

EDCON-COMPONENTS



The Power of LED Light



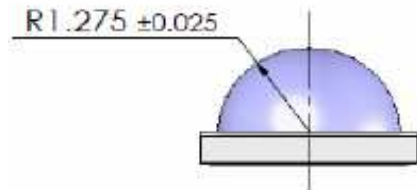
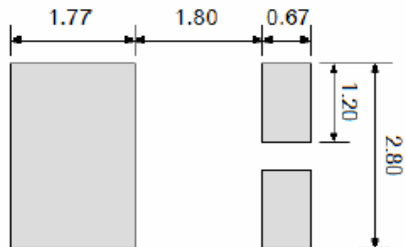
Specifications

Diamond Rebel, a high compact and surface mounted solid state lighting device, provides high luminous flux output with high optical efficiency. The reduced packing size remarkably promotes the flexibility on illumination engineering design. With capability on standard lead free solder reflow process, Diamond Rebel provides customers the promising solutions on any lighting applications.

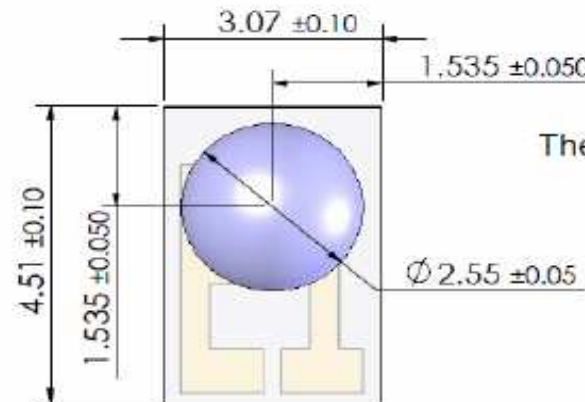
Features

- High luminous flux output
- High compact size design for more flexibility
- Silicone molding lens
- General Lightning
- Par Lamp
- Brightness compensation

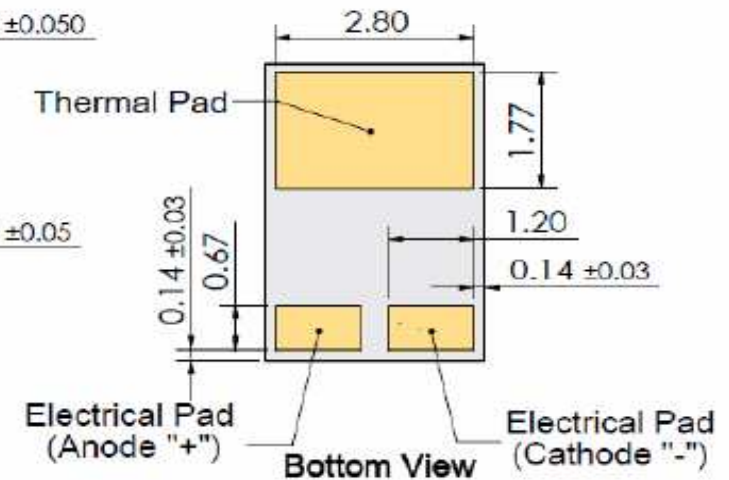
PCB Solder Pad Dimension



Dimensions (mm)



Top View



1 Watt Diamond- Rebel LED

Part No.: **M15008**

Customer:

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	10.04.2009
APPD:	Schumi			FINISH	Jamy		Sheet No.	1 from 10	

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Characteristics

Characteristics at If=350mA (Ta=25°C)

Parameter	Symbol	Value			Unit
		Min	Typ.	Max.	
Luminous flux	$\varnothing_{v(2)}$		47		lm
Dominant Wavelength	Wd	610		630	
View Angle	$2\varnothing_{1/2}$		130		degree
Forward Voltage	Vf	2,0		3,0	V
Junction Temperature	Tj	----		115	Deg.
Operation Temperature	Top	. -40°C ~ + 85			°C
Storage Temperature	Tst	. -40°C ~ + 100			°C

Characteristics at If=350mA (Ta=25°C)

Parameter	Symbol	Value			Unit
		Min	Typ.	Max.	
Luminous flux	$\varnothing_{v(2)}$		45		lm
Dominant Wavelength	Wd	585		595	
View Angle	$2\varnothing_{1/2}$		130		degree
Forward Voltage	Vf	2		3	V
Junction Temperature	Tj			115	Deg.
Operation Temperature	Top	. -40°C ~ + 85			°C
Storage Temperature	Tst	. -40°C ~ + 100			°C

Bin Code

Luminous Flux (lm)	Rank (BIN)	Wavelength (nm)	Rank (BIN)
39,8	R1	610	A0
45,7	R2	620	B0
51,7	S1	630	C0
59,5	S2		

1. The typical luminous flux of diamond Led will be upgraded per season
2. $\varnothing$ minimum luminous flux performance guaranted within published operating conditions. EDCON maintains a tolerance of +/-10% luminous flux measurements.
3. The dominant wavelength is derived from CIE1931 chromaticity diagramm and presents the perceived color.
The tester tolerance of dominant Wavelength +/- 1nm.
4. EDCON maintains a tolerance of +/- 0,06V on forward voltage measurements.

Bin Code

Luminous Flux (lm)	Rank (BIN)	Wavelength (nm)	Rank (BIN)
39,8	R1	585	A0
45,7	R2	587,5	B0
51,7	S1	590	C0
49,5	S2	592,5	D0

1 Watt Diamond- Rebel LED

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Characteristics Curve

Characteristics at If=350mA (Ta=25°C)

Parameter	Symbol	Value			Unit
		Min	Typ.	Max.	
Luminous flux	$\Phi_{v(2)}$		70		lm
Dominant Wavelength	Wd	515	--	535	
View Angle	$2\Phi_{1/2}$		130		degree
Forward Voltage	Vf	2,8		3,6	V
Junction Temperature	Tj	----		115	Deg.
Operation Temperature	Top	. -40°C ~ + 85			°C
Storage Temperature	Tst	. -40°C ~ + 100			°C

Characteristics at If=350mA (Ta=25°C)

Parameter	Symbol	Value			Unit
		Min	Typ.	Max.	
Luminous flux	$\Phi_{v(2)}$		17		lm
Dominant Wavelength	Wd	460	--	475	
View Angle	$2\Phi_{1/2}$		130		degree
Forward Voltage	Vf	2,8		3,8	V
Junction Temperature	Tj	----		115	Deg.
Operation Temperature	Top	. -40°C ~ + 85			°C
Storage Temperature	Tst	. -40°C ~ + 100			°C

Bin Code

Luminous Flux (lm)	Rank (BIN)	Wavelength (nm)	Rank (BIN)
51,7	S1	515	B0
59,5	S2	520	C0
67,2	T1	525	D0
77,3	T2	530	E0
87,4	U1	535	F0

1. The typical luminous flux of diamond Led will be upgraded per season
2. Φ minimum luminous flux performance guaranted within published operating conditions. EDCON maintains a tolerance of +/-10% luminous flux measurements.
3. The dominant wavelength is derived from CIE1931 chromaticity diagram and presents the perceived color.
The tester tolerance of dominant Wavelength +/- 1nm.
4. EDCON maintains a tolerance of +/- 0,06V on forward voltage measurements.

Bin Code

Luminous Flux (lm)	Rank (BIN)	Wavelength (nm)	Rank (BIN)
10,7	L0	460	E0
13,9	M0	465	F0
18,1	N0	470	G0
23,5	P0		

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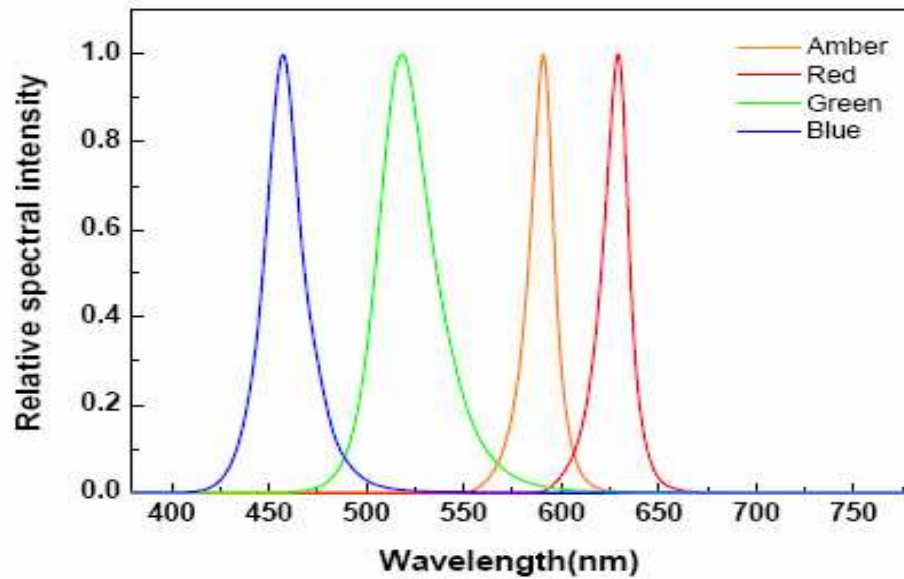


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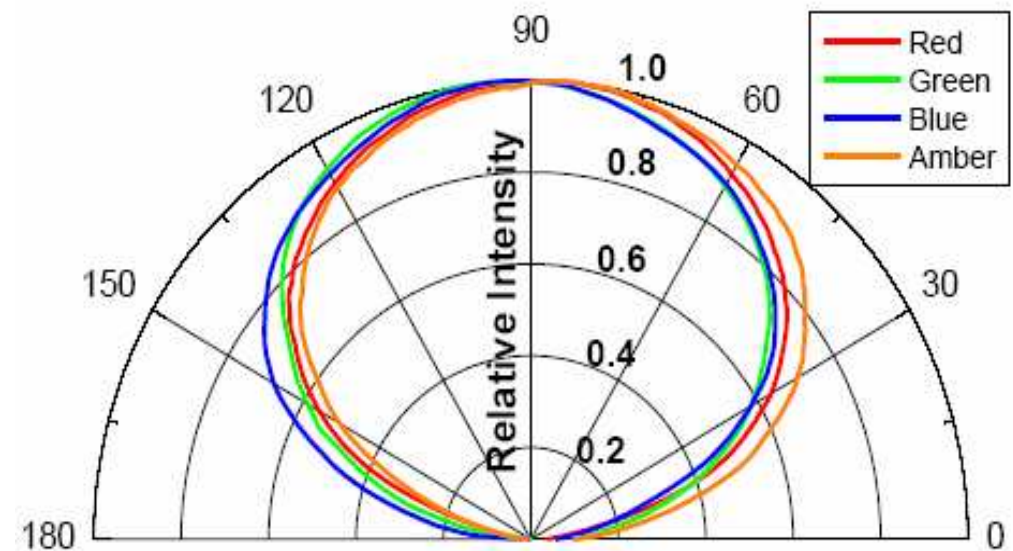


Characteristics Curve

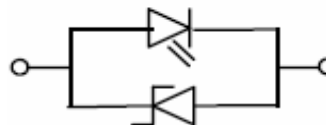
Emission Spectrum



Radiation Pattern



Circuit Diagram



1 Watt Diamond- Rebel LED

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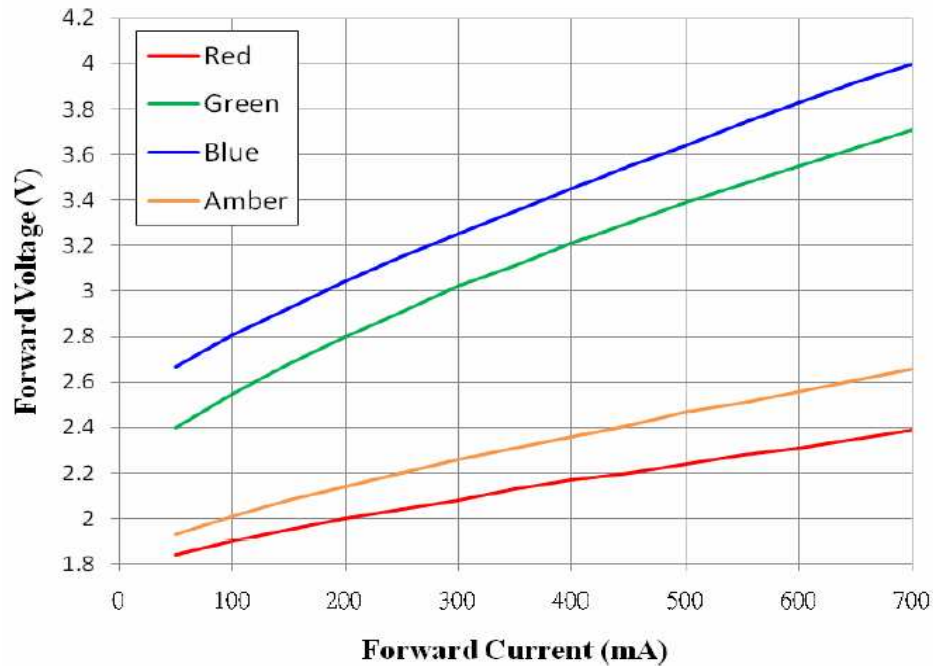


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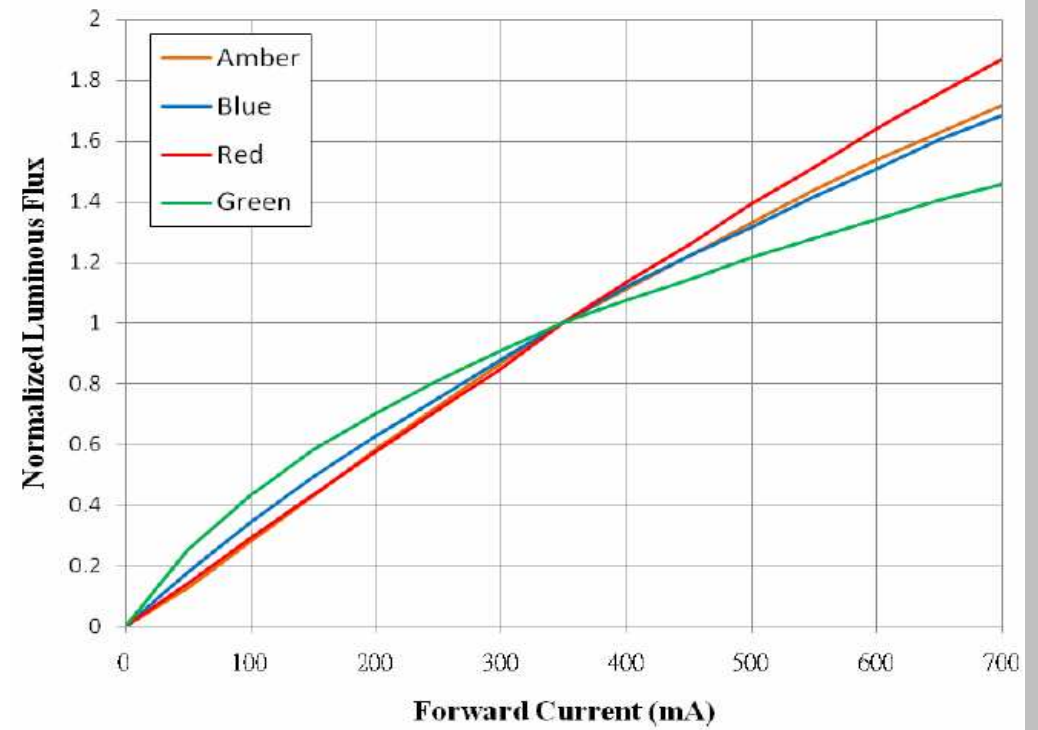


Characteristics

Typical Forward Current Characteristics



Typical Light Output Characteristics over Forward Current



1 Watt Diamond- Rebel LED

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LED Handling Informations

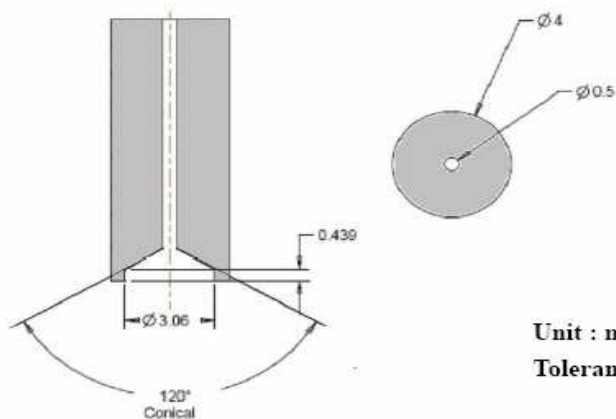
The following items are recommended when handling LEDs

The lens of LEDs should not be exposed to dust and debris. Excessive dust and debris may cause a drastic decrease in light output

Avoid mechanical stress on LED lens.

Do not touch the LED lens surface. It would affect the optical performance of LED due to the LED lens damage.

Pick and Place Nozzle Pick and Place tool was recommended to use for the removal of LEDs from the factory tape & reel packaging. The pickup tool was recommended and shown as below



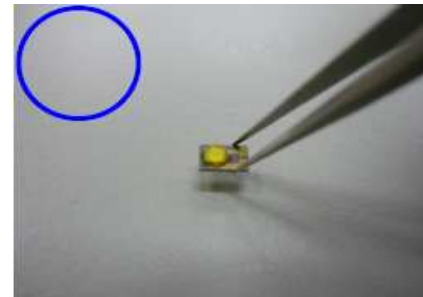
Please follow the guideline to grab LEDs

Use tweezers to grab LEDs

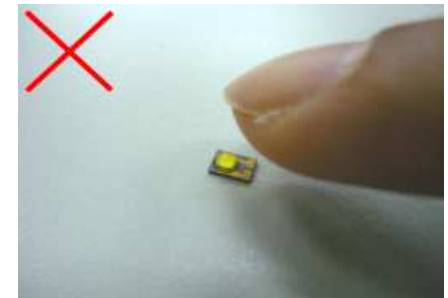
Do not touch lens with tweezers

Do not touch lens with fingers

Do not apply more than 2000gr. Impact or pressure on the silicone molding lens



Correct



Wrong

1 Watt Diamond- Rebel LED

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LED Handling Informations

Lens cleaning

In the case where a minimal level of dirt and dust particles can not be guaranteed, a suitable cleaning solutions can be applied to the lens surface.

Try a gentle swabbing using a lint-free swab

If needed, the use of lint-free swab and isopropyl alcohol used gently removes dirt from the lens surface.

Do not use other solvents as they may directly react with the LED assembly.

Do not use ultrasonic cleaning that the LED will be damaged.

Carrier Tape Handling

The following items are recommended when handling the Carrier tape of LEDs

Do not twist the carrier tape

The inward bending radius should not be smaller than 3cm for carrier tape.

Do not bend the tape outward.

Storage temperature should not exceed 60°C.



1 Watt Diamond- Rebel LED

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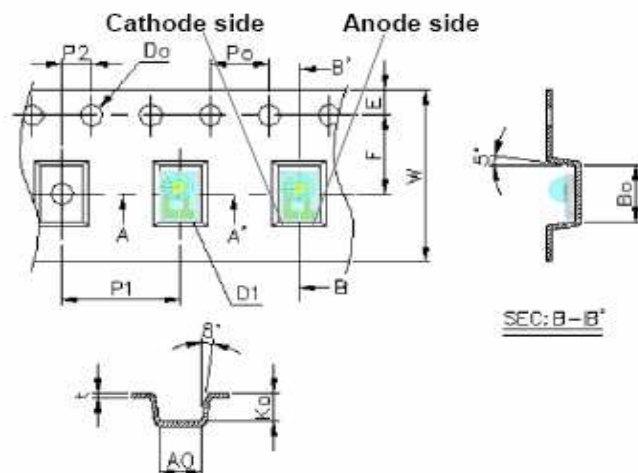


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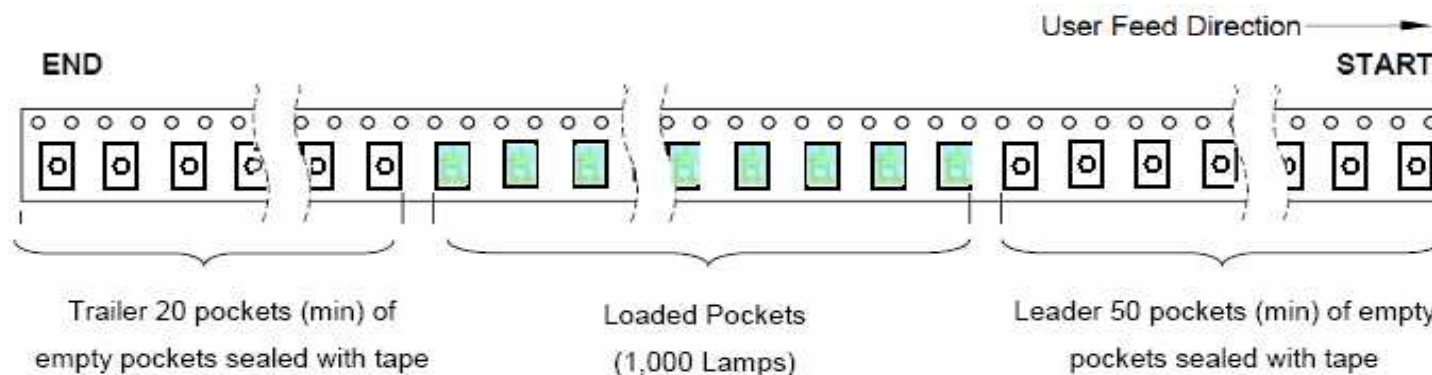
Package Specifications

Carrier Tape



Item	Specification	Tol. (+/-)
W	12.00	± 0.20
E	1.75	± 0.10
F	5.50	± 0.05
D0	1.50	+0.10, -0
D1	1.50	± 0.10
P0	4.00	± 0.05
P1	8.00	± 0.10
P2	2.00	± 0.05
P0 x 10	40.00	± 0.20

t	0.25	± 0.05
A0	3.32	± 0.10
B0	4.87	± 0.10
K0	2.27	± 0.10
A1		
B1		
K1		



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Ordering Informations

Serie	Color Tone	ROHS	Packing							
-------	------------	------	---------	--	--	--	--	--	--	--

M15008	RD	R	TR							
---------------	-----------	----------	-----------	--	--	--	--	--	--	--

RD = Red	R = ROHS Conform	TR = Tape Reel
GN = Green	N = NON ROHS	
YE = Yellow		
BL = Blue		

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Customer:

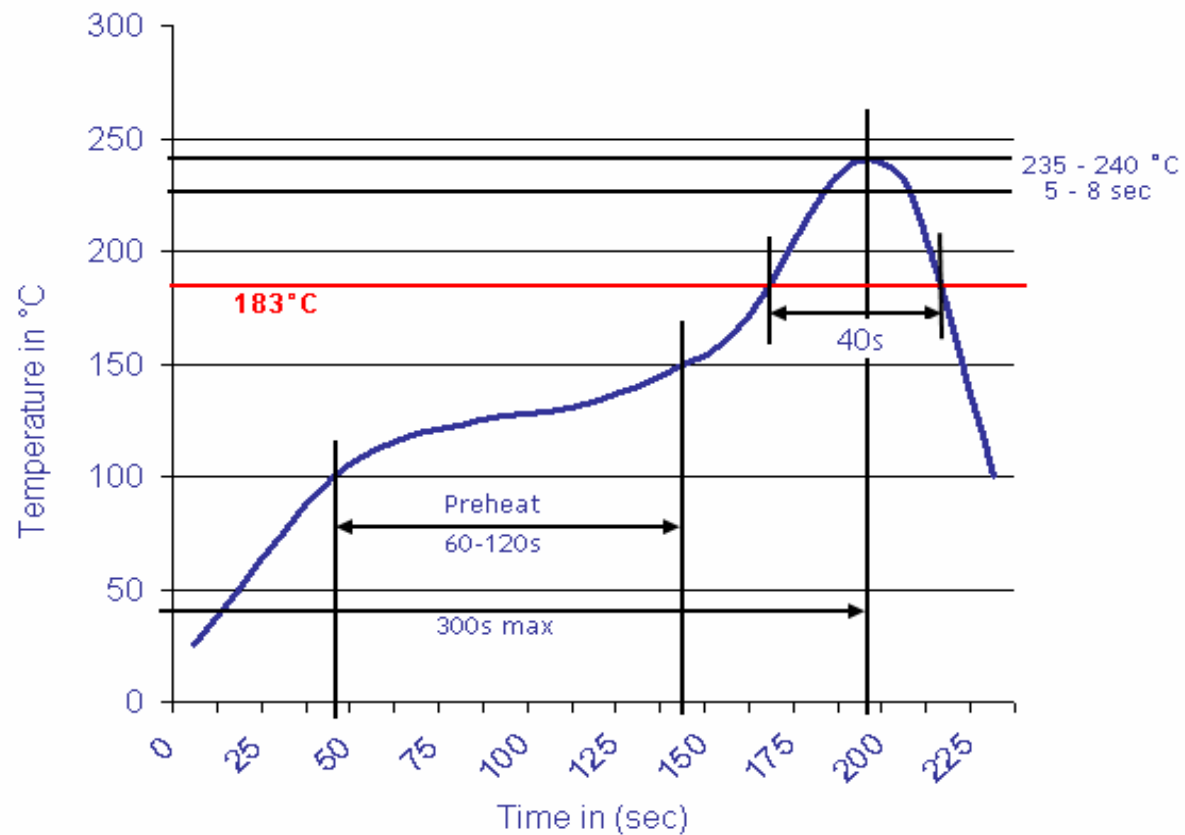


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Soldering Profile Curve

Classification Reflow Profile (JEDEC J-STD-020C)


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LED**

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