

HVCW-3433EES



3433 PLCC6

Products Series

High luminous efficiency, consistency, stability and reliability, it is mainly used in automobile applications.

- PPA
- 50% I_v 120
- $C_x=0.33, C_y=0.33$ CIE1931
- AEC-Q102 & IEC 60810

Features

- Package Colored diffused silicone in white PPA cup
- Viewing angle at 50% I_v : 120
- Color: $C_x=0.33, C_y=0.33$ acc.to CIE1931
- Qualifications: Passed reliability test per AEC-Q102 & IEC 60810 requirement

Applications



- Signaling
- Interior and exterior lighting for automotive

Ordering Information

Type	Luminous Intensity I _v @ I _f =140mA	Ordering Code
HVCW-3433EES- <u>XXXX</u> - <u>XXXX</u> - <u>XX</u> Brightness Chromaticity Forward Coordinate Voltage	7.10 -14.00 cd	XXXXXX

- | | | |
|------------------------------------|---|----------|
| HVCW-3433EES- <u>EAFA</u> -XXXX-XX | 4 | EA EB FA |
|------------------------------------|---|----------|
- | | | |
|------------------------------------------------------------------|---|----------------|
| HVCW-3433EES-XXXX- <u>JKQL</u> -XX
LL MK ML NK NL OK OL QK QL | 5 | JK JL KK KL LK |
|------------------------------------------------------------------|---|----------------|
- | | | |
|-----------------------------------|---|---------|
| HVCW-3433EES-XXXX-XXXX- <u>47</u> | 4 | 4 5 6 7 |
|-----------------------------------|---|---------|

Note

- **Brightness Grouping**
 Only one brightness group will be packed in each reel. Please refer to page #4 for details.
 E.g.: HVCW-3433EES-EAFA-XXXX-XX, means only one bin of EA, EB or FA is in each reel.
- **Chromaticity Coordinate Groups**
 Only one Chromaticity Coordinate group will be packed in each reel. Please refer to page #5 for details.
 E.g.: HVCW-3433EES-XXXX-JKQL-XX, means only one bin of JK JL KK KL LK LL MK ML NK NL OK OL QK or QL is in each reel.
- **Forward Voltage Groups**
 Only one forward voltage group will be packed in each reel. Please refer to page #4 for details.
 E.g.: HVCW-3433EES-XXXX-XXXX-47, means only one bin of 4, 5, 6 or 7 is in each reel.

Maximum Ratings

Parameters	Symbol	Rating	Unit
Junction Temperature	T_j	125	
Forward Current ($T_s=25$)	I_f	250	mA
Peak Forward Current ($t \leq 10\mu s$ $D=0.005$ $T_s=25$)	I_{fp}	750	mA
Reverse Voltage ($T_s=25$)	V_r	12	V
Electrostatic Discharge (HBM)	V_{ESD}	not designed for reverse operation	V
Operating Temperature	T_{opr}	-40 ~ +110	
Storage Temperature	T_{stg}	-40 ~ +110	

Characteristics (T_s $I_f = 140$ mA)

Parameters		Symbol	Rating	Unit
Chromaticity coordinates acc. to CIE 1931	typ.	C_x	0.33	nm
		C_y	0.33	
50 % I_v	Viewing Angle at 50 % I_v	typ.	120	
Forward Voltage	min.	V_f	2.90	V
	typ.	V_f	3.30	V
	max	V_f	4.10	V
Reverse Current ($V_R=12V$)	typ.	I_r	not designed for reverse operation	μA
	max.	I_r		μA
PN - Resistance (Junction / Solder Point)	Real Thermal max.	$R_{th JS_{real}}$	40	K/W

Brightness Grouping (T_s $f = 140 \text{ mA}$)

Grouping	Luminous Intensity I_v min.	Luminous Intensity I_v max.	Luminous Flux Φ_v typ.
EA	7.10 cd	9.00 cd	24.20 lm
EB	9.00 cd	11.20 cd	30.30 lm
FA	11.20 cd	14.00 cd	37.80 lm

Forward Voltage Grouping (T_s $f = 140 \text{ mA}$)

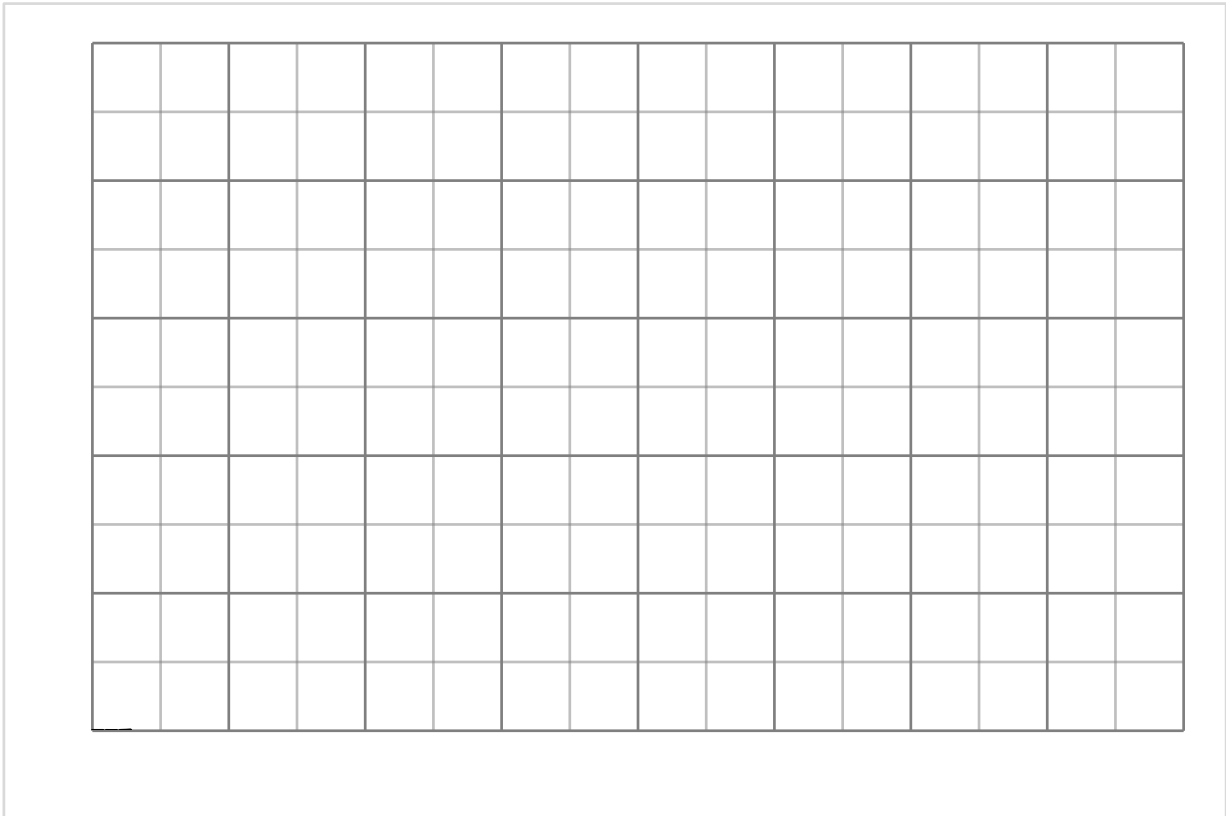
Grouping	Forward Voltage V_f min.	Forward Voltage V_f max.
4	2.90 V	3.20 V
5	3.20 V	3.50 V
6	3.50 V	3.80 V
7	3.80 V	4.10 V

Information on Label

E.g. EA-JK-4

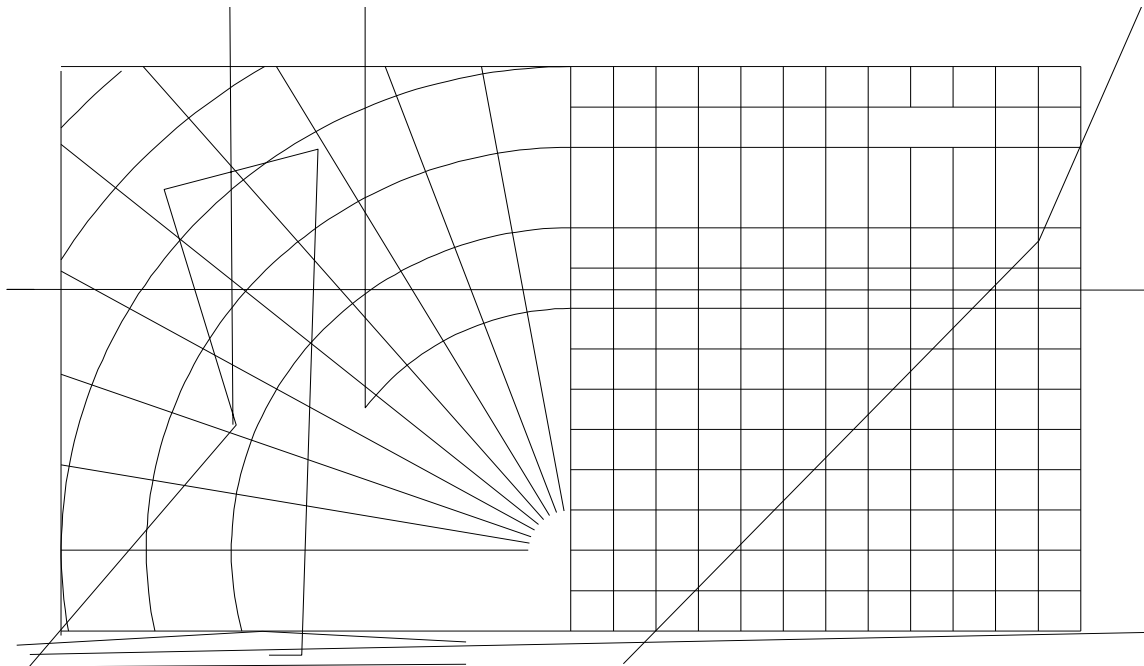
Brightness	Color	Forward Voltage
EA	JK	4

- V() =



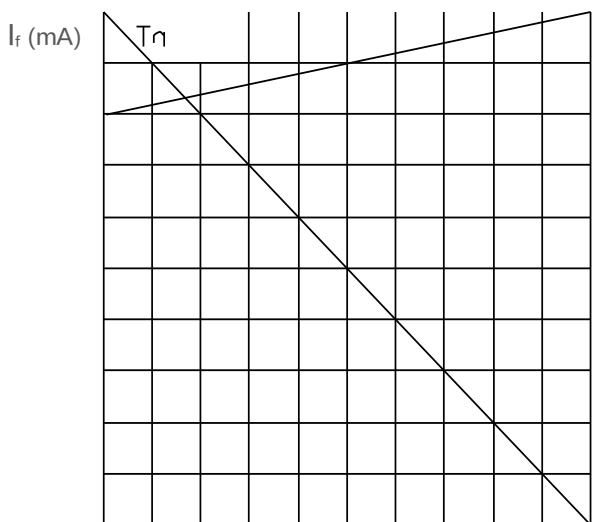
Radiation Characteristics

$I_{rel} = f(T_s = 25$



Forward Current

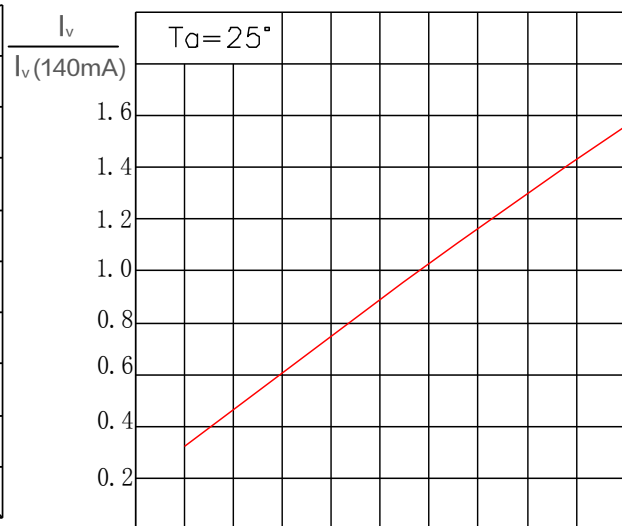
$I_f = f(V_f; T_a$



$V_f (V)$

Relative Luminous Intensity

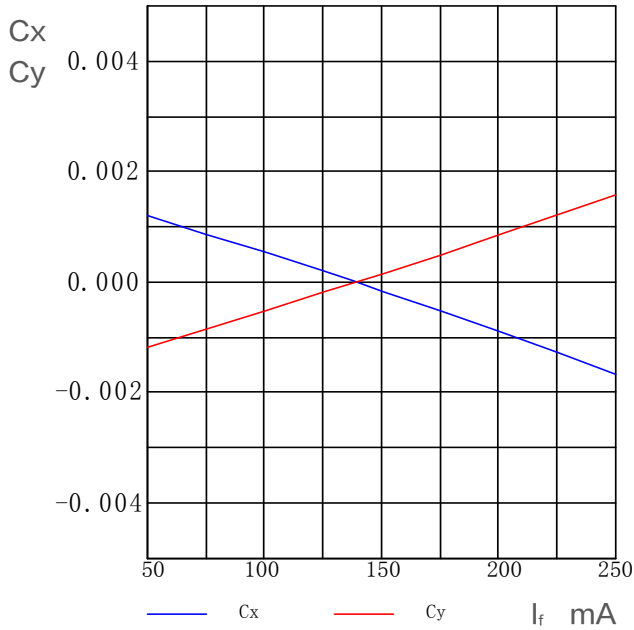
$I_v / I_v(140 mA) = f(I_f; T_a$



$I_f (mA)$

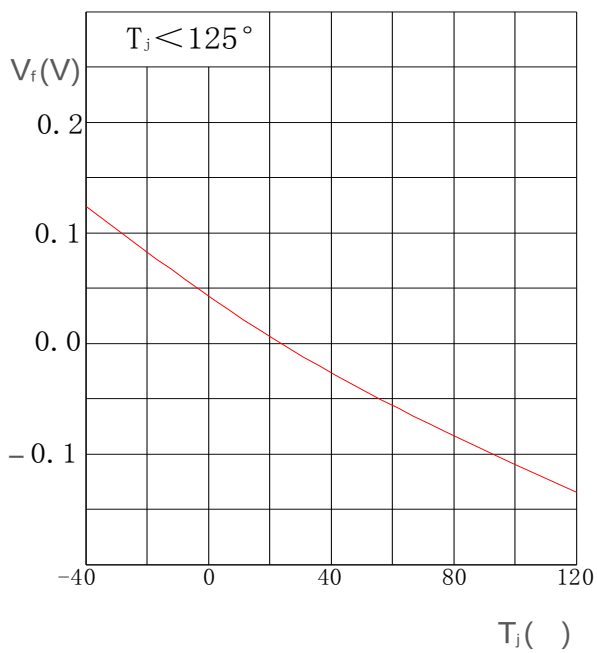
Chromaticity coordinate shift

$C_x, C_y = f(I_f); T_s = 25$



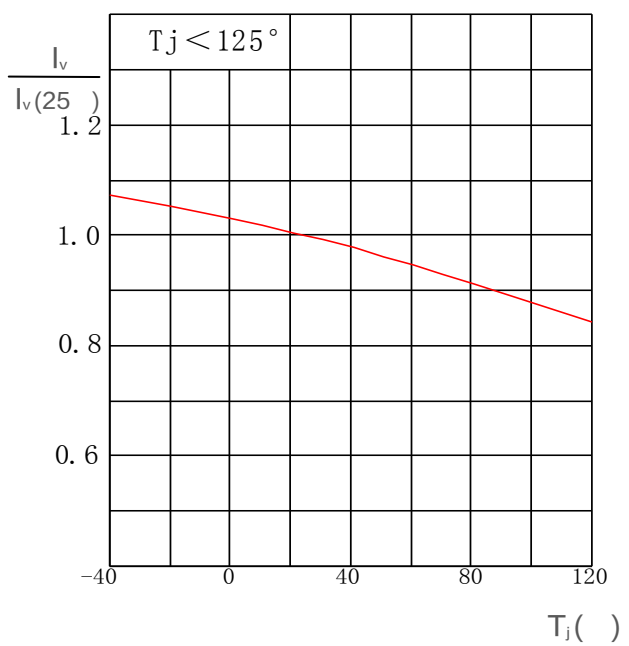
Relative Forward Voltage

$V_f = V_f - V_f$; $I_f = 140$ mA

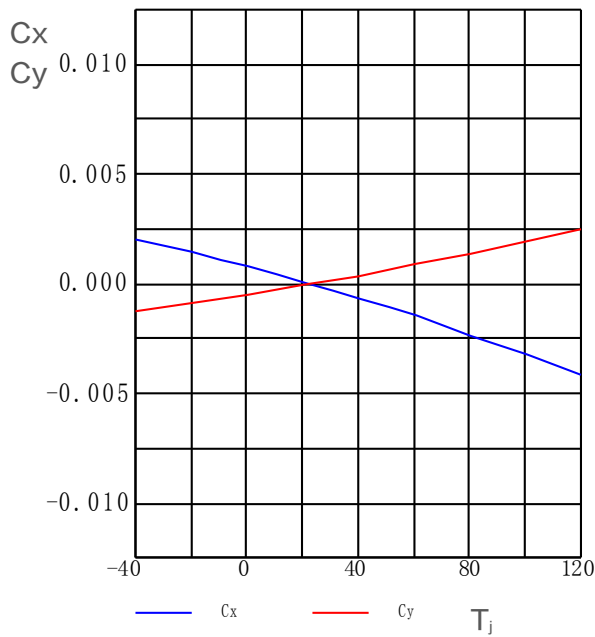


Relative Luminous Intensity

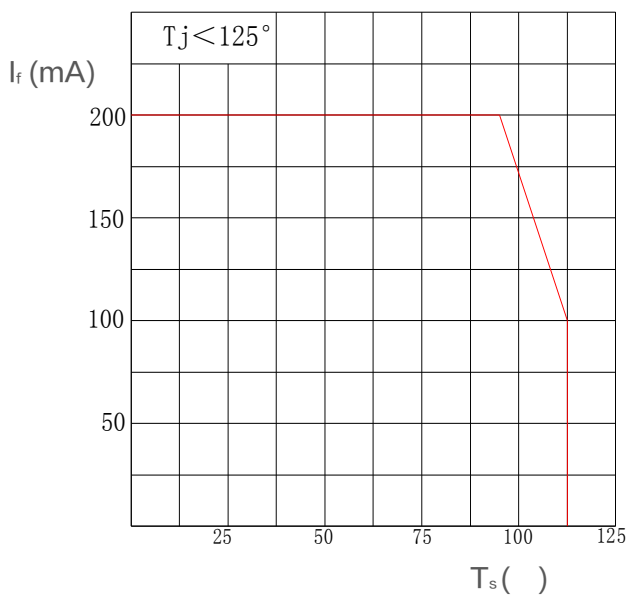
I_v / I_v ; $I_f = 140$ mA



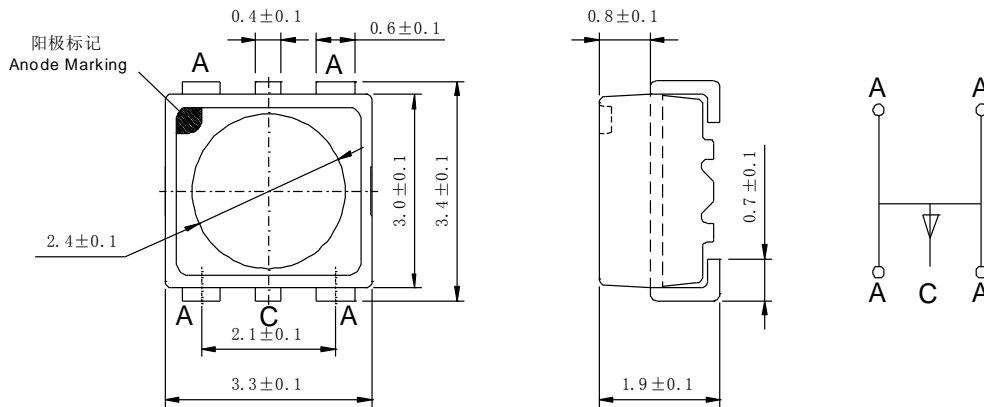
Chromaticity coordinate shift
 $C_x, C_y = f(I_f); I_f = 140\text{mA}$



Solder Point Temperature
 vs. Forward Current
 $I_f = f(T_s)$



Package Outline

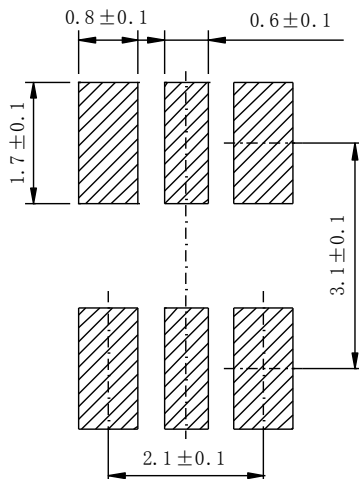


- 40mg
- Class 3B
- : 1) H₂S , 336 IEC 60068-2-43)
- 2) IEC 60068-2-60 4: 10ppb H₂S, 200ppb SO₂, 200ppb NO₂, 10ppb Cl₂)

NOTE

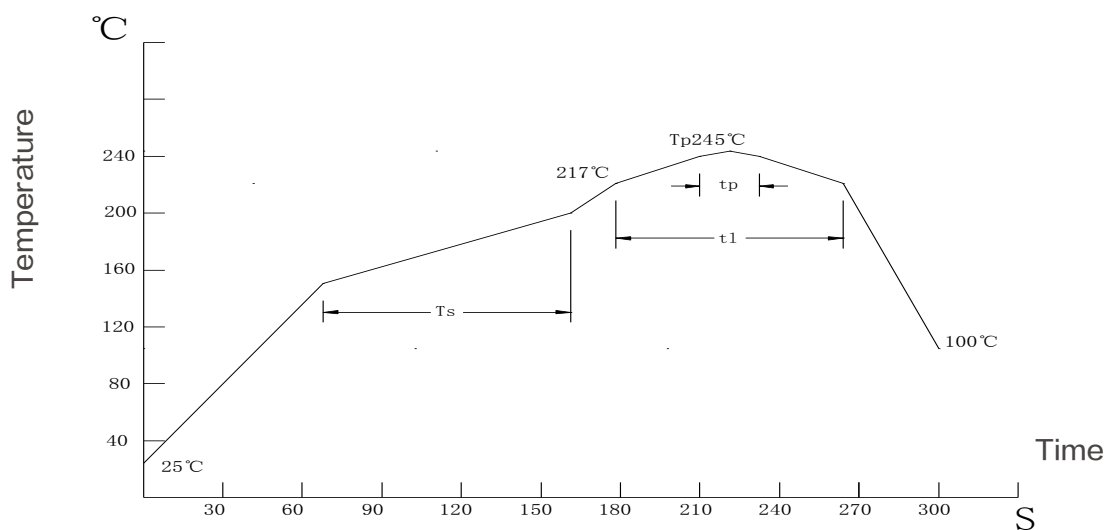
- Approximate Weight: 30mg
- Mark: Anode
- Corrosion test: Class 3B
- Test conditions: 1) H₂S test , 15ppm, 336hours
(Standards IEC 60068-2-43)
- 2) Flowing
(Standards IEC 60068-2-60 test method 4: 10ppb H₂S, 200ppb SO₂, 200ppb NO₂, 10ppb Cl₂)

Recommended Solder Pad



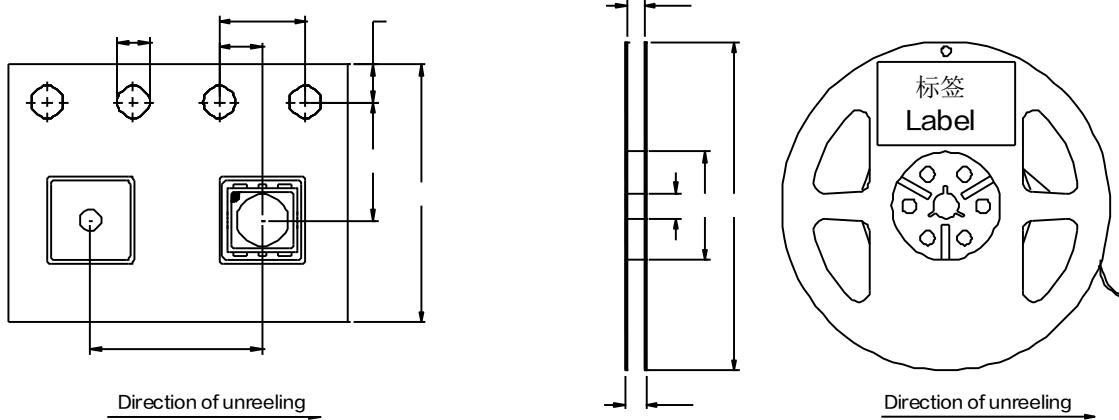
- NOTE
- Package not suitable for ultrasonic cleaning

Reflow Soldering Profile



Profile Feature	Symbol	Pb-Free (SnAgCu) Assembly			Unit
		min.	rec.	max.	
Ramp-up Rate to Preheat 25 -150	-	-	2	3	/s
Time T_{smin} to T_{smax}	T_s	60	100	120	s
Ramp-up Rate to Peak T_{smax} to T_p	-	-	2	3	s
Liquidus Temperature	T_l	-	217	-	-
Time above Liquidus Temperature	t_l	-	80	100	s
Peak Temperature	T_p	-	245	260	-
Time within 5 of the Specified Peak Temperature	t_p	10	20	30	s
Ramp-down Rate T_p to 100	-	-	3	6	s
Time 25 to T_p	-	-	-	480	s

Tape and Reel



400 mm

160 mm

IEC 60286-3, EIA 481-

D

Leader: min. 400 mm Trailer: min. 160 mm Requirement acc. to IEC 60286-3, EIA 481-D

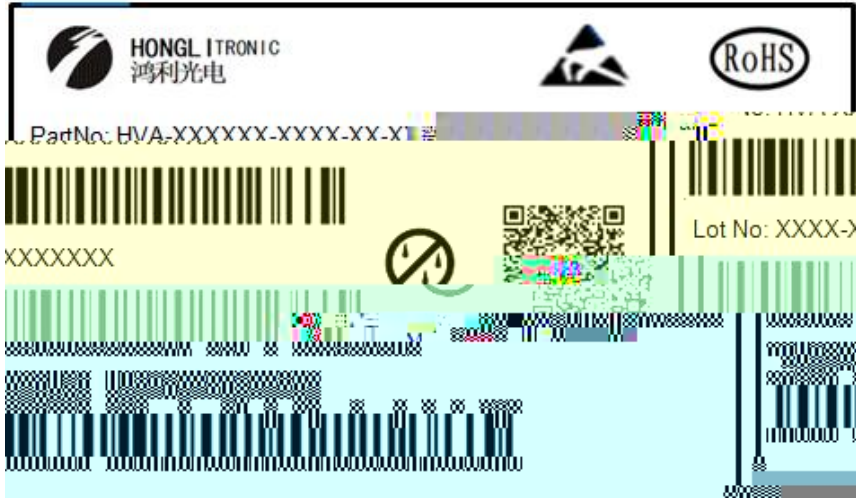
Tape Dimensions mm

W	P0	P1	P2	D0	E	F
8 0.1	4 0.1	4 0.1	2 0.05	1.5 0.1	1.75 0.1	3.5 0.05

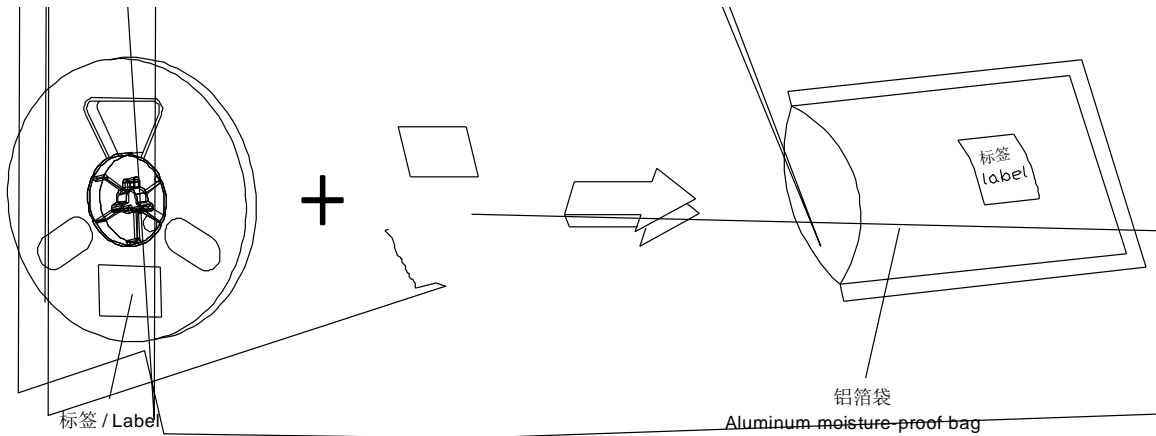
Reel Dimensions mm

A	W1	W2	N	R
177.8	9.3 0.3	11.2 0.3	58.5 0.2	13.5 0.2

Barcode-Product-Label (BPL)



Dry Packing Process and Materials

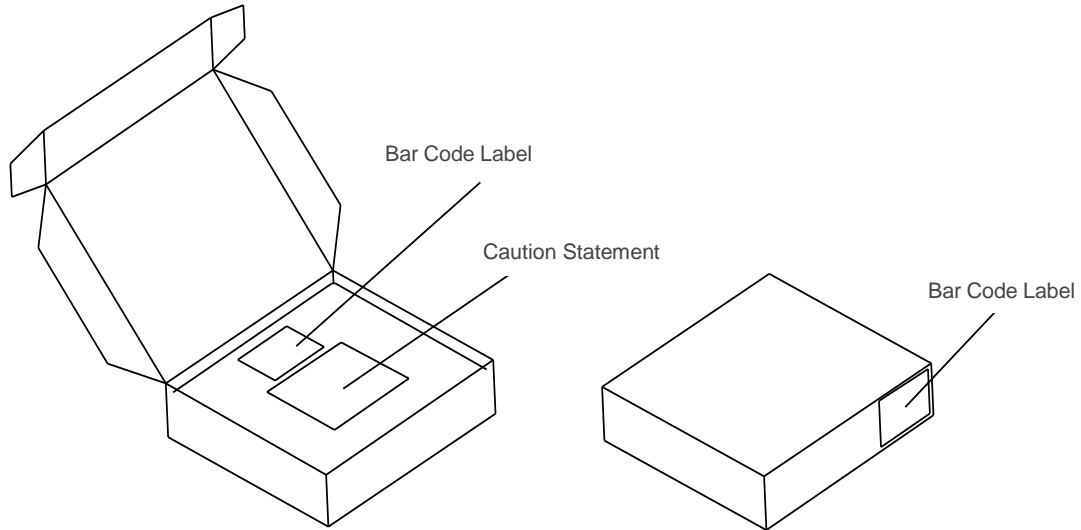


NOTE

JEDEC

Moisture-sensitive product is packed in a dry bag containing desiccant and HIC (humidity indicator card). Regarding dry pack you may find further information in the internet or JEDEC.

Transportation Packing and Materials



Dimensions of Transportation Box (mm)

Width	Length	Height
256 5	223 5	62 5
256 5	223 5	124 5

:			
:	,		
	8ms	0.05V	0.1V
	GUM K=3		
	25ms	0.005	0.01
	GUM K=3		
	25ms	8%	11%
	GUM K=3		

Glossary

Typical Values: Actual values of each product may differ from these statistical values .

Tolerance of Measure: Unless otherwise noted in drawing, tolerances are specified with +/-0.1mm.

Forward Voltage: The forward voltage is measured during a current pulse of typically 8 ms,

GUM with a coverage factor of k = 3).

Chromaticity coordinate groups: Chromaticity coordinate groups is measured at a current

Brightness: Brightness values are measured during a current pulse of typically 25 ms,

with a coverage factor of k = 3).

Special Statement: The final interpretation of this specification shall be vested in Honglitronic, in the case of ambiguity, the Chinese version shall prevail.