

HVA-3528DER



3528 PLCC4

Products Series

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

- PPA
- 50% I_v 120
- 617nm
- AEC-Q102 & IEC 60810

Features

- Package Colorless clear resin in white PPA cup
- Viewing angle at 50% I_v: 120
- Color: Amber (617nm)
- Qualifications: Passed reliability test per AEC-Q102 & IEC 60810 requirement

Applications

- Signaling
- Interior and exterior lighting for automotive

Ordering Information

Type	Luminous Intensity lv @ If=50mA	Ordering Code
HVA-3528DER - XXXX - XX -		

Maximum Ratings

Characteristics (T_s $f = 50$ mA)

Parameters		Symbol	Rating	Unit
Wavelength at Peak Emission	typ.	peak	624	nm
	min.	dom	612	nm
Dominant Wavelength	typ.	dom	617	nm
	max.	dom	624	nm

Brightness Grouping (T_s $f = 50$ mA)

Grouping	Luminous Intensity I_v min.	Luminous Intensity I_v max.	Luminous Flux Φ_v typ.
BA	1.80 cd	2.24 cd	6.10 lm
BB	2.24 cd	2.80 cd	7.64 lm
CA	2.80 cd	3.55 cd	9.50 lm
CB	3.55 cd	4.50 cd	12.10 lm

Forward Voltage Grouping (T_s $f = 50$ mA)

Grouping	Forward Voltage V_f min.	Forward Voltage V_f max.
3A	1.90 V	2.05 V
3B		

Dominant Wavelength Grouping (T_s $f = 50$ mA)

Grouping	Dominant Wavelength λ_{dom} min.	Dominant Wavelength λ_{dom} max.

Information on Label

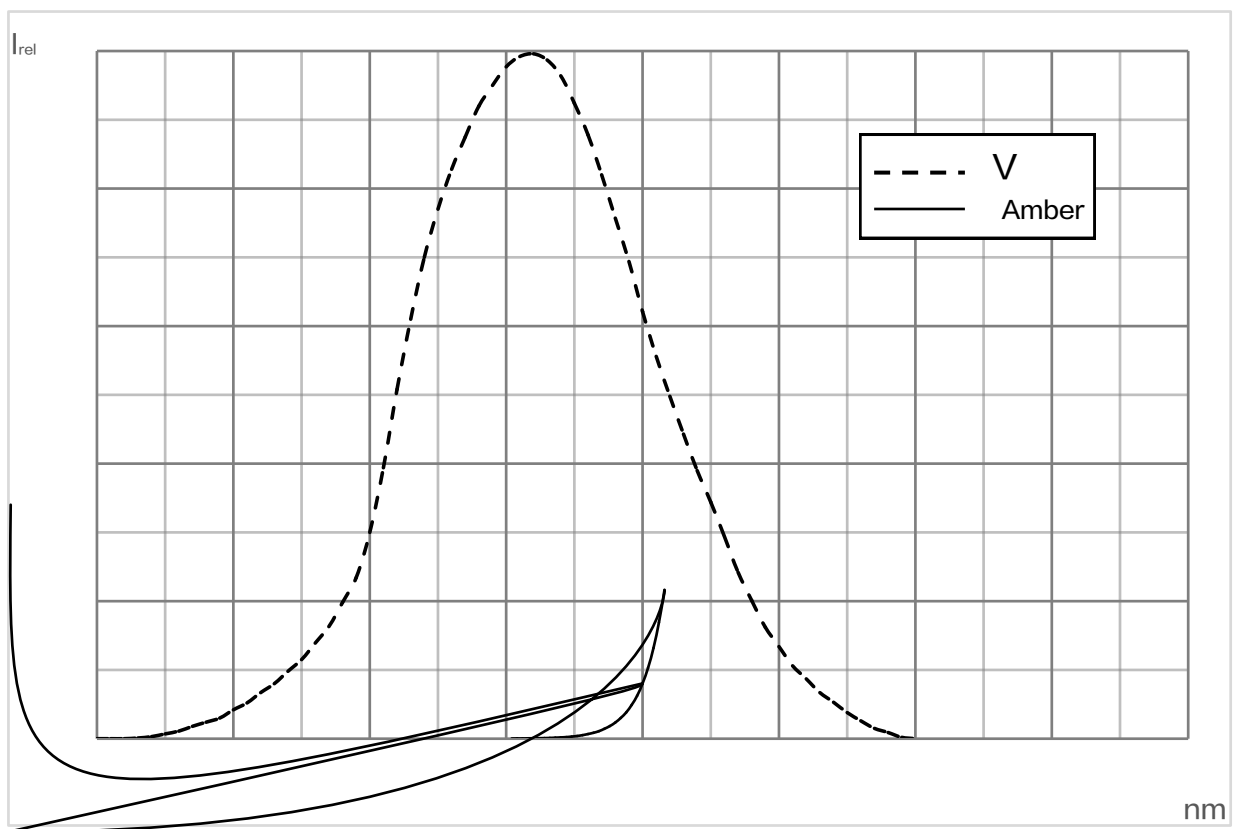
E.g. BA-2-3A

Brightness	Color	Forward Voltage
BA	2	3A

$$- V(\lambda) =$$

Relative Spectral Emission - $V(\lambda)$ = Standard Eye Response Curve

$$I_{rel} = f(\lambda); T_s \quad I_f = 50 \text{ mA}$$



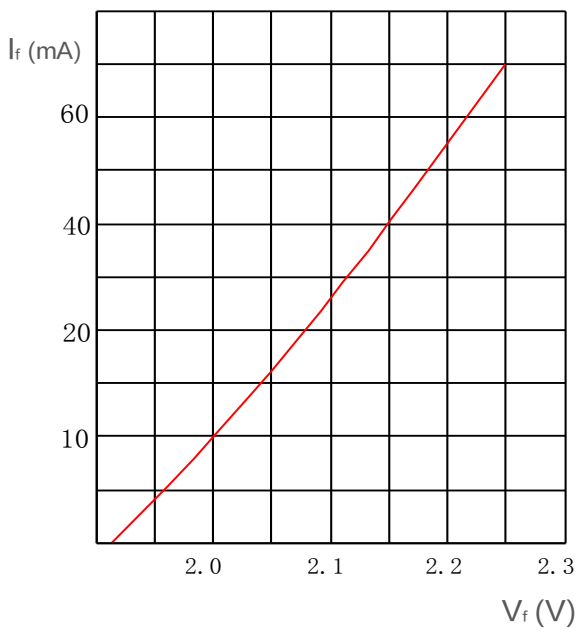
Radiation Characteristics

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



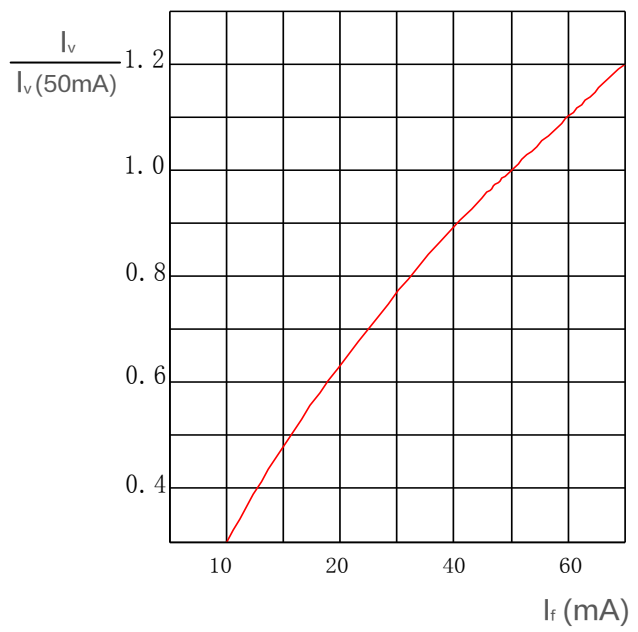
Forward Current

$I_f = f (V_f); T_a$



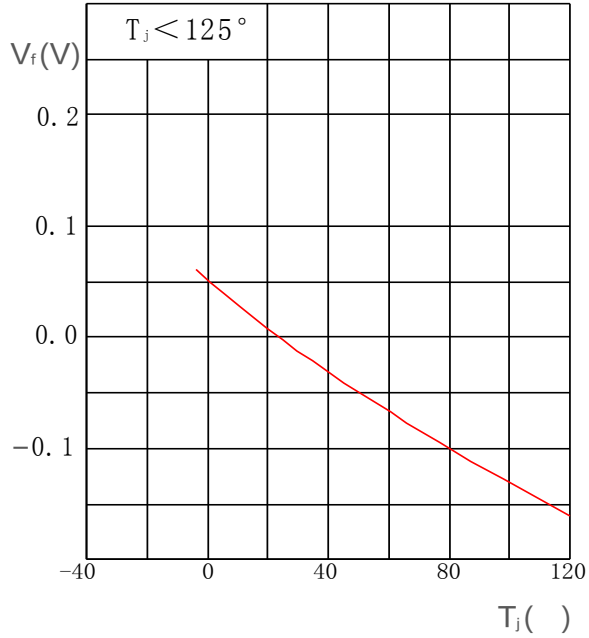
Relative Luminous Intensity

$I_v/I_v(50\text{ mA}) = f (I_f); T_a$



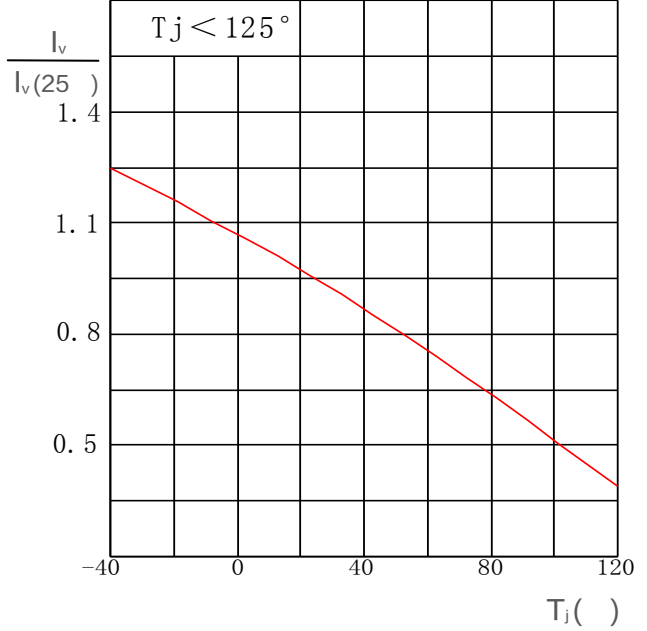
Relative Forward Voltage

$V_f = V_f - V_f / I_f$; $I_f = 50 \text{ mA}$



Relative Luminous Intensity

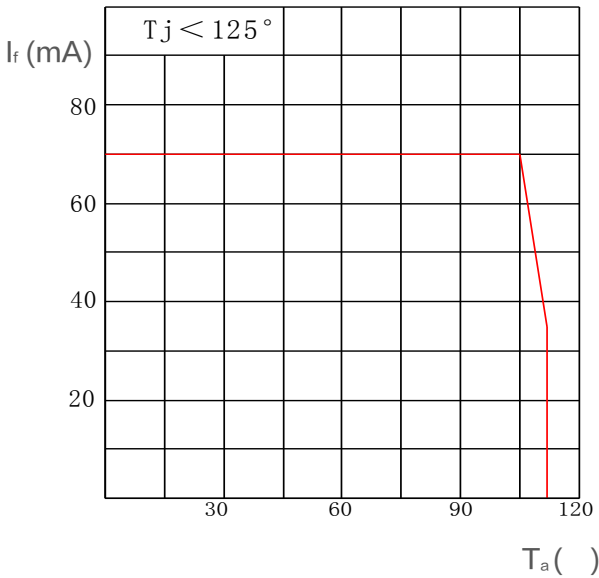
I_v / I_v ; $I_f = 50 \text{ mA}$



Solder Point Temperature

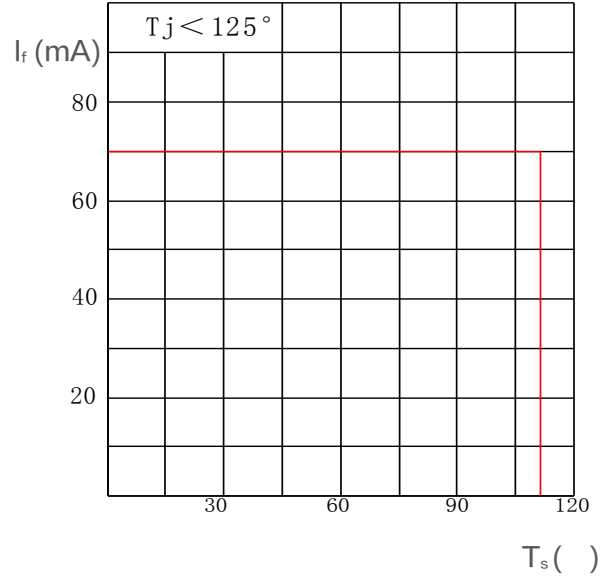
Ambient Temperature vs. Forward Current

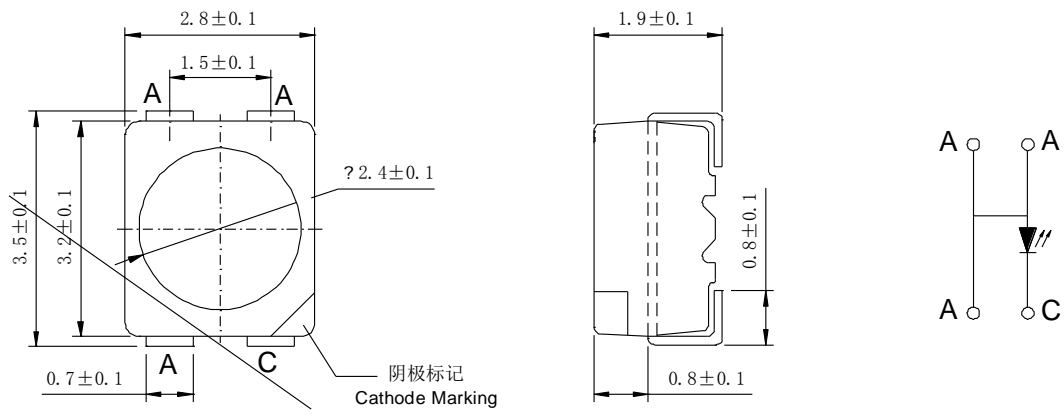
$I_f = f(T_a)$



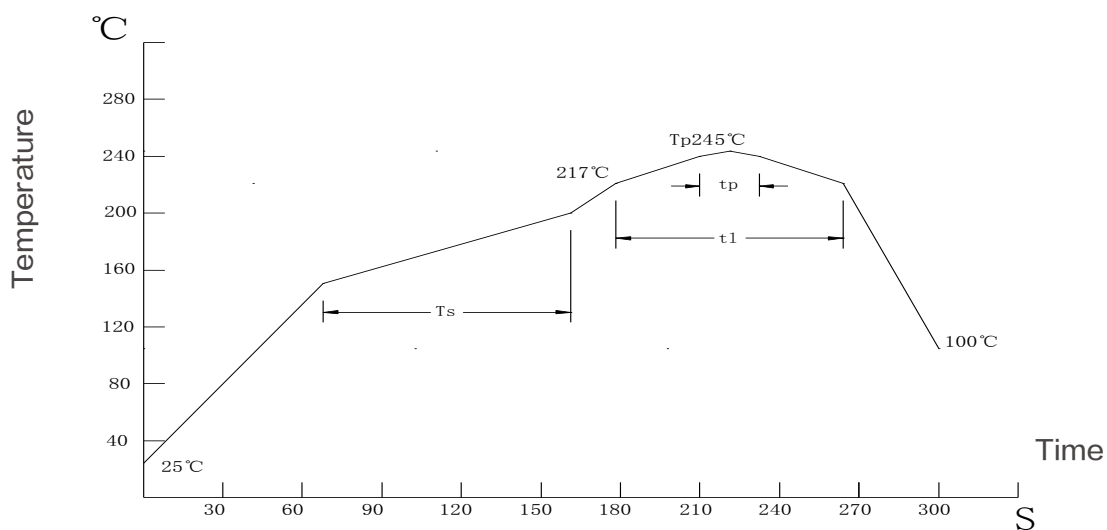
vs. Forward Current

$I_f = f(T_s)$



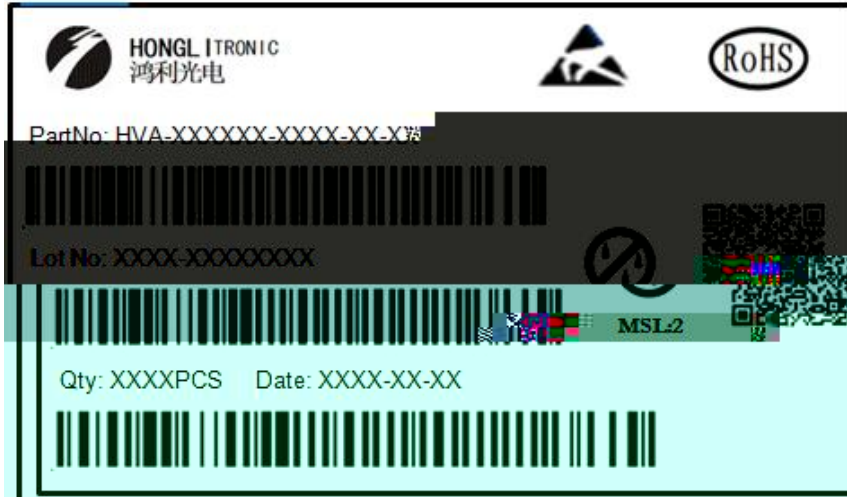


Reflow Soldering Profile

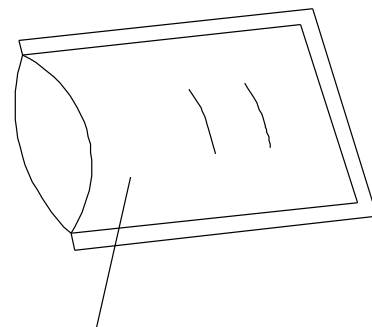
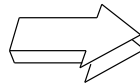
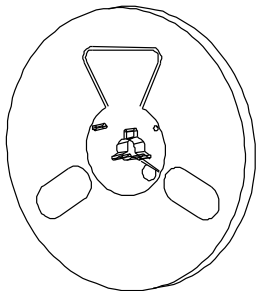


Profile Feature	Symbol	Pb-Free (SnAgCu) Assembly			Unit
		min.	rec.	max.	
Ramp-up Rate to Preheat 25 -150	-	-	2	3	/s
Time T_{smin} to T_{smax}	T_s	60	100	120	s
Ramp-up Rate to Peak T_{smax} to T_p	-	-	2	3	s
Liquidus Temperature	T_l	-	217	-	
Time above Liquidus Temperature	t_l	-	80	100	s
Peak Temperature	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

Barcode-Product-Label (BPL)



Dry Packing Process and Materials



Aluminum moisture-proof bag

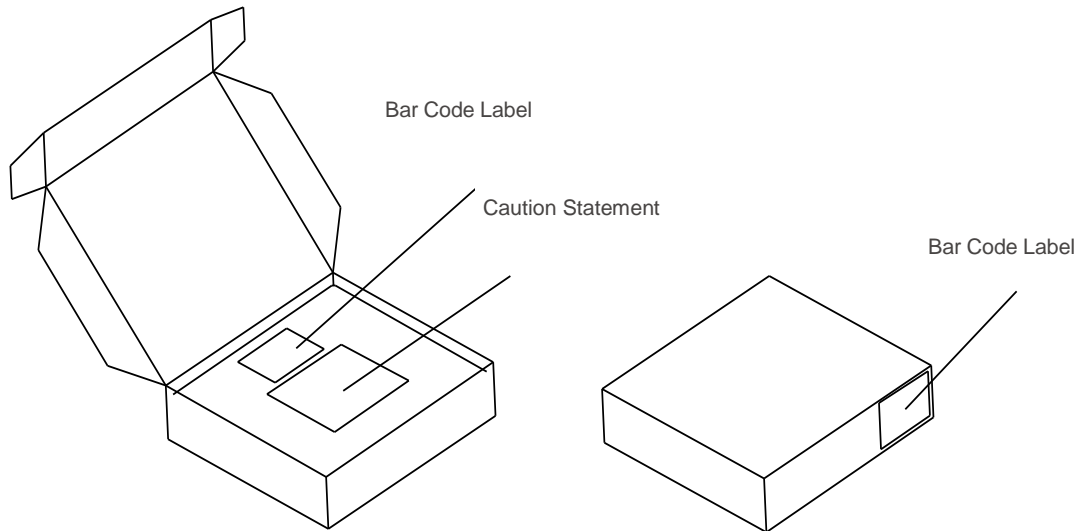
JEDEC

NOTE

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	0.5nm	1nm
	GUM K=3		
	25ms	8%	11%
	GUM K=3		

Glossary

Typical Values