

ENEMAX

Data Sheet

60mA InGaN White – EW4014P-0601

Features:

- Super high brightness surface mount LED.
- 120° viewing angle.
- Compact package outline (LxW) of 4.0 x 1.4 mm.
- Ultra low height profile – 0.7mm.
- Low thermal resistance.
- Compatible to IR reflow soldering.
- Good color rendering index CRI min 70.
- Environmental friendly, RoHS compliance



Applications:

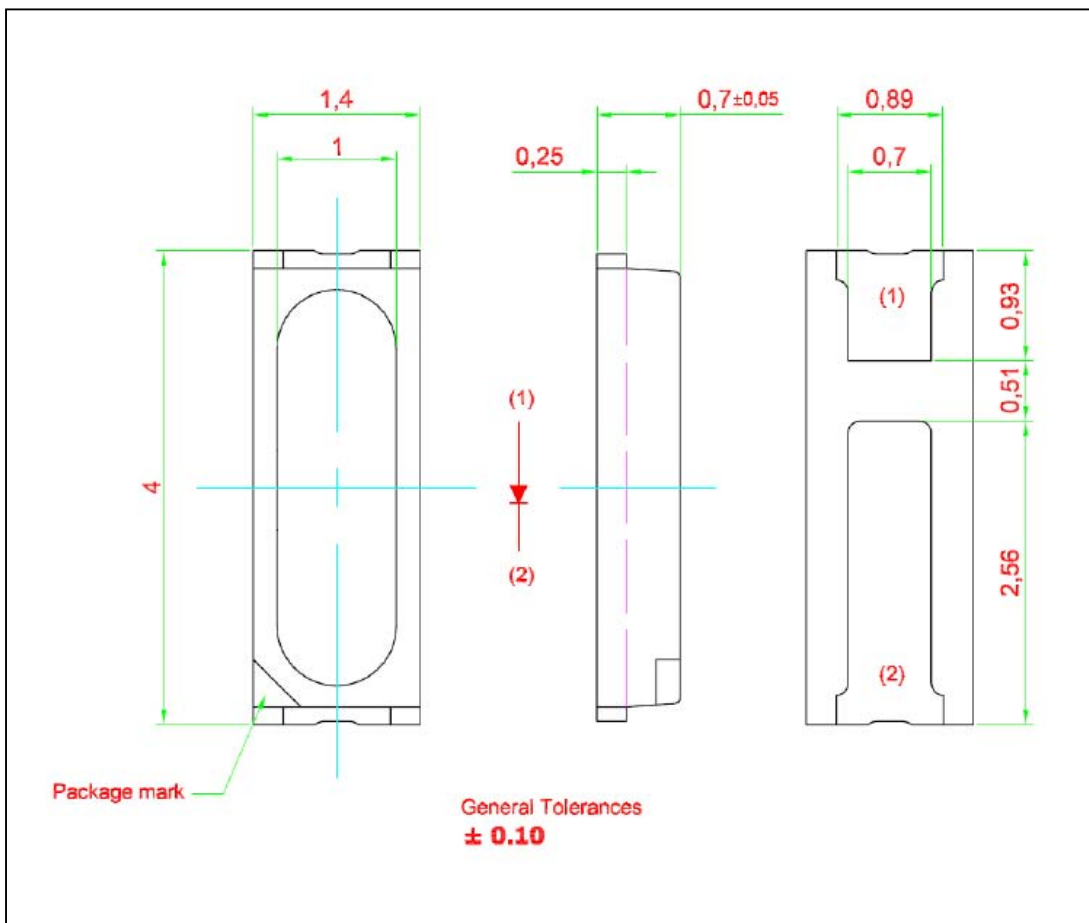
- Lighting: general lighting eg. LED bulb, channel lighting.

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Package Outline Dimensions



Material

	Material
Lead-frame.	Cu Alloy With Ag Plating.
Package.	High Temperature Resistant Plastic, PPA.
Encapsulant	Silicone Resin.
Soldering Leads.	Ag Plating.

Note: This product is Pb free.

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Optical Characteristics at Tj=25°C

Part Number	Color	Luminous Intensity @ If=60mA (mcd)			Viewing Angle
		Min	Typ.	Max	
EW4014P-0601-4ZDA-1	White	6370.0	7685.0	9000.0	120°

1. Luminous flux is measured with an accuracy of $\pm 11\%$.
2. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.

Electrical Characteristics at Tj=25°C

Part Number	Vf @ If=60mA		
	Min. (V)	Typ. (V)	Max. (V)
EW4014P-0601	2.9	3.2	3.6

Forward voltage, Vf is measured with a current pulse of 1 ms and an accuracy of ± 0.1 V.

Absolute Maximum Ratings

	Maximum Value	Unit
DC forward current.	70	mA
Peak pulse current	100	mA
Reverse voltage.	5	V
LED junction temperature.	125	°C
Operating temperature.	-40 ... +85	°C
Storage temperature.	-40 ... +100	°C

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Luminous Intensity Group at Tj=25°C.

Bin	Luminous Intensity @ If = 60mA (mcd)		Flux @ If = 60mA (lm)
	Min	Max	Typ
4Z	6370.0	7150.0	19.6
CA	7150.0	8070.0	22.1
DA	8070.0	9000.0	24.8

Vf Binning

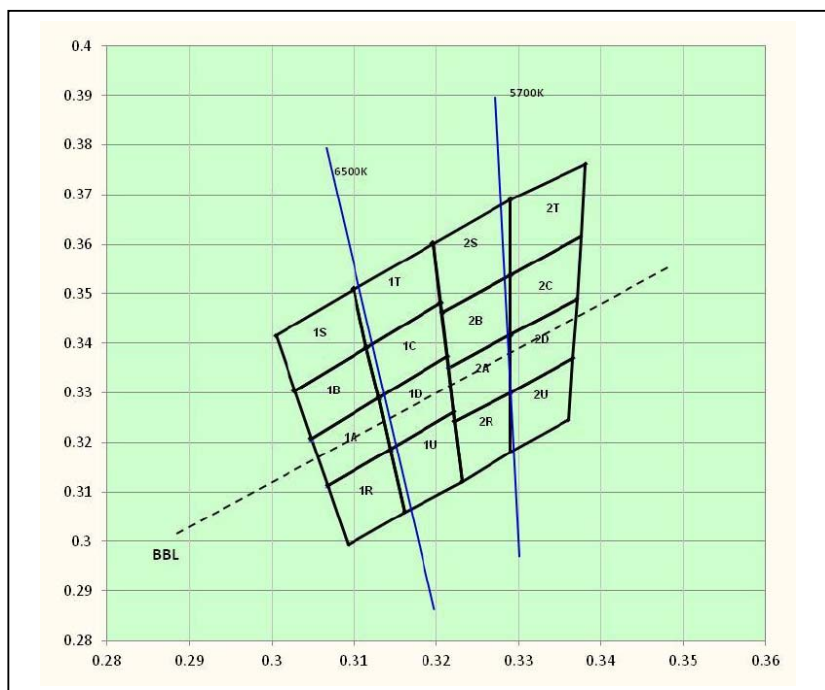
Vf Bin @ 60mA	Forward Voltage (V)
V1	2.90 – 3.00
V2	3.00 – 3.10
V3	3.10 – 3.20
V4	3.20 – 3.30
V5	3.30 – 3.40
V6	3.40 – 3.50
V7	3.50 – 3.60

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White Color Bin Structure



Chromaticity coordinate groups are measured with an accuracy of ± 0.01 .

Bin		1	2	3	4
1R	Cx	0.3068	0.3144	0.3161	0.3093
	Cy	0.3113	0.3186	0.3059	0.2993
1A	Cx	0.3048	0.3130	0.3144	0.3068
	Cy	0.3207	0.3290	0.3186	0.3113
1B	Cx	0.3028	0.3115	0.3130	0.3048
	Cy	0.3304	0.3391	0.3290	0.3207
1S	Cx	0.3005	0.3099	0.3115	0.3028
	Cy	0.3415	0.3509	0.3391	0.3304
1T	Cx	0.3099	0.3196	0.3205	0.3115
	Cy	0.3509	0.3602	0.3481	0.3391
1C	Cx	0.3115	0.3205	0.3213	0.3130
	Cy	0.3391	0.3481	0.3373	0.3290
1D	Cx	0.3130	0.3213	0.3221	0.3144
	Cy	0.3290	0.3373	0.3261	0.3186
1U	Cx	0.3144	0.3221	0.3231	0.3161
	Cy	0.3186	0.3261	0.3120	0.3059

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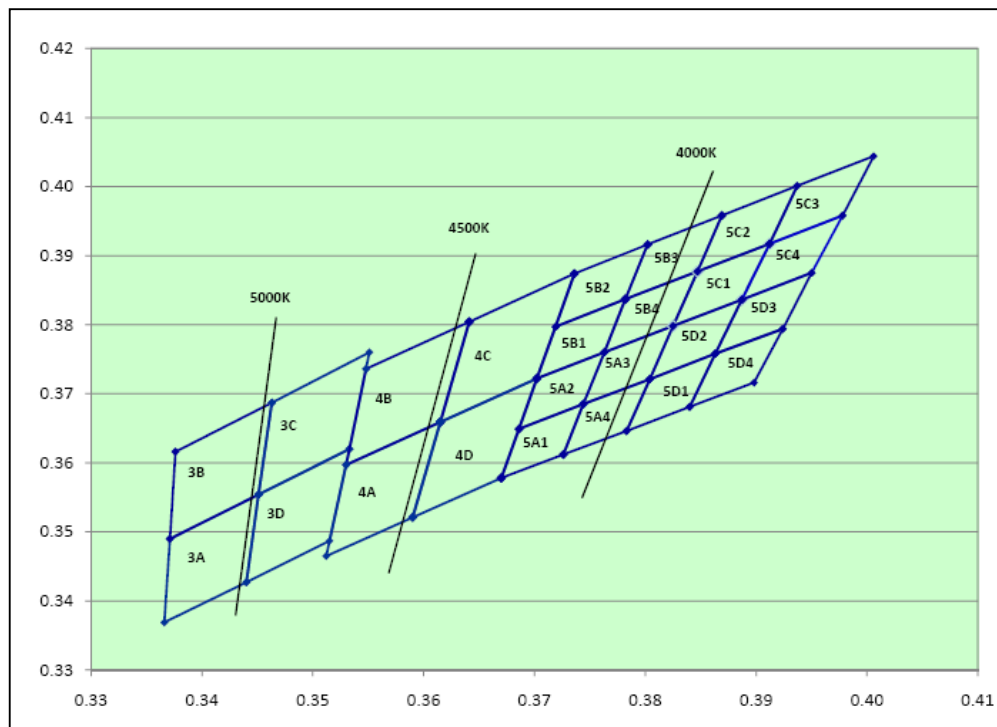
Bin		1	2	3	4
2R	Cx	0.3222	0.3290	0.3290	0.3231
	Cy	0.3243	0.3300	0.3180	0.3120
2A	Cx	0.3215	0.3290	0.3290	0.3222
	Cy	0.3350	0.3417	0.3300	0.3243
2B	Cx	0.3207	0.3290	0.3290	0.3215
	Cy	0.3462	0.3538	0.3417	0.3350
2S	Cx	0.3196	0.3290	0.3290	0.3207
	Cy	0.3602	0.3690	0.3538	0.3462
2T	Cx	0.3290	0.3381	0.3376	0.3290
	Cy	0.3690	0.3762	0.3616	0.3538
2C	Cx	0.3290	0.3376	0.3371	0.3290
	Cy	0.3538	0.3616	0.3490	0.3417
2D	Cx	0.3290	0.3371	0.3366	0.3290
	Cy	0.3417	0.3490	0.3369	0.3300
2U	Cx	0.3290	0.3366	0.3361	0.3290
	Cy	0.3300	0.3369	0.3245	0.3180

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White Color Bin Structure



Chromaticity coordinate groups are measured with an accuracy of ± 0.01 .

Bin		1	2	3	4
3A	Cx	0.3371	0.3451	0.344	0.3366
	Cy	0.349	0.3554	0.3427	0.3369
3B	Cx	0.3376	0.3463	0.3451	0.3371
	Cy	0.3616	0.3687	0.3554	0.349
3C	Cx	0.3463	0.3551	0.3533	0.3451
	Cy	0.3687	0.376	0.362	0.3554
3D	Cx	0.3451	0.3533	0.3515	0.344
	Cy	0.3554	0.362	0.3487	0.3427
4A	Cx	0.353	0.3615	0.359	0.3512
	Cy	0.3597	0.3659	0.3521	0.3465
4B	Cx	0.3548	0.3641	0.3615	0.353
	Cy	0.3736	0.3804	0.3659	0.3597
4C	Cx	0.3641	0.3736	0.3702	0.3615
	Cy	0.3804	0.3874	0.3722	0.3659
4D	Cx	0.3615	0.3702	0.367	0.359
	Cy	0.3659	0.3722	0.3578	0.3521

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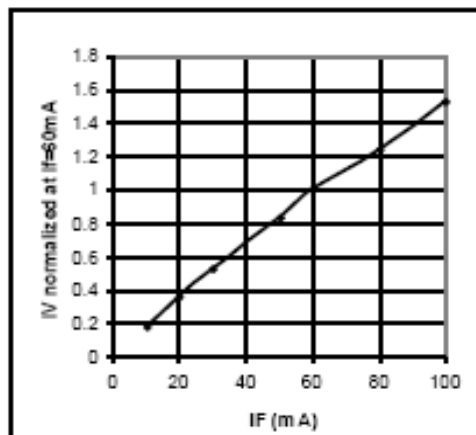
Bin		1	2	3	4
5A1	Cx	0.367	0.3686	0.3744	0.3726
	Cy	0.3578	0.3649	0.3685	0.3612
5A2	Cx	0.3686	0.3702	0.3763	0.3744
	Cy	0.3649	0.3722	0.376	0.3685
5A3	Cx	0.3744	0.3763	0.3825	0.3804
	Cy	0.3685	0.376	0.3798	0.3721
5A4	Cx	0.3726	0.3744	0.3804	0.3783
	Cy	0.3612	0.3685	0.3721	0.3646
5B1	Cx	0.3702	0.3719	0.3782	0.3763
	Cy	0.3722	0.3797	0.3837	0.376
5B2	Cx	0.3719	0.3736	0.3802	0.3782
	Cy	0.3797	0.3874	0.3916	0.3837
5B3	Cx	0.3782	0.3802	0.3869	0.3847
	Cy	0.3837	0.3916	0.3958	0.3877
5B4	Cx	0.3763	0.3782	0.3847	0.3825
	Cy	0.376	0.3837	0.3877	0.3798
5C1	Cx	0.3825	0.3847	0.3912	0.3887
	Cy	0.3798	0.3877	0.3917	0.3836
5C2	Cx	0.3847	0.3869	0.3937	0.3912
	Cy	0.3877	0.3958	0.4001	0.3917
5C3	Cx	0.3912	0.3937	0.4006	0.3978
	Cy	0.3917	0.4001	0.4044	0.3958
5C4	Cx	0.3887	0.3912	0.3978	0.395
	Cy	0.3836	0.3917	0.3958	0.3875
5D1	Cx	0.3783	0.3804	0.3863	0.384
	Cy	0.3646	0.3721	0.3758	0.3681
5D2	Cx	0.3804	0.3825	0.3887	0.3863
	Cy	0.3721	0.3798	0.3836	0.3758
5D3	Cx	0.3863	0.3887	0.395	0.3924
	Cy	0.3758	0.3836	0.3875	0.3794
5D4	Cx	0.384	0.3863	0.3924	0.3898
	Cy	0.3681	0.3758	0.3794	0.3716

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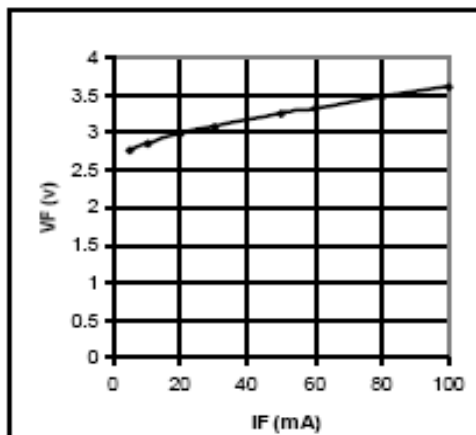
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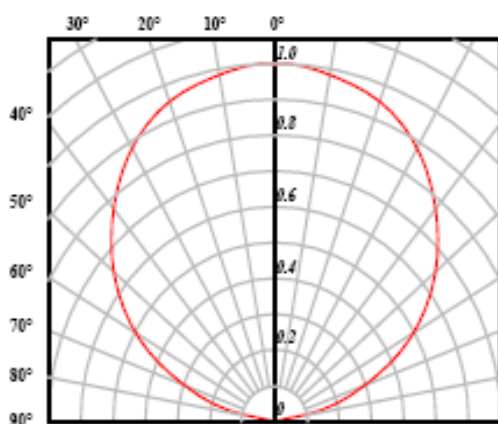
Relative intensity vs. forward current



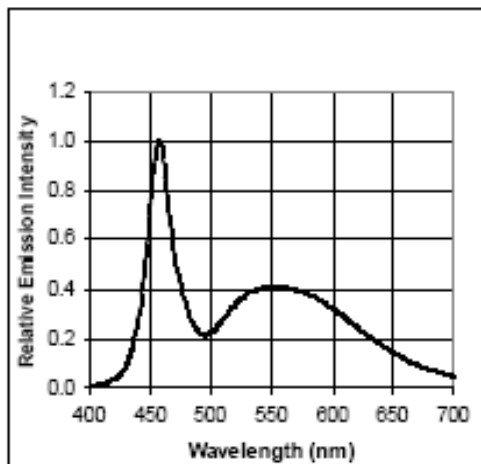
Forward voltage vs. forward current



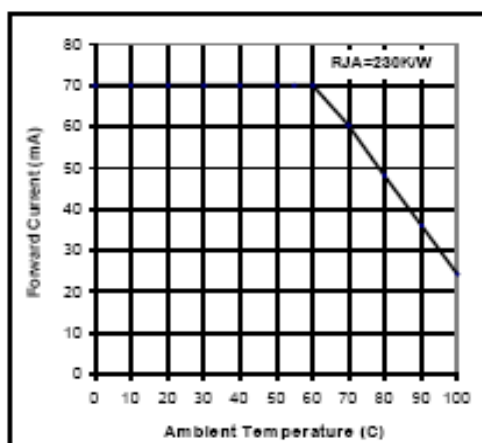
Radiation pattern.



Color Spectrum.



Max current vs. Ambient Temperature

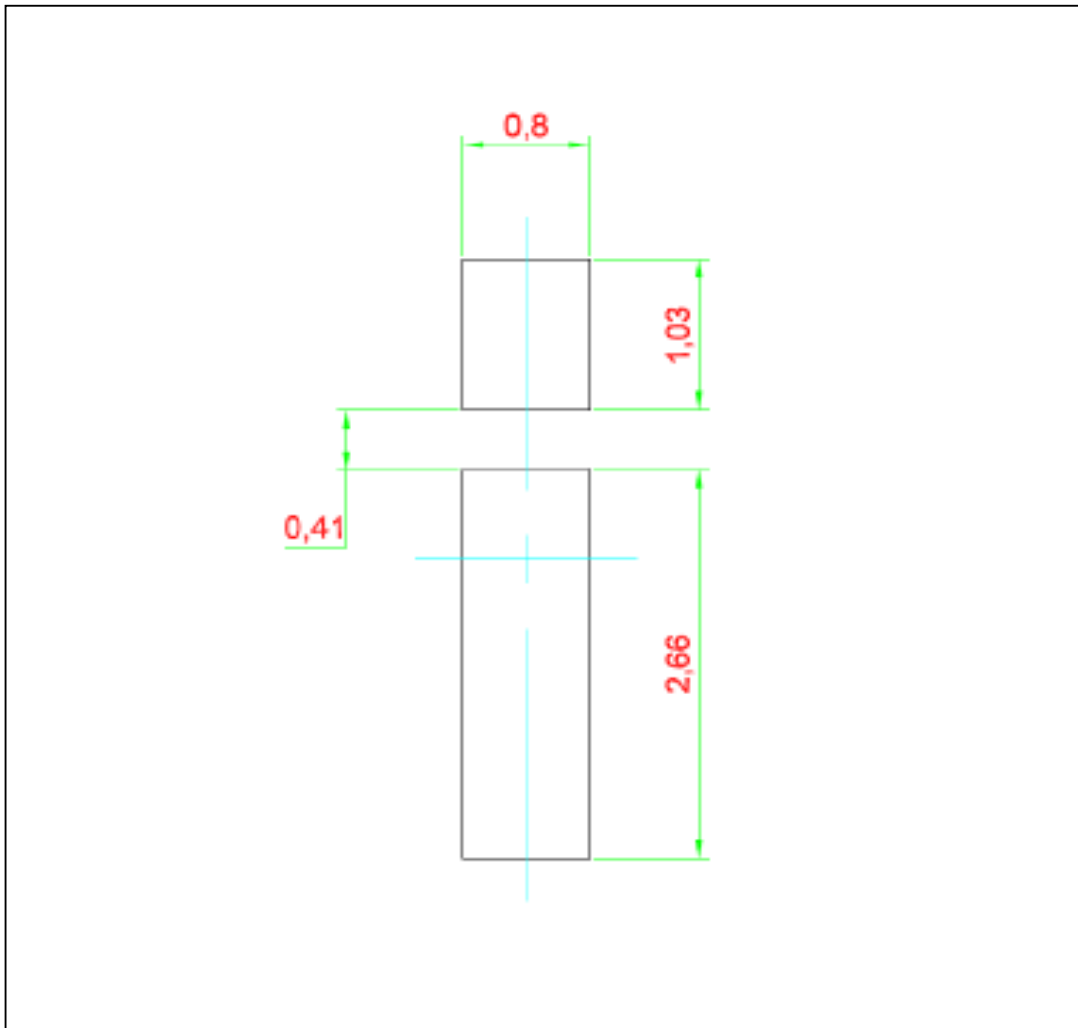


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Solder Pad Design



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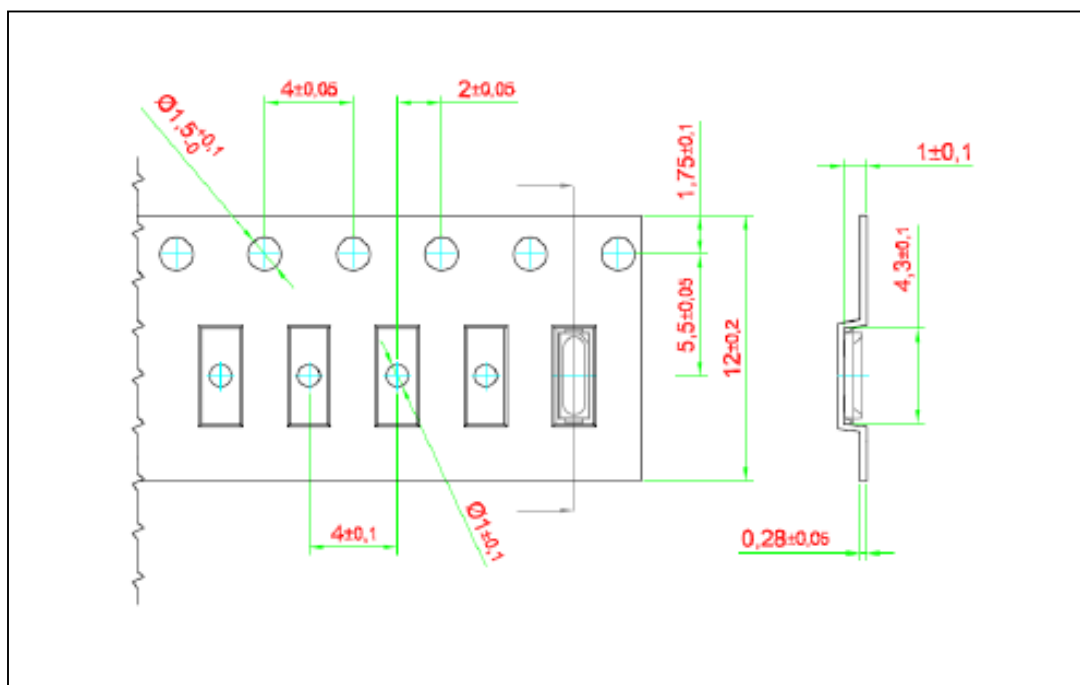
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Taping And Orientation

Reels come in quantity of 2000 units.

Reel diameters are 180 mm.



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Recommended Pb Free IR-Reflow Soldering Profile.

