

宏齊

HARVATEK

HARVATEK CSP 2024

Company & CSP Product
Introduction

HARVATEK CORPORATION

COMPANY SNAPSHOT

公司創立 Founded	Mar. 1995
營運總部 Headquarters	Hsin-Chu, Taiwan
資本額 Capital	USD 70 Million (NTD 2 Billion)
公開上市 Public Listed	Mar. 2003 (Number 6168)
員工人數 Employees	600 Worldwide
生產據點 Factories	Hsiang-Shan, Hsin-Chu (Taiwan) Hsin-Chu Science Park, Hsin-Chu (Taiwan)

HEADQUARTER AND MANUFACTURING



MANUFACTURING



Mini LED
Chip LEDs
Display
Automotive
Lighting

IR/Sensor
High Power LED
PLCC
COB
IC



Capacity

Average capacity per month

PCB type LED	1.5KKK
PLCC Type LED	0.4KKK
Mini LED	0.5KKK

Total	2.4KKK
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HQ/Factory

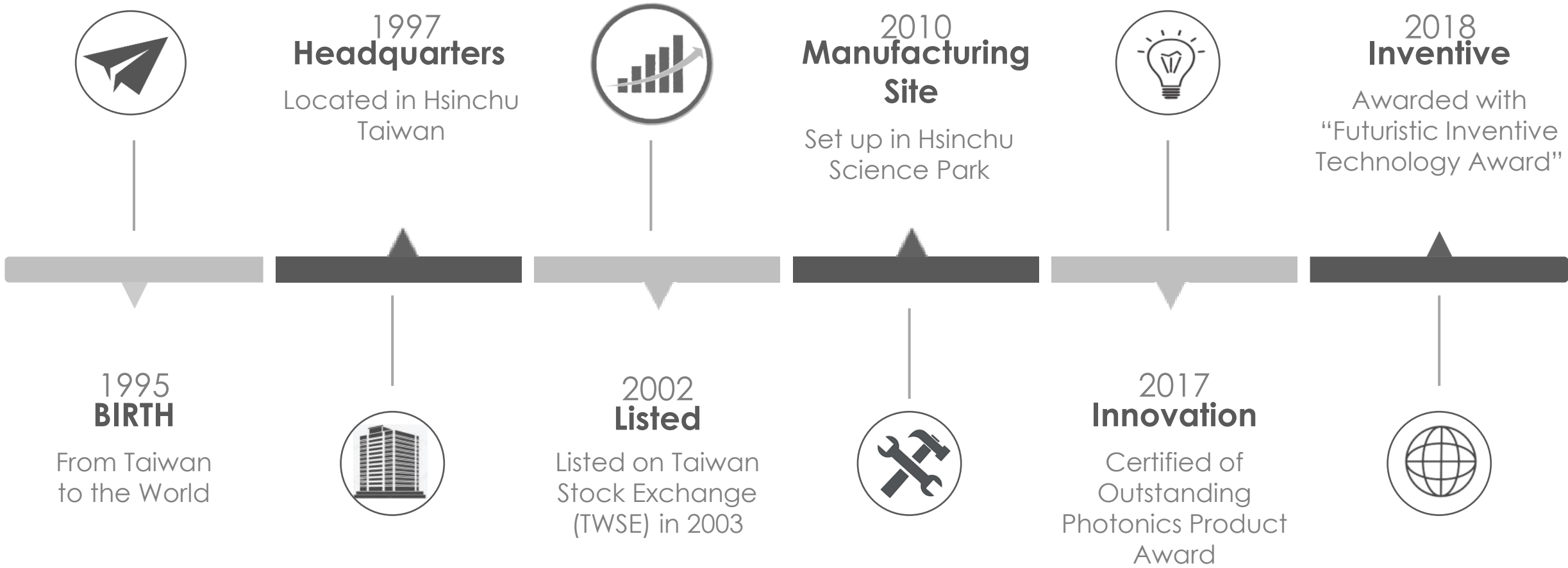


Factory

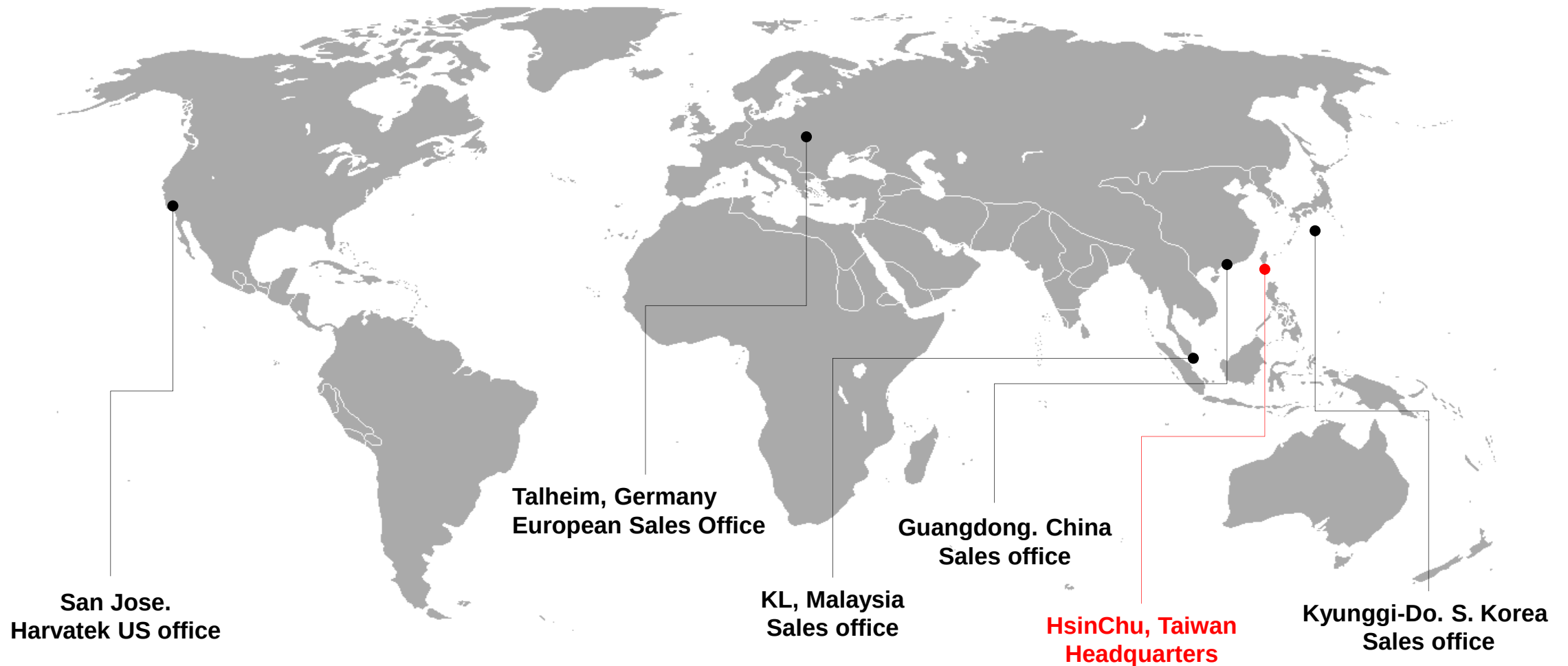


HARVATEK CORPORATION MILESTONES

COMPANY'S TIMELINE



OUR COVERAGE



CSP Product Status/Advantages

3528 0.75T Type
Conventional LED (PLCC)

V.S

1818 CSP

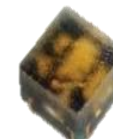
High-Bright



0408 CSP

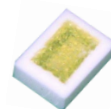


V.S



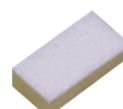
0404 0.3T Type
Conventional LED (RGB)

0504 CSP



High-Bright

0603 CSP



0704 CSP



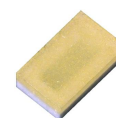
V.S



0704 0.4T Type
Conventional LED (PCB)

High-Bright

1107 CSP



Q1

Q2

Q3

Q4

2021

Q1

Q2

Q3

Q4

2022

Q1

Q2

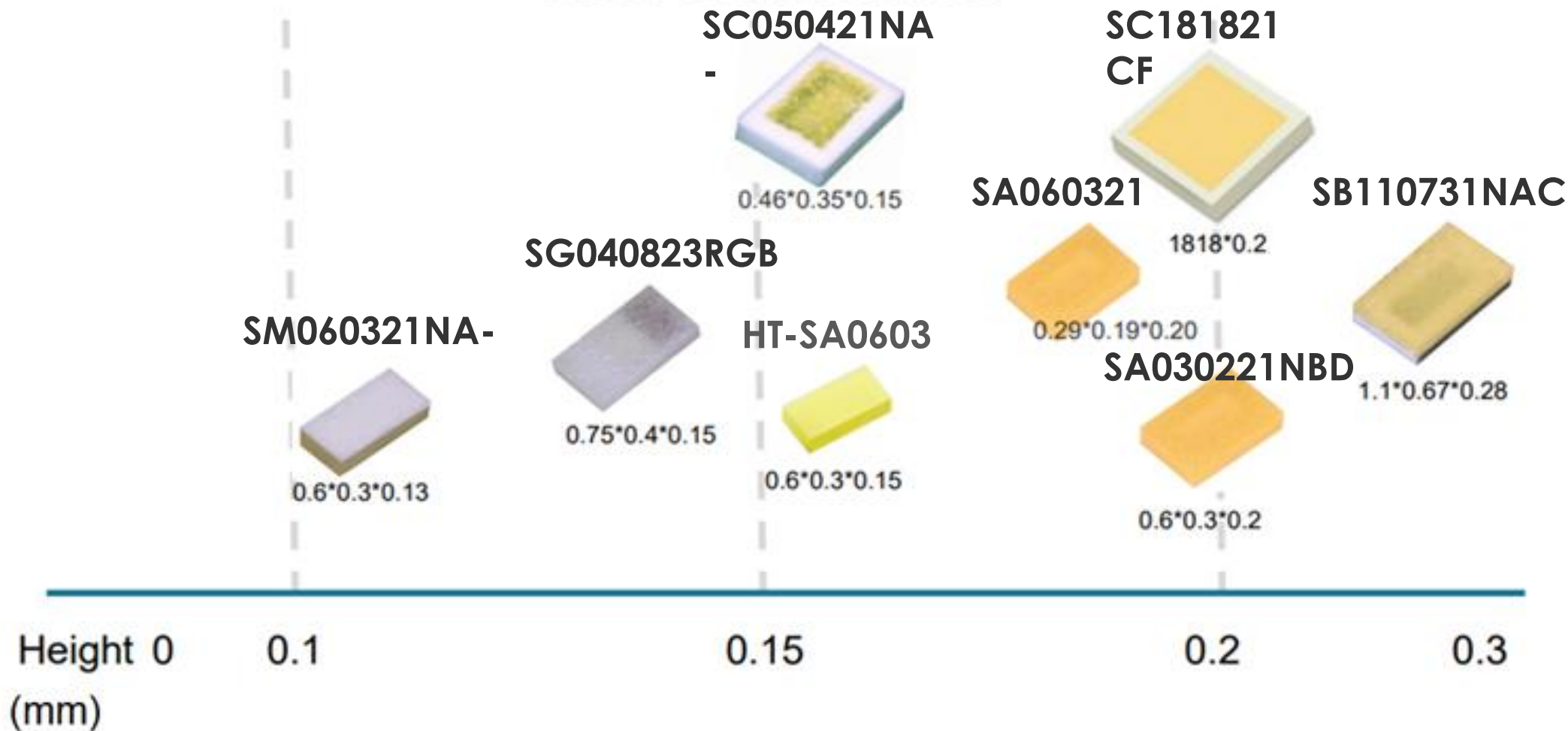
Q3

Q4

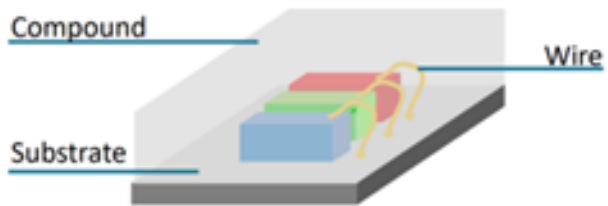
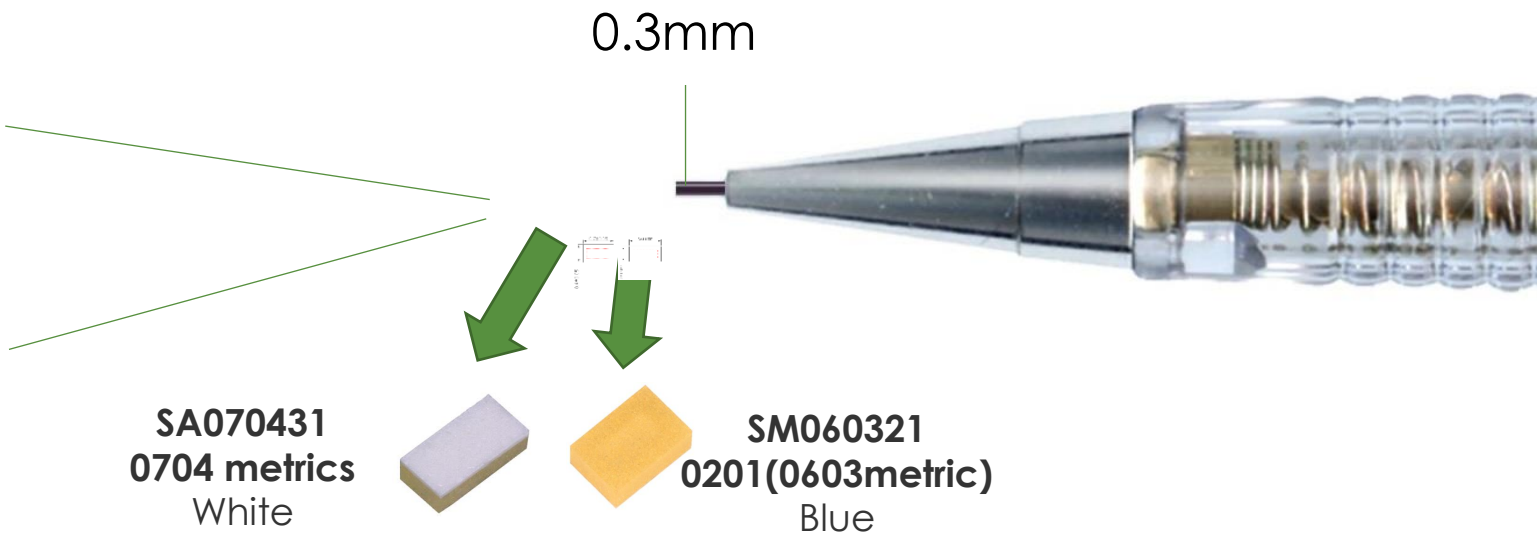
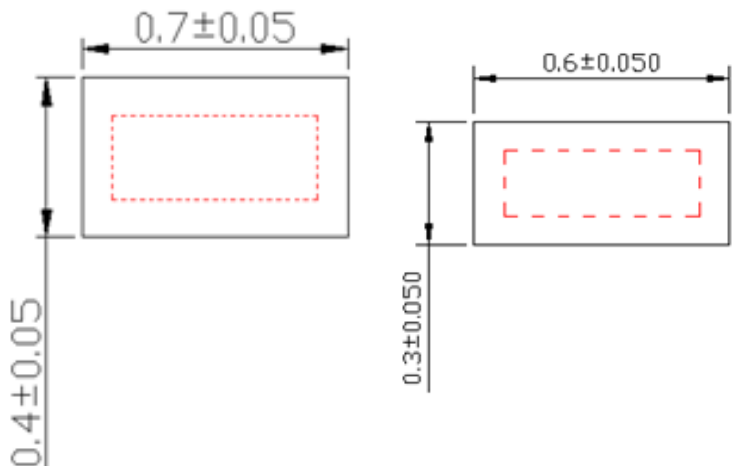
2023

CSP Product Line

Size Dimension



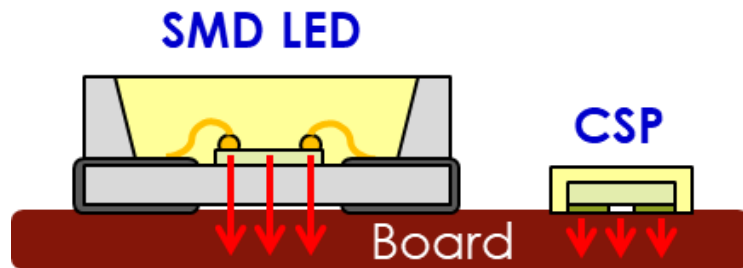
Why CSP



Conventional SMD LED



Chip-Scale-Package



Competitor



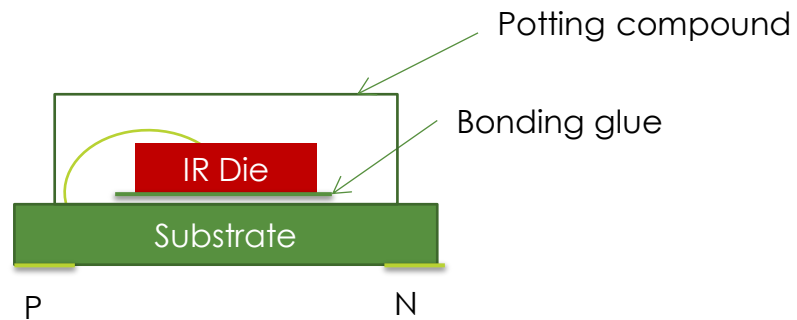
Harvatek

Features:

- 30 % **brighter**
- 79 % **volume shrink**
- **Flip Chip** tech, no need for wire
(**lower cost**) with **better heat dissipation**
- **Color Uniformity**
- **Low impedance**

Why CSP

Existing structure

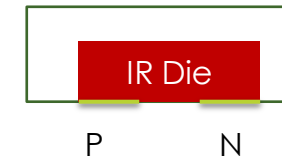


- 1、Impedance=
Substrate + Bonding glue + Wire bonding
- 2、Thickness : including Substrate and Bonding glue

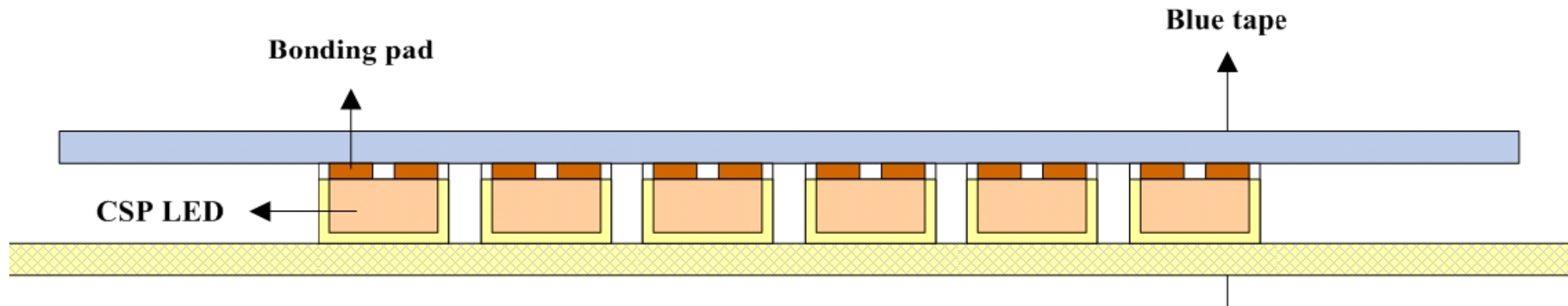
Package of CSP:

CSP structure

Non Substrate, Bonding glue and Wire bonding



- 1、Less impedance
- 2、Thickness : More thinner, about 150um



Car backlight Application

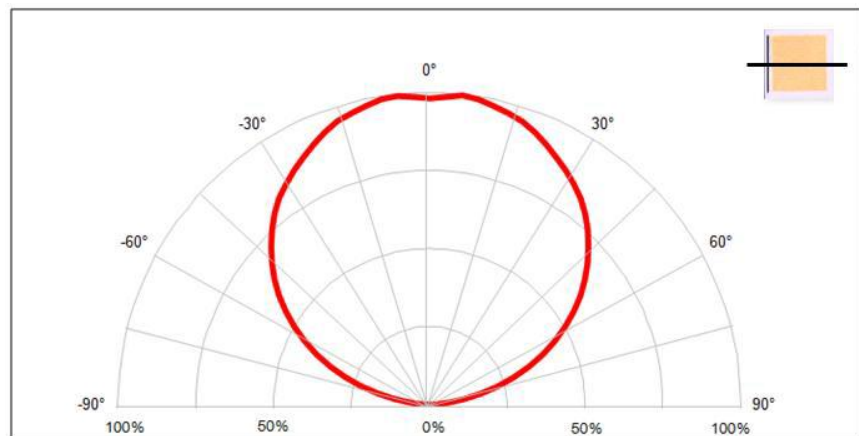
Top view High flux density (thickness $\leq 0.3T$)



HT-SC1818 Series

1818 0.20T

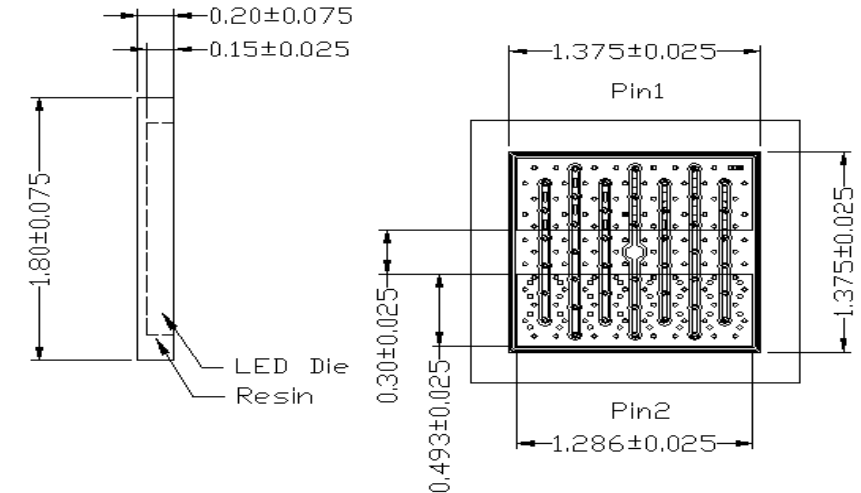
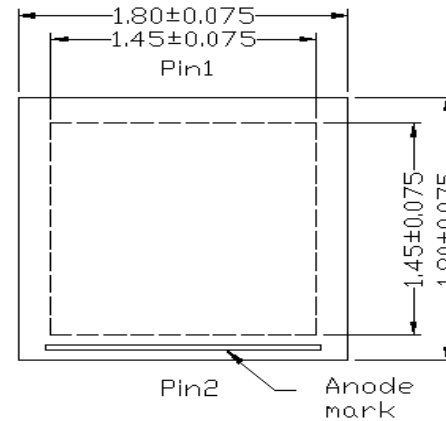
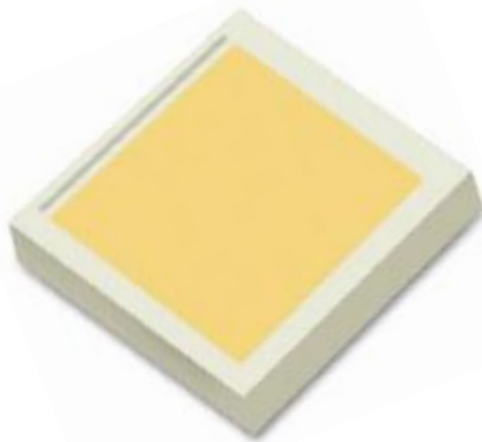
CSP Type



10

1818/0.20T

- ◆ Package size : 1.8mm*1.8mm*0.2mm
- ◆ Design : High flux density with compact light emitting source
- ◆ Application : Automotive HUD



Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V_F)		CIE (x,y)	Luminous Flux (I_m)	I_F (mA)
			Min.	Max.		Min.	
SC181821CF	1.8*1.8*0.2	○ White	3.3	3.5	x=0.287 y=0.237	422.2	1500

Lighting your view of the Future

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Car backlight Application

Top view High flux density (thickness $\leq 0.2T$)

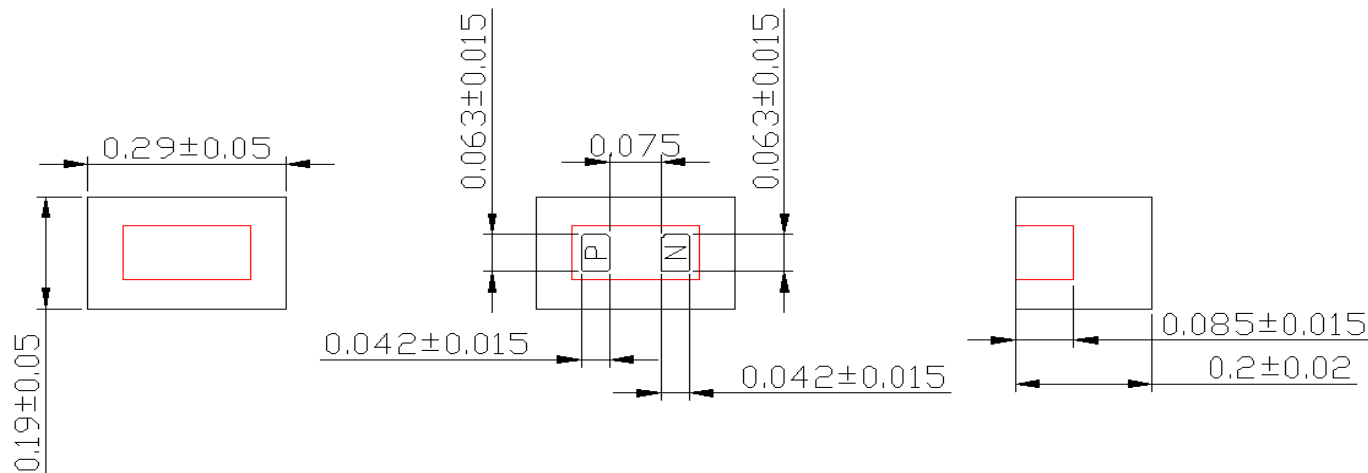


HT-SA0302 Series
0302 0.20T
CSP Type



0302/0.20T

- ◆ Package size : 0.29mm*0.19mm*0.20mm
- ◆ Design : Five-sided light CSP
- ◆ Application : Display/RGBW



Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V _F)		CIE (x,y)	Luminous Intensity (mcd)	I _F (mA)
			Min.	Max.		Typ.	
SA030221NBD	0.29*0.19*0.20	○ White	2.5	2.8	x=0.332 y=0.360	47	1

Laptop Application

Top view RGB Series (thickness $\leq 0.20T$)



HT-SG0408 Series

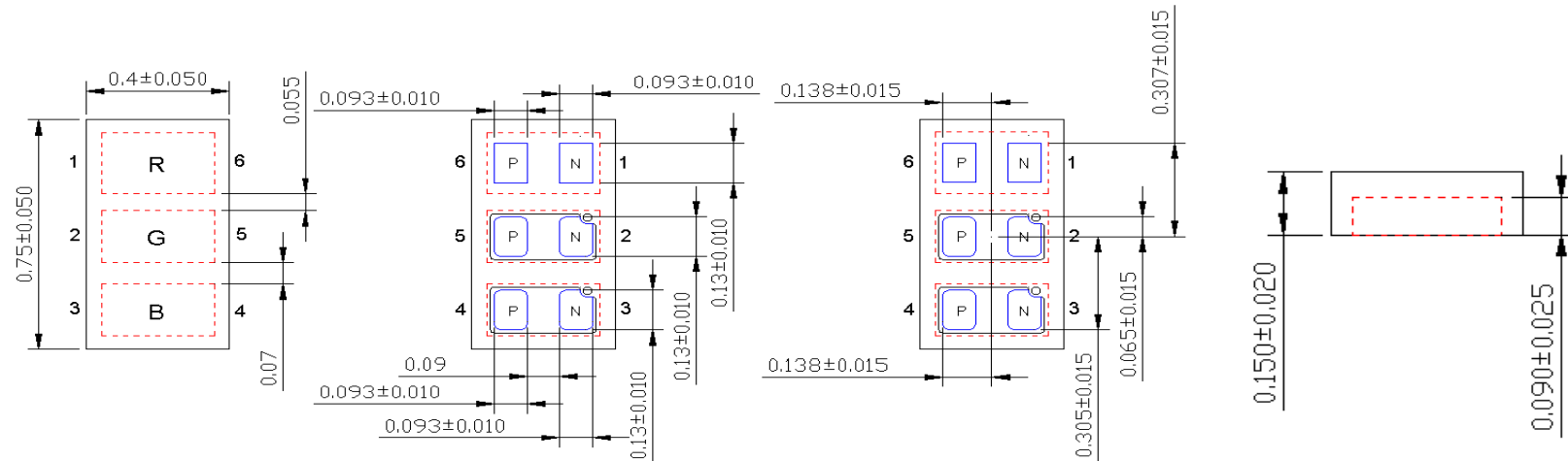
0408 0.15T

CSP Type



0408/0.15T

- ◆ Package size : 0.4mm*0.75mm*0.15mm
- ◆ Design : R+G+B light emitting source
- ◆ Application : Keyboard Backlighting

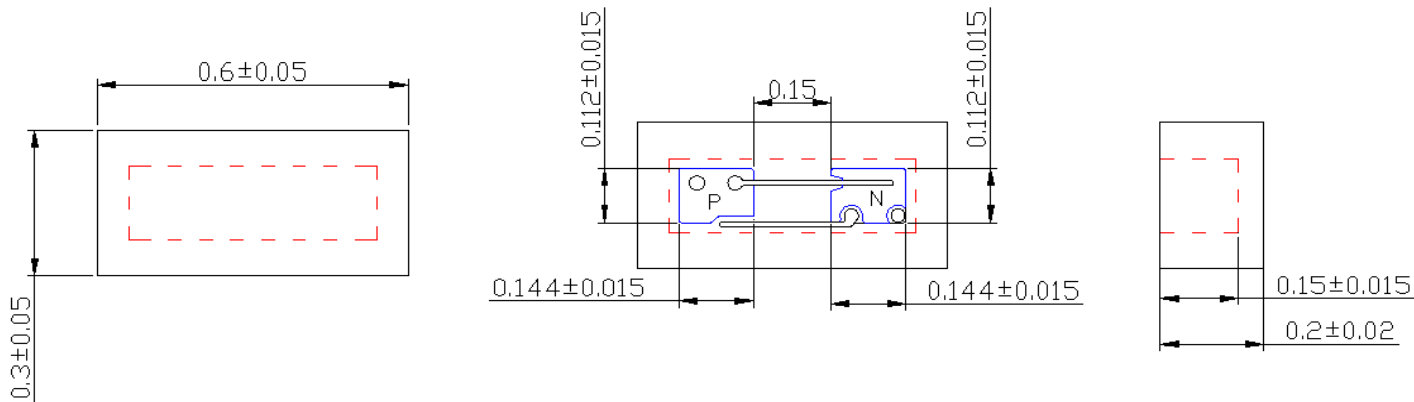


Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V _F)		λ_D (nm)	Luminous Intensity (mcd)	I _F (mA)
			Min.	Max.		Typ.	
SG040823RGB	0.75*0.4*0.15	Red	1.50	2.40	625	41.5	1.7
		Green	2.10	3.10	534	180.0	
		Blue	2.10	3.10	471	35.0	

Lighting your view of the Future

0408/0.15T

- ◆ Package size : 0.6mm*0.3mm*0.2mm
- ◆ Design : Single light CSP
- ◆ Application : Consumer product



Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V _F)		λ _D (nm)/CIE (x,y)	Luminous Intensity (mcd)	I _F (mA)
			Min.	Max.		Typ.	
SA060321CA-	0.6*0.3*0.2	○ White	2.4	2.8	x=0.31,y=0.31	300	5
SG060321USD		● Red	1.5	2.4	623	115	
SG060321NG-		● Green	2.2	2.6	530	330	
SG060321NB-		● Blue	2.5	2.8	469	75	

Keyboard backlight Application

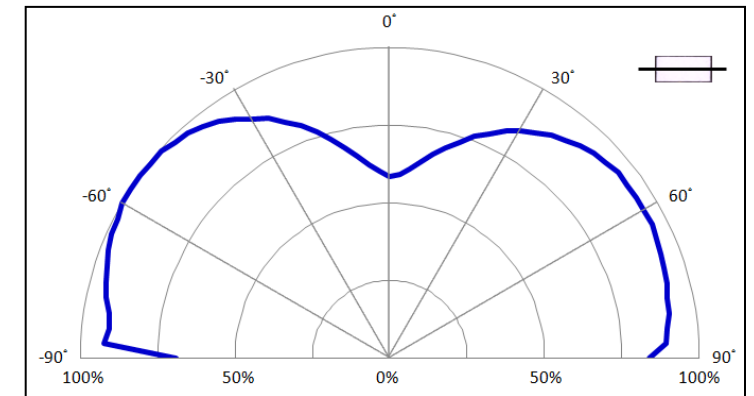
Top view 0603, $\sim 180^\circ$ degree Series (thickness $\leq 0.15T$)



HT-SM0603 Series

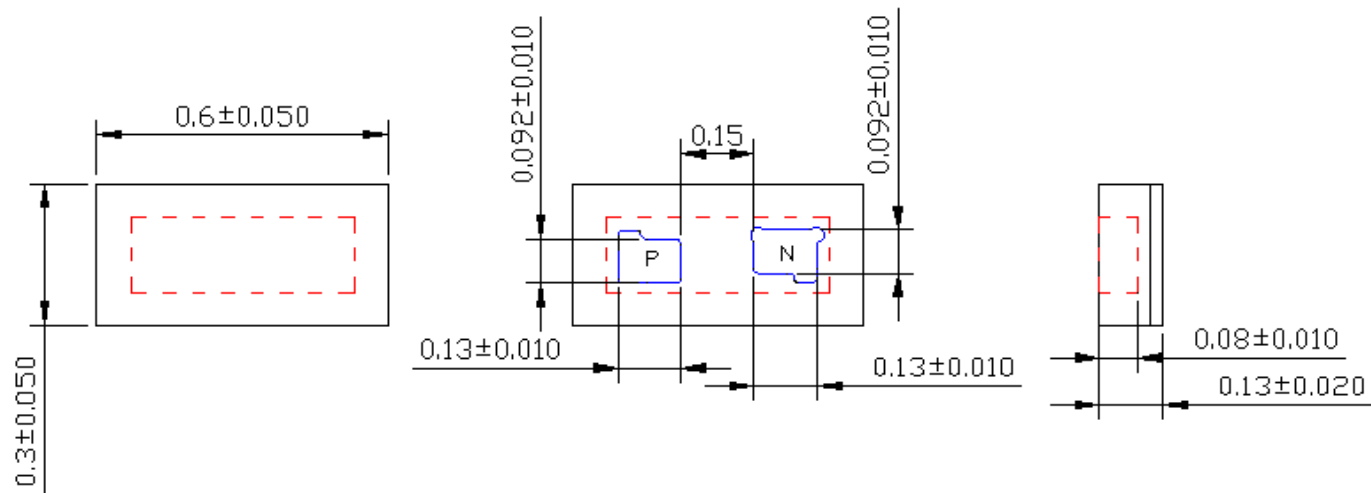
0603 0.13T

CSP Type



0603/0.13T

- ◆ Package size : 0.6mm*0.3mm*0.13mm
- ◆ Design : ~180 degree Beam Angle
- ◆ Application :NB/ Keyboard Backlight



Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V _F)		CIE (x,y)	Luminous Intensity (mcd)	I _F (mA)
			Min.	Max.		Typ.	
SM060321	0.6*0.3*0.13	○ White	2.5	2.9	x=0.300 y=0.300	186	5

Lighting your view of the Future

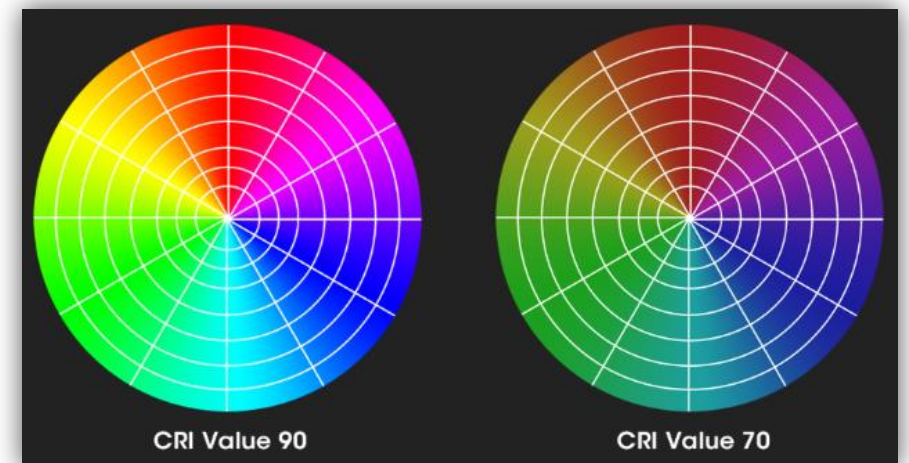
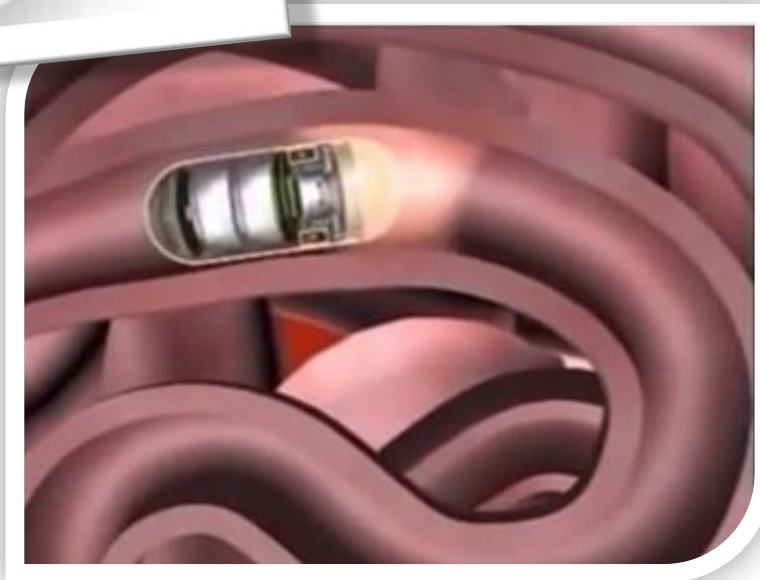
Medical product Application



Top view 0704, 5700K , CRI>95 (thickness $\leq 0.3T$)

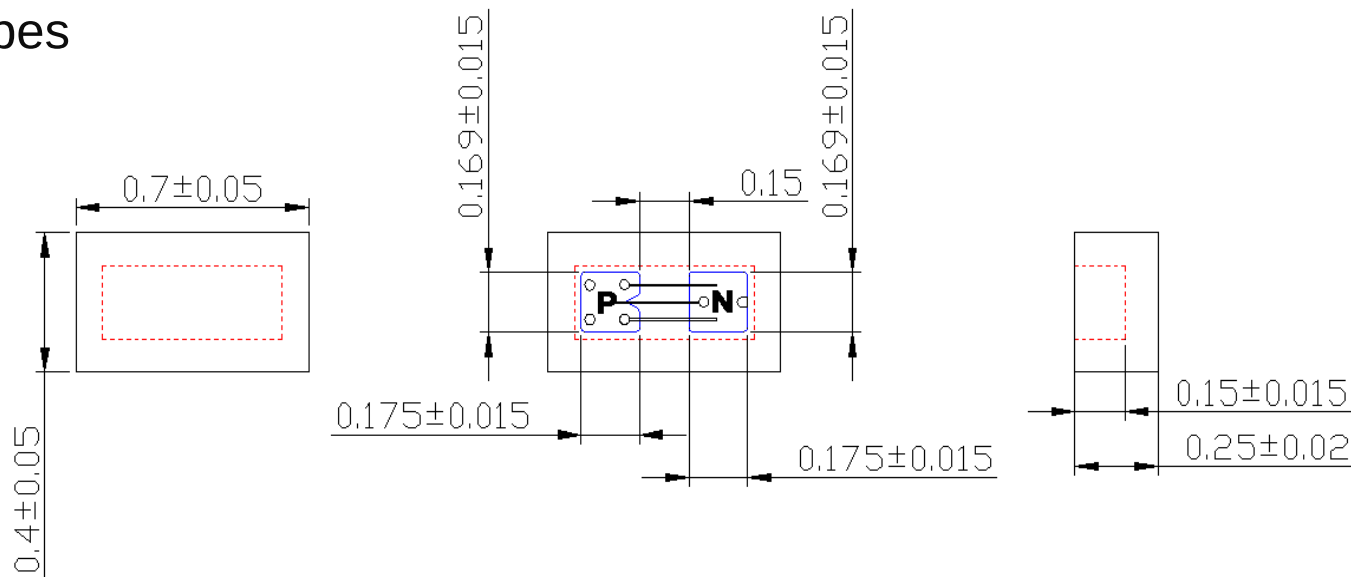


HT-SA0704 Series
0704 0.25T
CSP Type



0704/0.25T

- ◆ Package size : 0.68mm*0.35mm*0.25mm
- ◆ Design : 4500K, light emitting source
- ◆ Application : Medical Products/Endoscopes

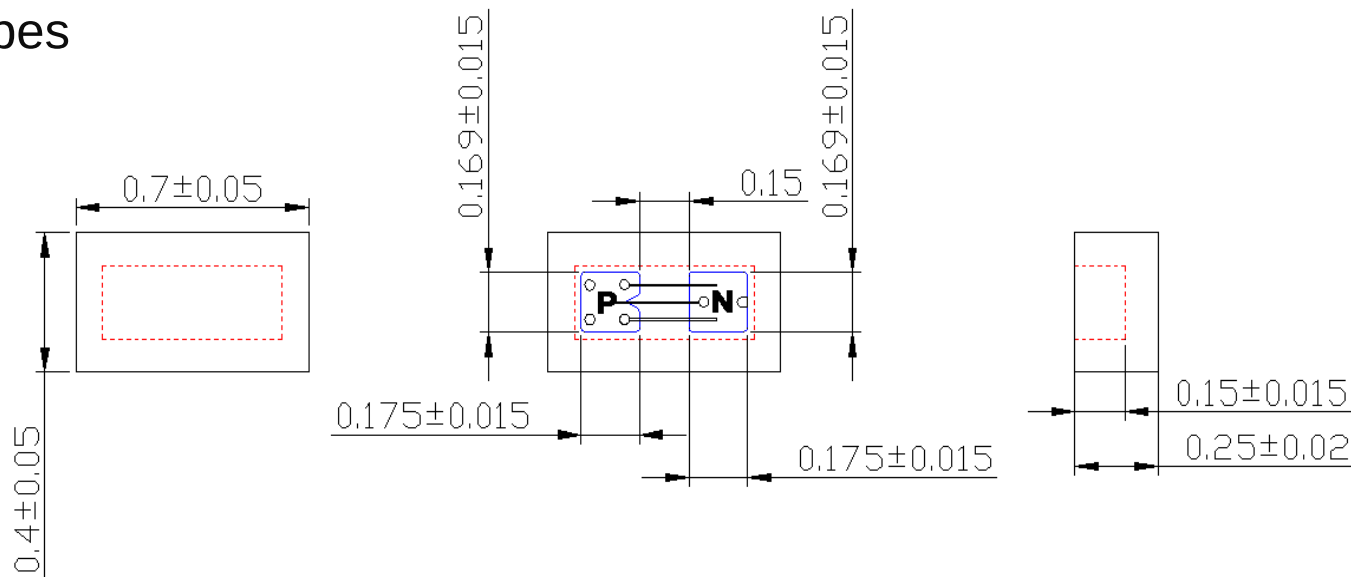


Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V _F)		CIE (x,y)	Luminous Intensity (lm)	I _F (mA)
			Min.	Max.		Typ.	
SA070431MB-60	0.68*0.35*0.25	○ White	2.7	3.1	x=0.362 y=0.367	18.1	60

Lighting your view of the Future

0704/0.25T

- ◆ Package size : 0.7mm*0.4mm*0.25mm
- ◆ Design : 5700K, CRI>95 light emitting source
- ◆ Application : Medical Products/Endoscopes

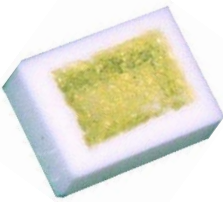


Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V _F)		CIE (x,y)	Luminous Intensity (lm)	I _F (mA)
			Min.	Max.		Typ.	
SA070431CBM	0.7*0.4*0.25	○ White	2.6	3.0	x=0.330 y=0.343	8.2	30

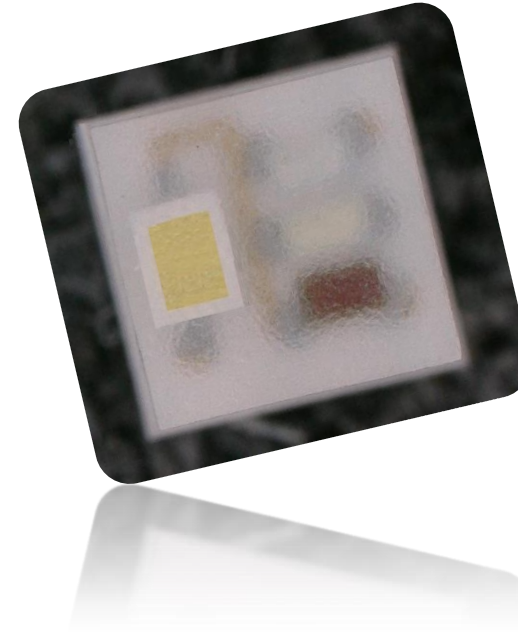
Lighting your view of the Future

Display/RGBW Application

Top view Compact light emitting Series(thickness $\leq 0.20T$)



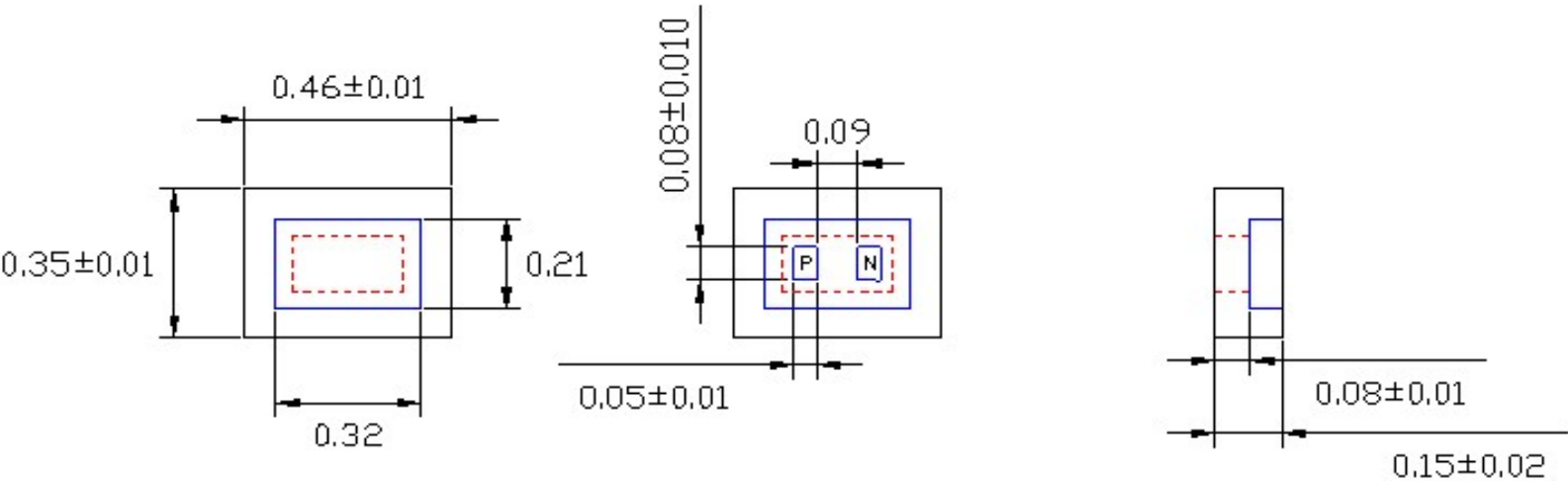
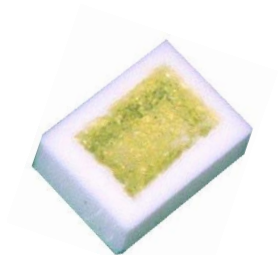
HT-SC0504 Series
0504 0.15T
CSP Type



Mini LED

0504/0.15T

- ◆ Package size : 0.46mm*0.35mm*0.15mm
- ◆ Design : High Intensity density with compact light emitting source
- ◆ Application : Display/RGBW



Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V _F)		CIE (x,y)	Luminous Intensity (mcd)	I _F (mA)
			Min.	Max.		Typ.	
SC050421	0.46*0.35*0.15	○ White	2.8	3.2	x=0.290 y=0.290	420	5

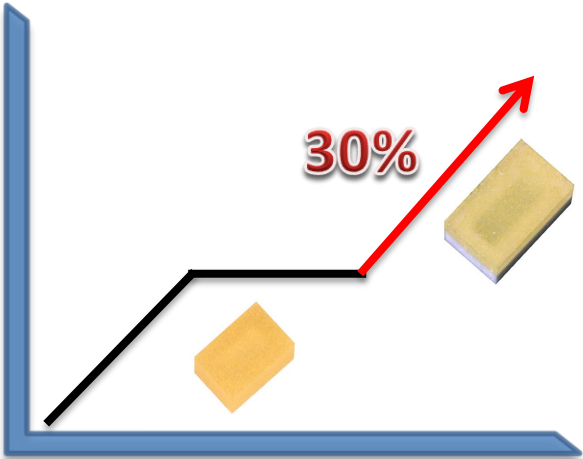
Display/RGBW Application

Top view High flux density (thickness $\leq 0.25T$)



HT-SB1107 Series
1107 0.25T
CSP Type

Increase

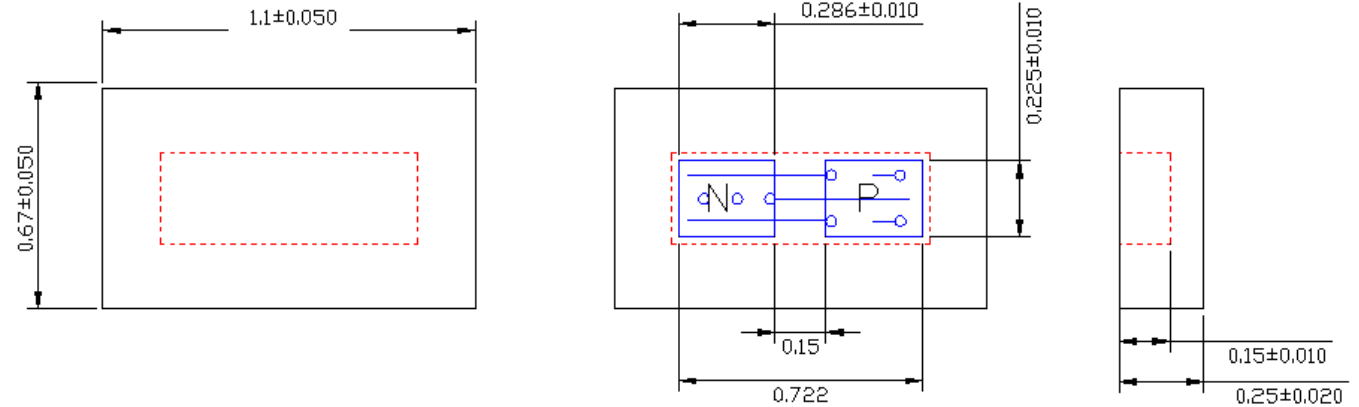


Brightness

Package type	Five-sided	Five-sided of White bottom
Feature	Wide applications	High-Bright
Brightness		30%↑
Cost		
Application	Backlight	Backlight

1107/0.25T

- ◆ Package size : 1.1mm*0.67mm*0.25mm
- ◆ Design : Five-sided light CSP
- ◆ Application : Consumer product



Part Number	Size (mm) L * W * H	Emitting Color	Forward Voltage (V _F)		CIE (x,y)	Luminous Intensity (mcd)	I _F (mA)
			Min.	Max.		Typ.	
SB110731NAC	1.1*0.67*0.25	○ White	2.5	2.8	x=0.345 y=0.355	850	5

Lighting your view of the Future



Automotive HUD



Status Indicator



Monitor backlight



Notebook/Keyboard backlight



COB Display



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