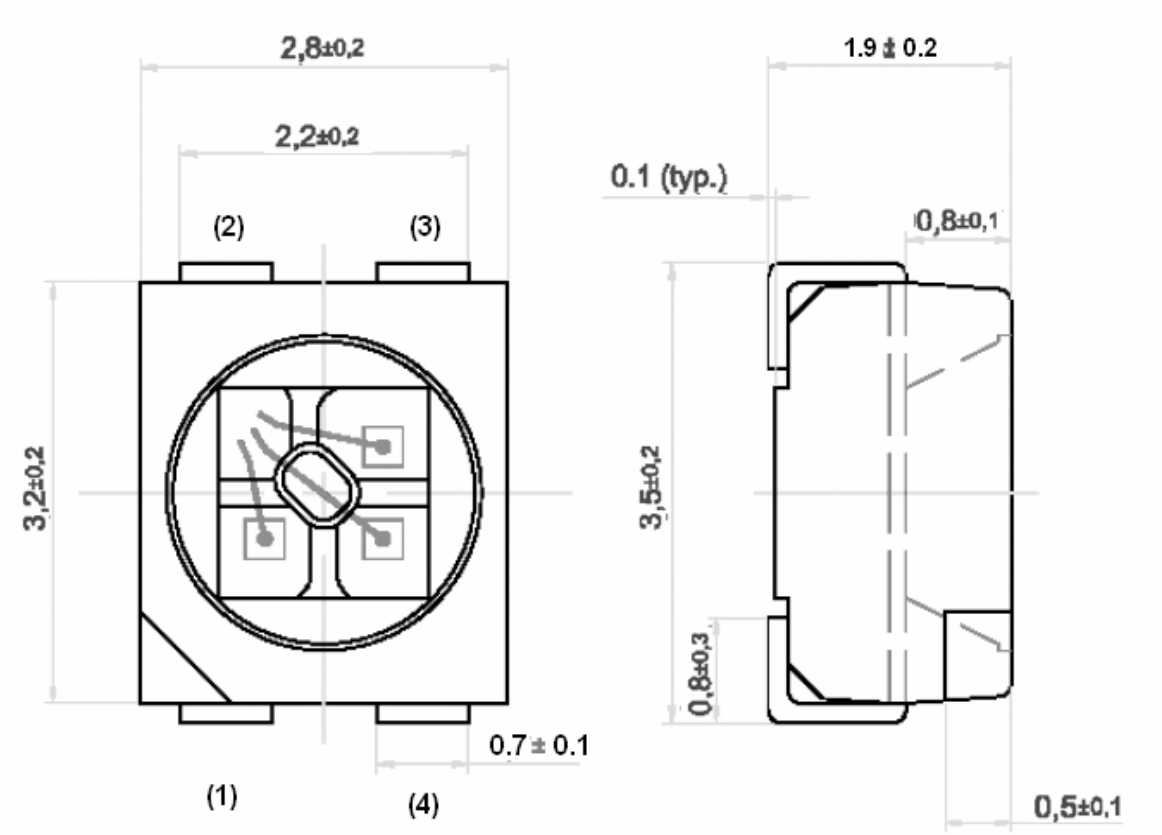
American Opto Plus LED
L-955XXXC Series

3.2 x 2.8 x 1.8mm FULL COLOR SMD

- **3.2 x 2.8 x 1.8mm Full Color SMD**
- **Wide viewing angle**
- **Compatible to IR-reflow soldering and TTW soldering**

PACKAGE DIMENSIONS



(1) Cathode Red (2) Common Anode (3) Blue (4) Green
Note: Units in millimeters
Tolerance is ± 0.25mm unless specified

Part Number	Chip	Dominant Wavelength (λ_D)	Viewing Angle
L-955LELPGLBC	AlInGaP Red InGaN B, G	620, 525, 470 nm	120°
L-955UEUPGUBC	AlInGaP Red InGaN B, G	620, 525, 470 nm	120°

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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Max Rating		Unit
		Red	Blue, Green	
DC Forward Current	I_F	30	20	mA
Peak Pulse Current (tp ≤ 10μs, duty cycle = 0.005)	I_{PF}	1000	200	mA
Reverse Voltage	V_R	12	5	V
Power Consumption		75	85	mW
Thermal Resistance Junction/Ambient 1 chip on 3 chips on	$R_{th\ JA}$	 480 770	 530 820	K/W
Thermal Resistance Junction/Solder Point 1 chip on 3 chips on	$R_{th\ JS}$	 260 420	 290 470	K/W
LED Junction Temperature	T_J	125		°C
Operating Temperature Range	T_{OPR}	-40 – +100		°C
Storage Temperature Range	T_{STG}	-40 – +100		°C

Notes:

1) Luminous intensity is measured with an accuracy of ±11%
2) Forward voltage is measure with an accuracy of ±0.1V
3) Dominant wavelength is measured with an accuracy of ±1nm
4) The parts above come in a standard quantity of 1025 and 2050 pieces per reel

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BIN INFORMATION FOR L955LELPGLBC

RED

Symbol	I_V		V_F		λ_D	
Parameter	Luminous Intensity		Forward Voltage		Dominant Wavelength	
Condition	I_F = 20mA		I_F = 20mA			
Unit	mcd		V		nm	
Binning	Grade	Range	Grade	Range	Grade	Range
	R3	100 – 140	Typ.	1.8	FULL	620 – 630
	S3	140 – 200	Max.	2.45		

GREEN

Symbol	I_V		V_F		λ_D	
Parameter	Luminous Intensity		Forward Voltage		Dominant Wavelength	
Condition	I_F = 20mA		I_F = 20mA			
Unit	mcd		V		nm	
Binning	Grade	Range	Grade	Range	Grade	Range
	S3	140 – 200	Typ.	3.7	A	521 – 526
	T3	200 – 285	Max.	4.25	B	526 – 531
					C	531 – 536

BLUE

Symbol	I_V		V_F		λ_D	
Parameter	Luminous Intensity		Forward Voltage		Dominant Wavelength	
Condition	I_F = 20mA		I_F = 20mA			
Unit	mcd		V		nm	
Binning	Grade	Range	Grade	Range	Grade	Range
	N3	35.5 – 50.5	Typ.	3.6	A	465 – 470
	P3	50.5 – 71.5	Max.	4.25	B	470 – 475
	Q3	71.5 – 100				

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BIN INFORMATION FOR L955UEUPGUBC

RED

Symbol	I_V		V_F		λ_D	
Parameter	Luminous Intensity		Forward Voltage		Dominant Wavelength	
Condition	I_F = 20mA		I_F = 20mA			
Unit	mcd		V		nm	
Binning	Grade	Range	Grade	Range	Grade	Range
	S3	140 – 200	Typ.	1.8	FULL	618 – 628
	T3	200 – 285	Max.	2.45		

GREEN

Symbol	I_V		V_F		λ_D	
Parameter	Luminous Intensity		Forward Voltage		Dominant Wavelength	
Condition	I_F = 20mA		I_F = 20mA			
Unit	mcd		V		nm	
Binning	Grade	Range	Grade	Range	Grade	Range
	U3	285 – 400	Typ.	3.7	A	521 – 526
	V3	400 – 560	Max.	4.25	B	526 -531
					C	531 – 536

BLUE

Symbol	I_V		V_F		λ_D	
Parameter	Luminous Intensity		Forward Voltage		Dominant Wavelength	
Condition	I_F = 20mA		I_F = 20mA			
Unit	mcd		V		nm	
Binning	Grade	Range	Grade	Range	Grade	Range
	R3	100 – 140	Typ.	3.6	A	465 – 470
	S3	140 – 200	Max.	4.25	B	470 – 475

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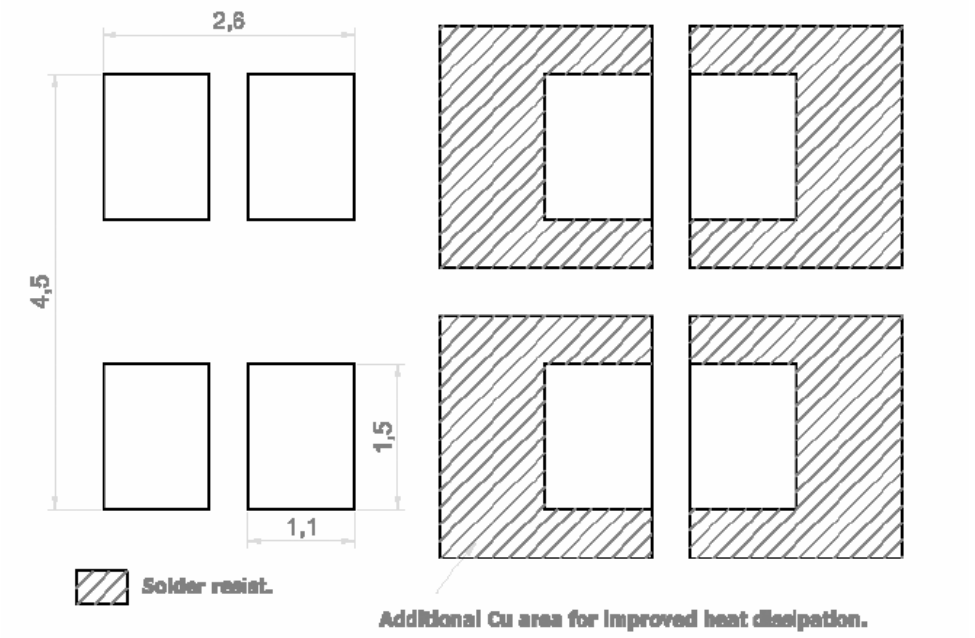
Electrical Characteristics at Ta = 25°C

Symbol	Temperature coefficient of V_f (I_f = 20mA; -10°C < T< 100°C)
	Typ. (mV/K)
Red	-2.0
Green	-3.6
Blue	-3.1

Optical Characteristics at Ta = 25°C

Symbol	Temperature coefficient of V_f (I_f = 20mA; -10°C < T< 100°C, typ.)		Viewing Angle
	λ_{peak} (nm/K)	λ_{dom} (nm/K)	degree
Red	0.15	0.05	120
Green	0.04	0.03	
Blue	0.04	0.02	

Recommended Solder Pad



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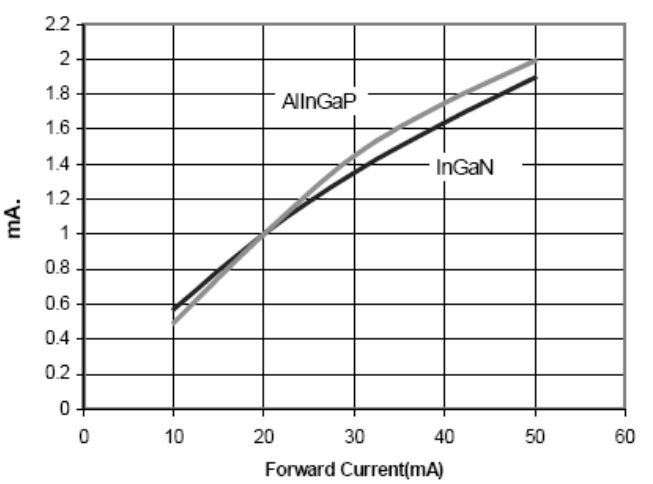
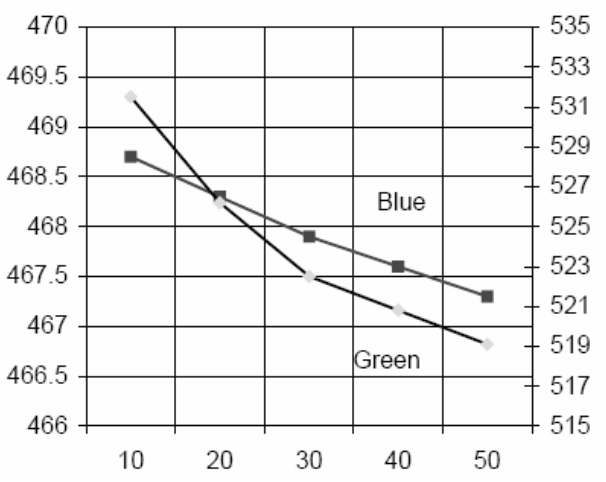
TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES

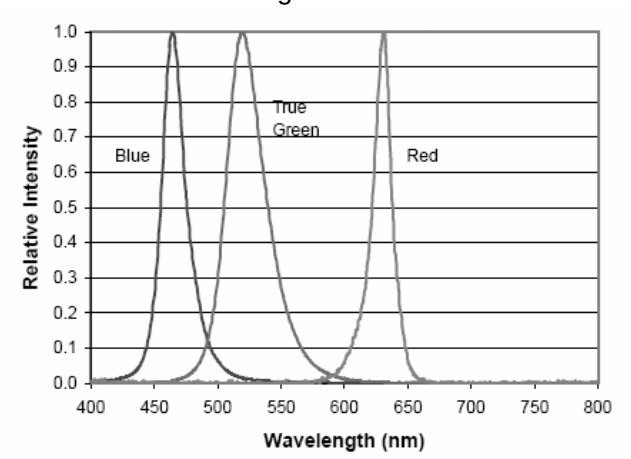
Intensity vs. DC Forward Current



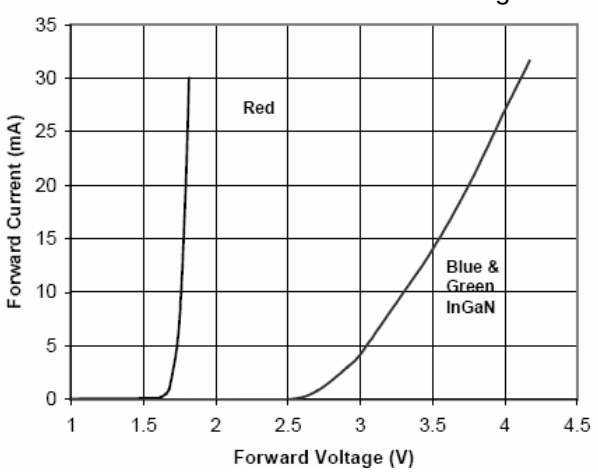
Wavelength vs. Forward Current



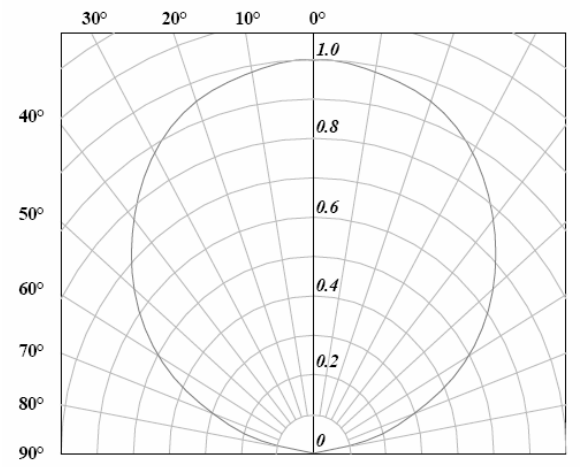
Wavelength Distribution



Forward Current vs. Forward Voltage



Radiation Pattern



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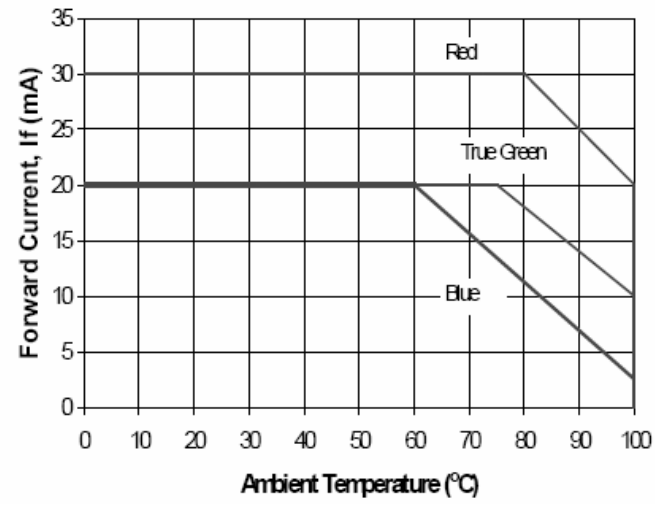
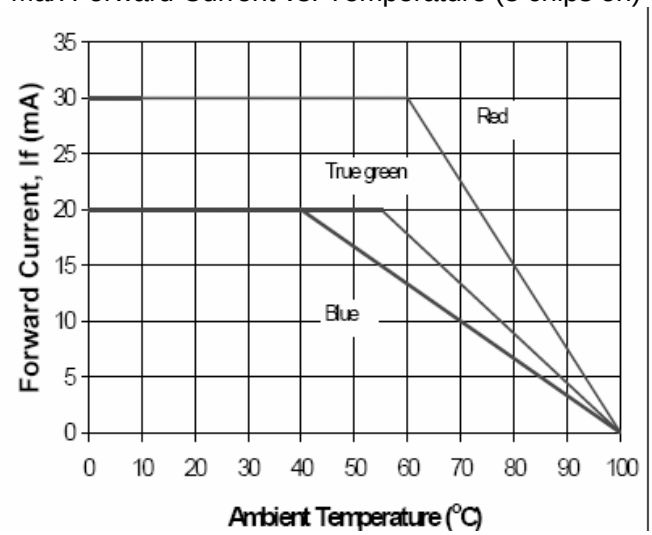
TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES

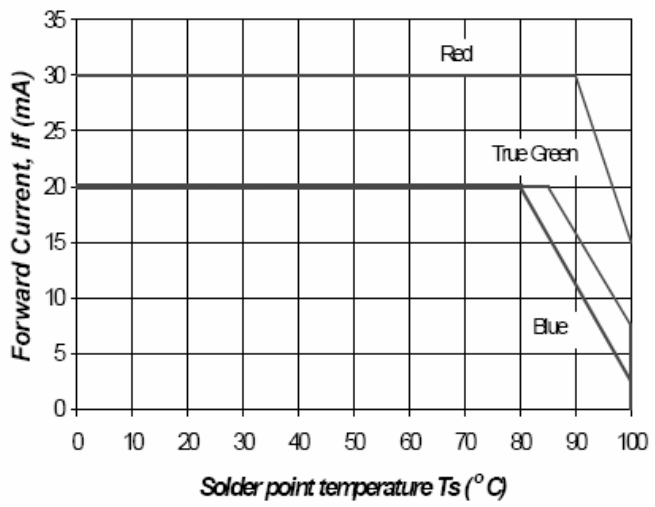
Max Forward Current vs. Temperature (1 chip on)



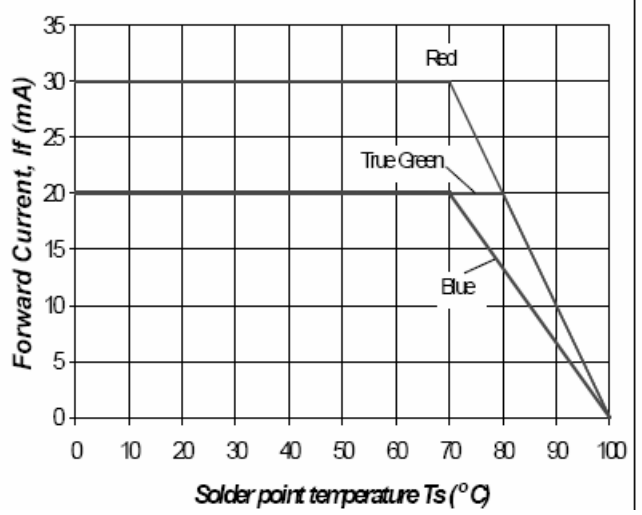
Max Forward Current vs. Temperature (3 chips on)



Max Forward Current vs. Temperature (1 chip on)



Max Forward Current vs. Temperature (3 chips on)



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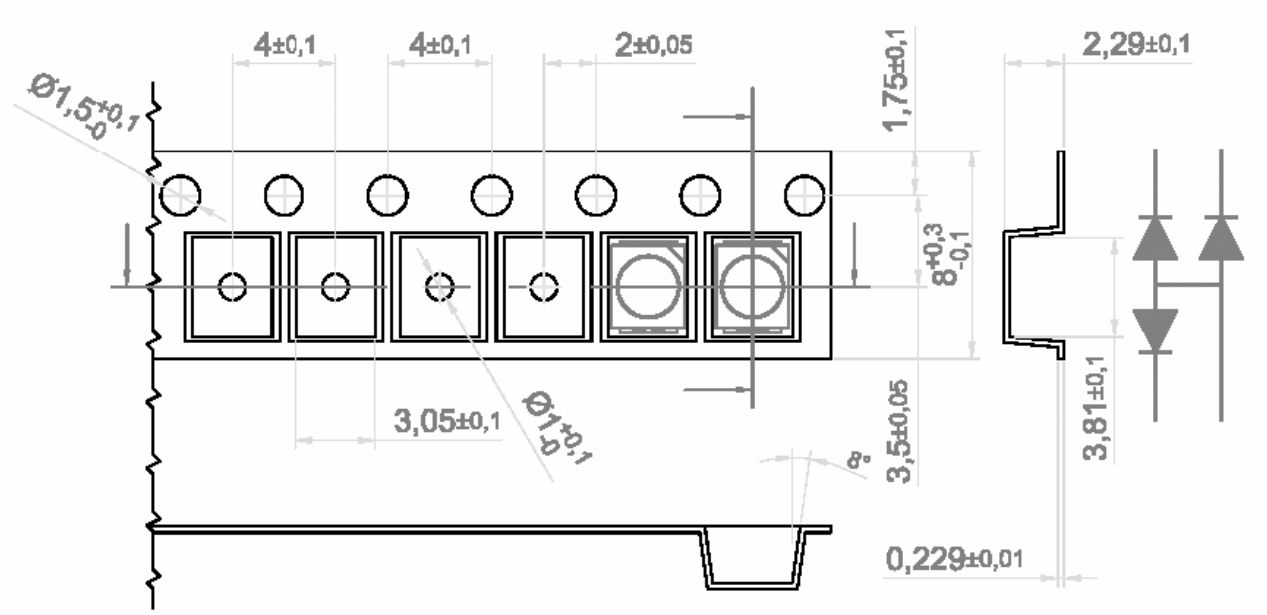
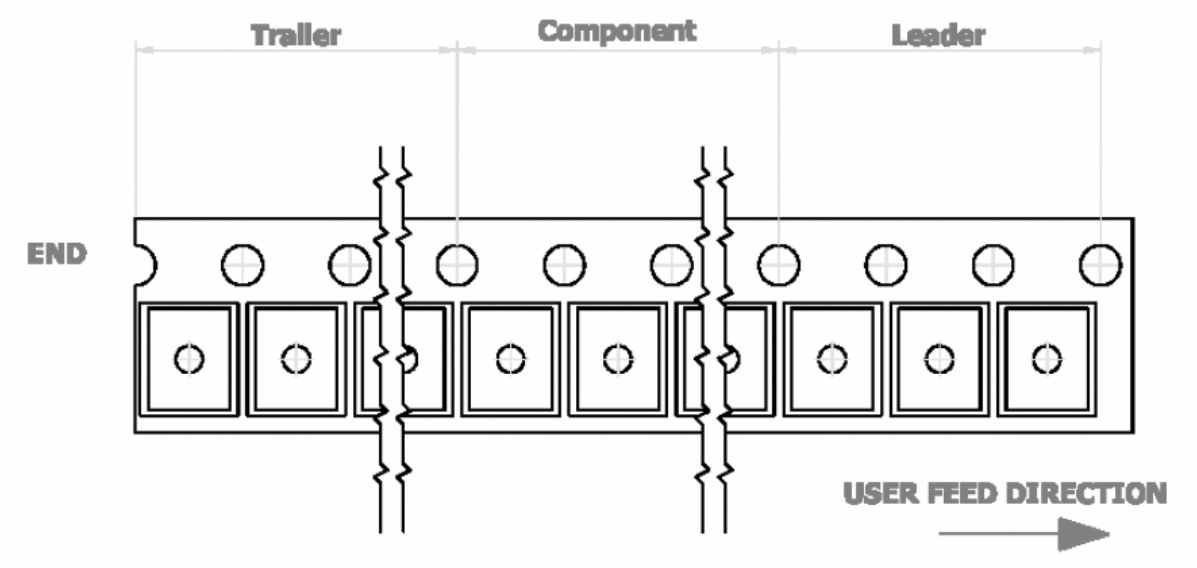
TAPING AND ORIENTATION

Reels come in quantity of 1025 and 2050 units. Reel diameter is 180mm



200mm mln. For ∅180 reel
200mm mln. For ∅330 reel

480mm mln. For ∅180 reel
960mm mln. For ∅330 reel



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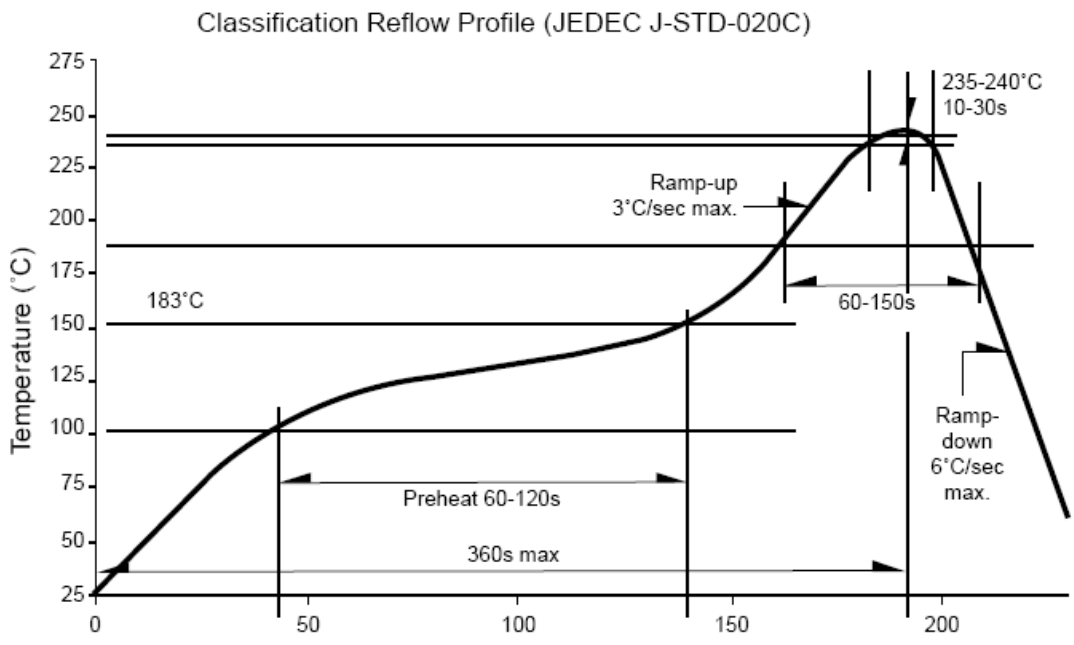
RECOMMENDED Sn-PB IR-REFLOW SOLDERING PROFILE



RECOMMENDED Pb-Free SOLDERING PROFILE