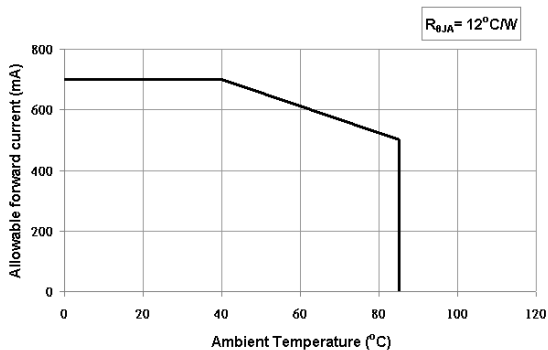
Forward Current vs. Forward Voltage at 25°C



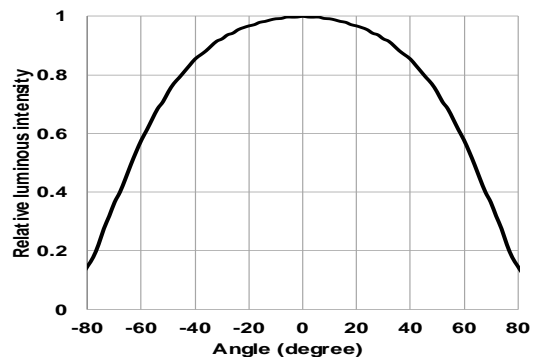
Relative radiant flux vs. Ambient Temperature



Ambient Temperature vs. Allowable forward current



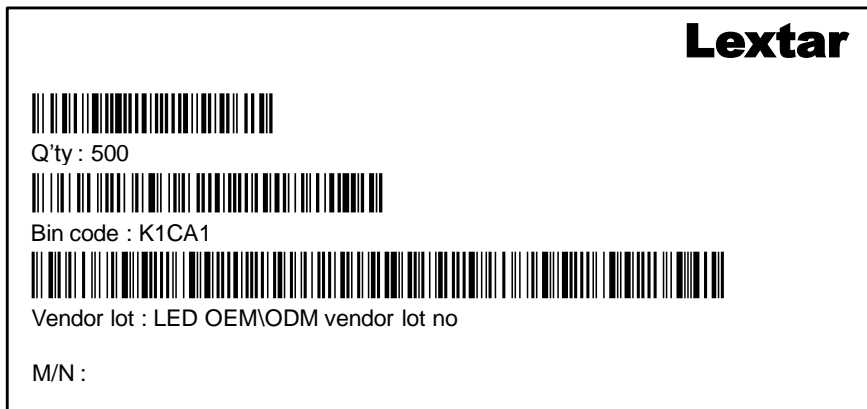
Directivity



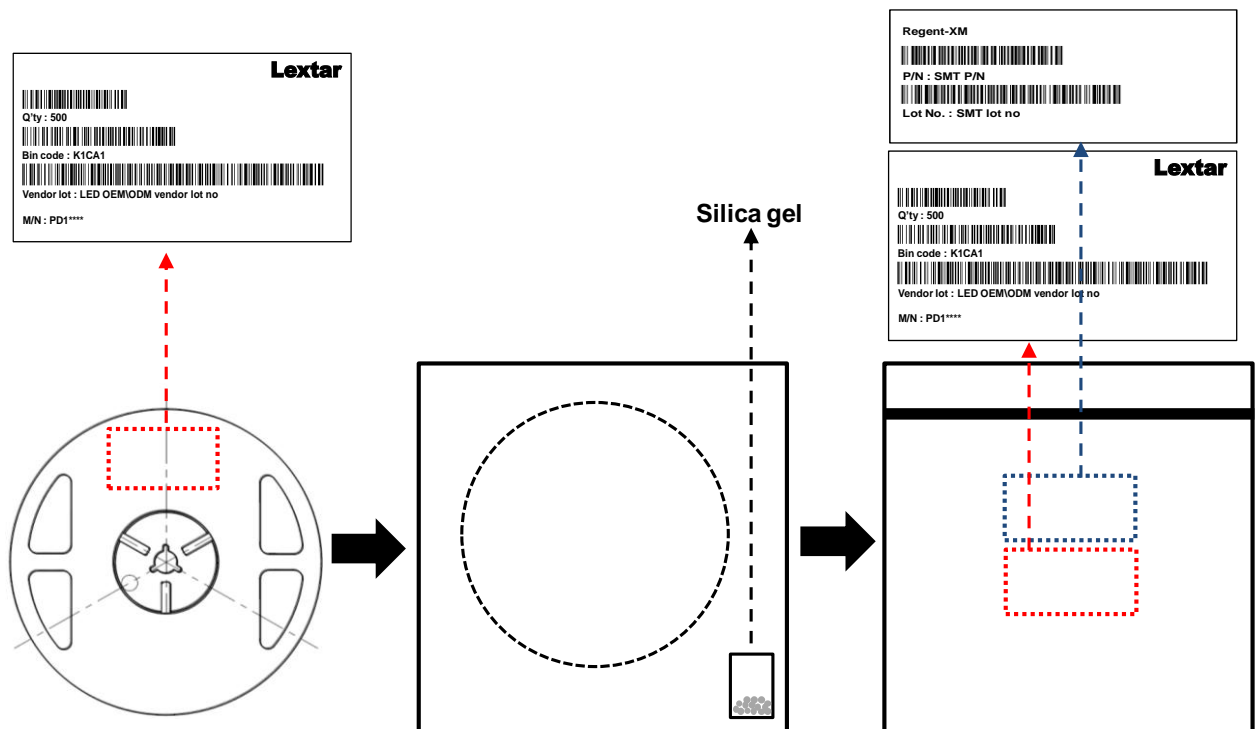
Packing

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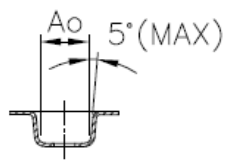
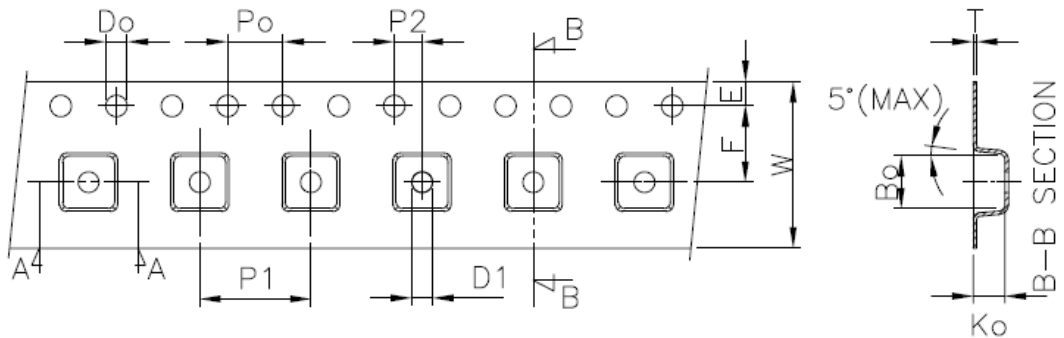
Label



Packing process

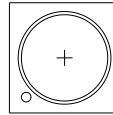


■ **Carrier dimensions**



A-A SECTION

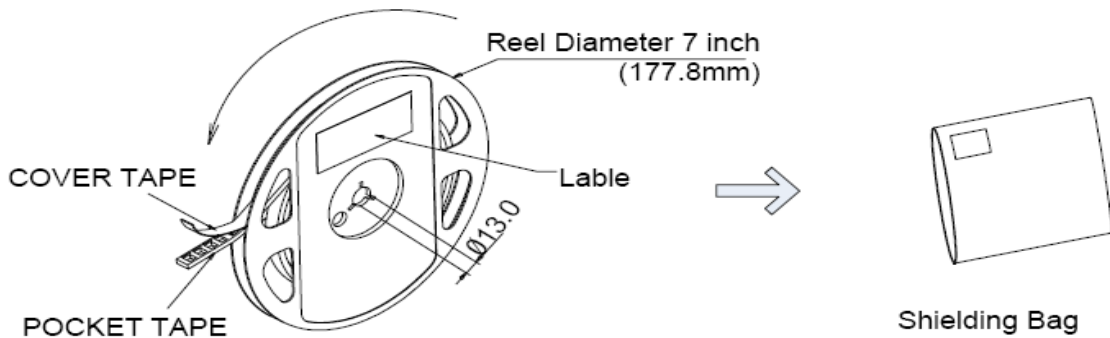
Orientation:



UNIT:mm

Symbol	A_o	B_o	K_o	P_o	P_1	P_2	T
Spec	3.72 ± 0.10	3.72 ± 0.10	2.7 ± 0.10	4.00 ± 0.10	8.00 ± 0.10	2.00 ± 0.10	0.25 ± 0.10
Symbol	E	F	D_o	D_1	W	$10P_o$	--
Spec	1.75 ± 0.10	5.5 ± 0.05	1.55 ± 0.05	1.50 ± 0.10	12.0 ± 0.30	40.0 ± 0.20	--

USER REEL DIRECTION

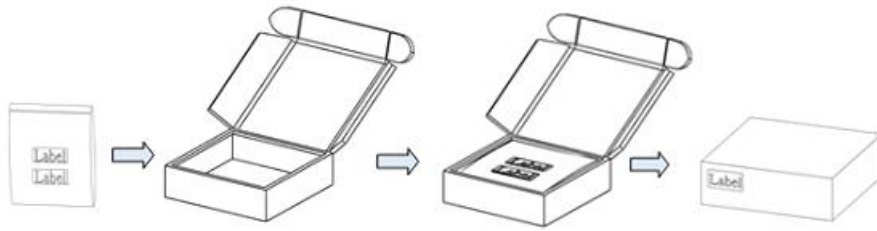


7 inch Anti-Static Reel

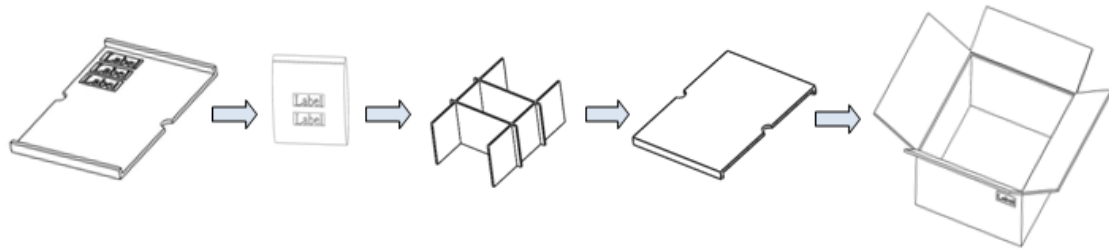
Max 500pcs/reel

Min 250pcs/reel

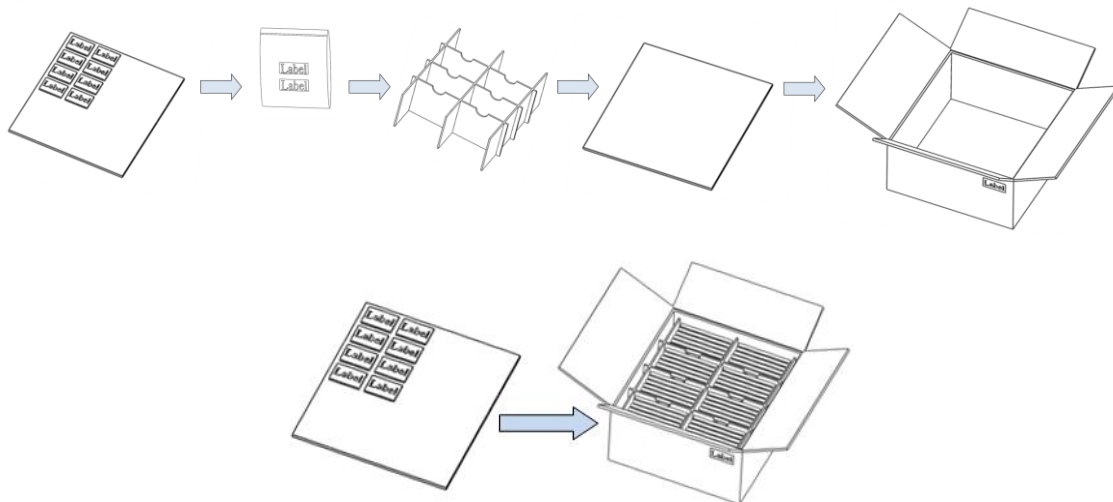
■ **Small Box**



■ **Medium Box**



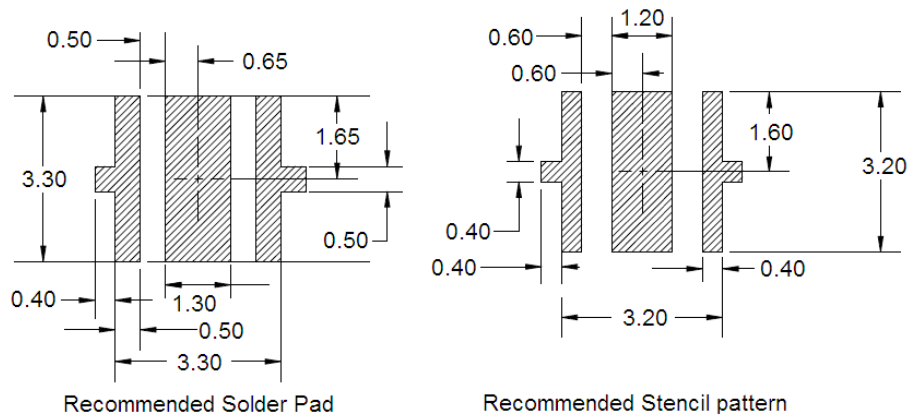
■ **Large Box**



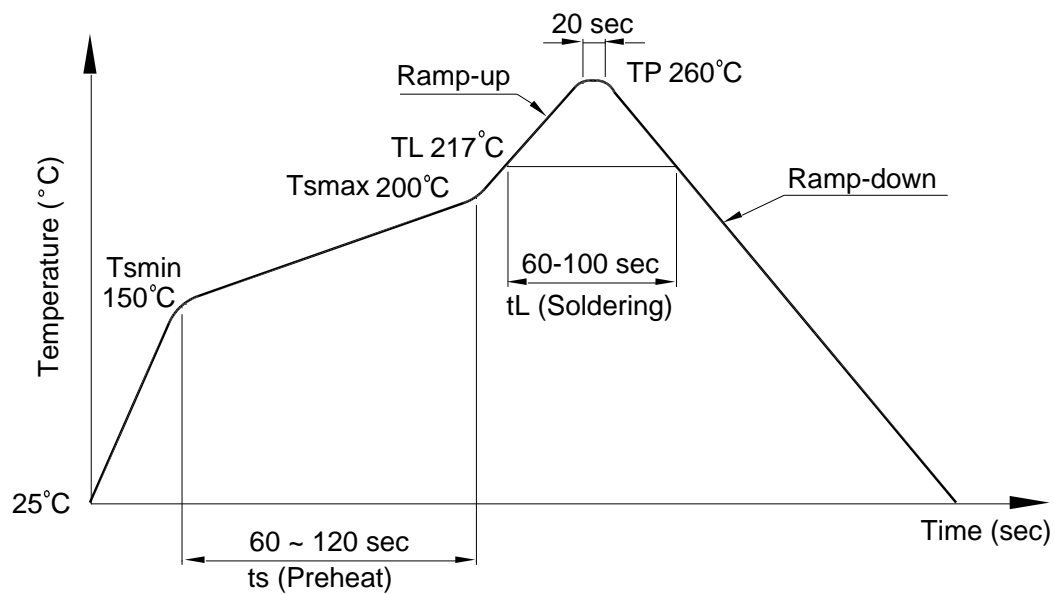
Application Notes

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Soldering PAD Design



Recommended Reflow Soldering Profile (JEDEC-STD-020 latest version compliant)



Profile Items	Conditions
Preheat	
-Temperature Min.(T_{Smin})	150°C
-Temperature Max.(T_{Smax})	200°C
-Time(Min. to Max.)(t_S)	90±30 sec
Soldering Zone	
-Temperature(T_L)	217°C
-Time	60~100 sec
Peak Temperature(T_P)	260°C
Ramp-up rate	3°C / sec max.
Ramp-down rate	3~6°C / sec

Note:

1. One time soldering is recommended; do not exceed 3 times reflow process.
2. The recommended peak temperature is 245°C. The maximum soldering temperature should be controlled under 260°C.