EDISON
Lighting Design Manufacturing Service

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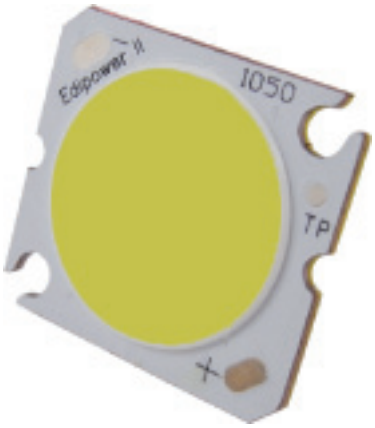
EdiPower® II Series

EdiPower® II HS Series Datasheet



Typical applications :

- Stage Lighting Street
- Lighting Decorative
- Lighting Architectural
- Lighting Downlights

Features :

- LED light engine
- High power operation
- Instant on
- Long lifetime

 version : 3

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Lighting Design Manufacturing Service

General Information

Introduction

EdiPower II HS series can provide different operating powers and different colors.
They serve as optical engine and can be utilized in general lighting and special lighting applications, such as MR16 and projectors. Furthermore, the high CRI options allow the customers to optimize the effect in various fields such as interior architecture.

Product Nomenclature

The following table describes the available colors, powers, and lens types. For more flux and forward voltage information, please consult the Bin Group document.

Table 1. EdiPower® II HS Series Nomenclature.

EP	x	W	-	C	x	2	7
X1	X2	X3		X4	X5	X6	X7

X1 LED Item		X2 Module		X3 Emitting Color		X4 Serial Number (1)		X5 Serial Number (2)	
Code	Type	Code	Type	Code	Type	Code	Type	Code	Type
EP	EdiPower®	S	Square	W	Cool White	--	--	--	--
		C	Star	H	Neutral White				
		8	Phi 8	X	Warm White				

X6 Circuit Series		X7 Circuit Parallel	
Code	Type	Code	Type
1-9	1-9 Series	1-9	1-9 Series
		0-B	10-12 Series

Mechanical Dimensions

EPSx-Cx27 and EPSx-Cx37 Emitter Dimensions

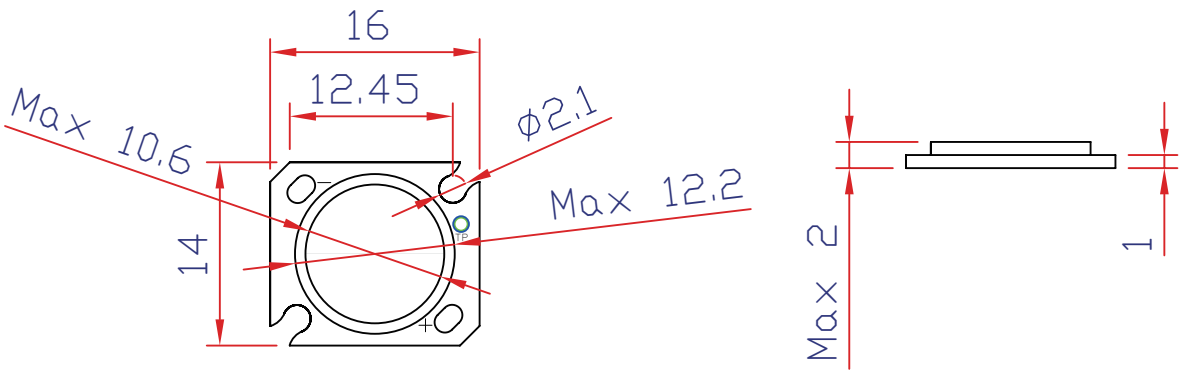


Figure 1. EPSx-Cx27 and EPSx-Cx37 Emitter Dimensions

EPSx-Cx49 and EPSx-Cx5A Emitter Dimensions

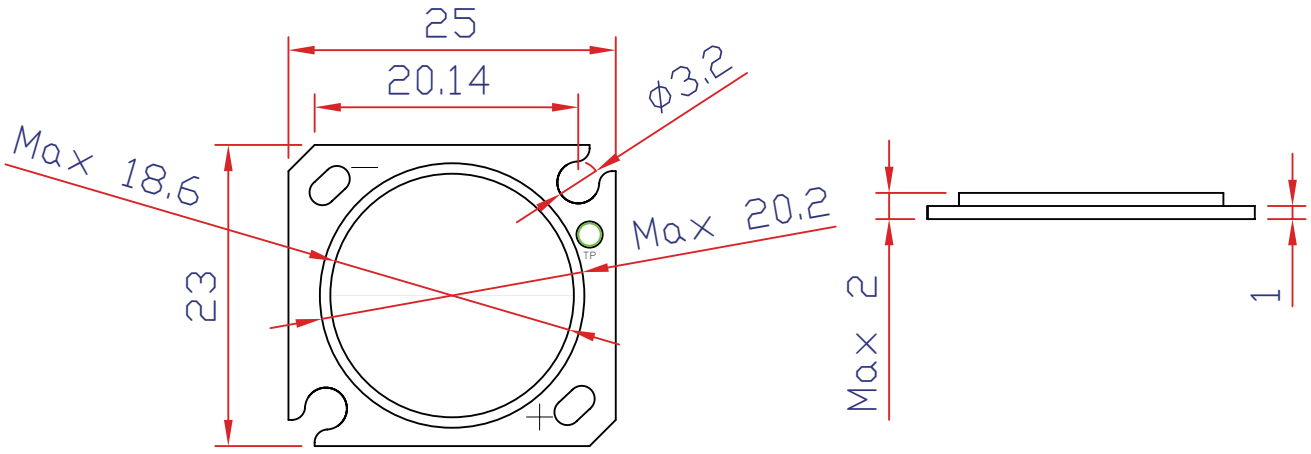


Figure 2. EPSx-Cx49 and EPSx-Cx5A Emitter Dimensions

EPCx-Cx32 Emitter Dimensions

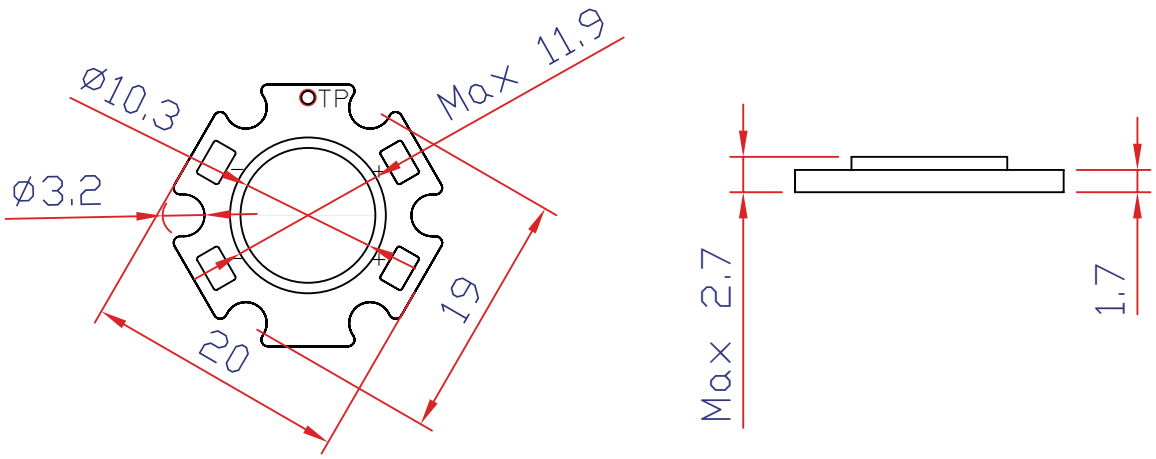


Figure 3. EPCx-Cx32 Emitter Dimensions

EP8x-Cx63 Emitter Dimensions

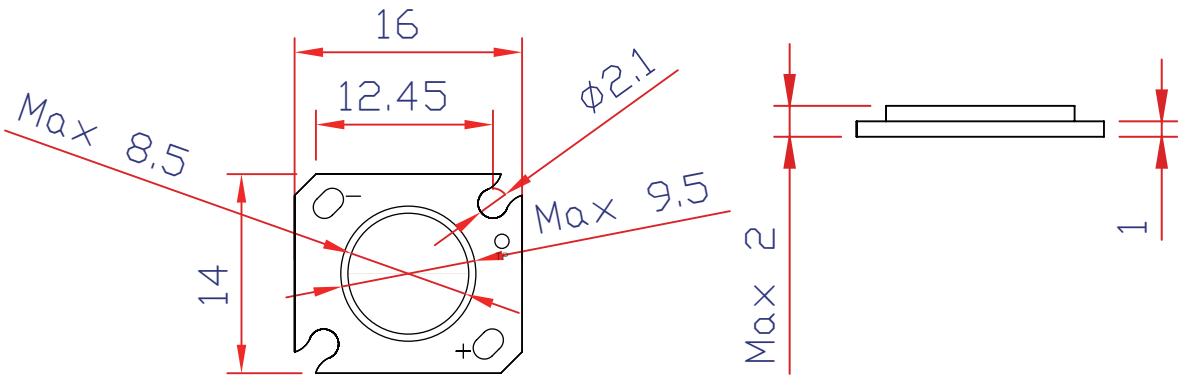


Figure 4..EP8x-Cx63 EdiPower II Series Dimensions

Notes:
1. Unit : mm
2. Tolerance : ± 0.2 mm
3. Drawings are not to scale
4. T_p : Thermal measurement point

EPSx-Cx27 Emitter Circuit Layout

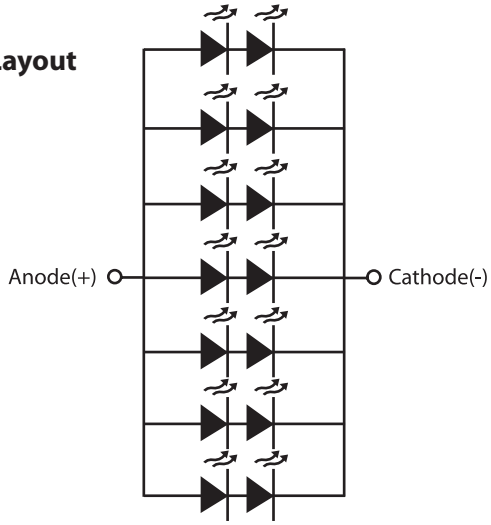


Figure 5. EPSx-Cx27 Emitter Circuit Layout

EPSx-Cx37 Emitter Circuit Layout

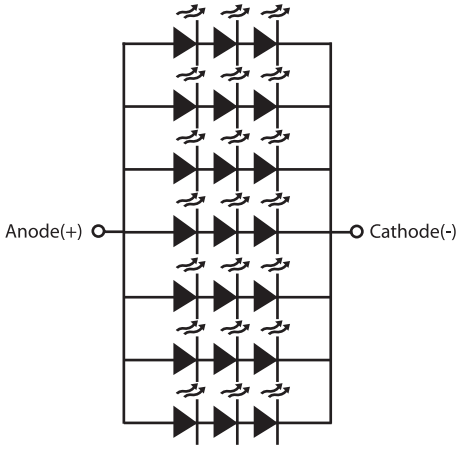


Figure 6. EPSx-Cx37 Emitter Circuit Layout

EPSx-Cx49 Emitter Circuit Layout

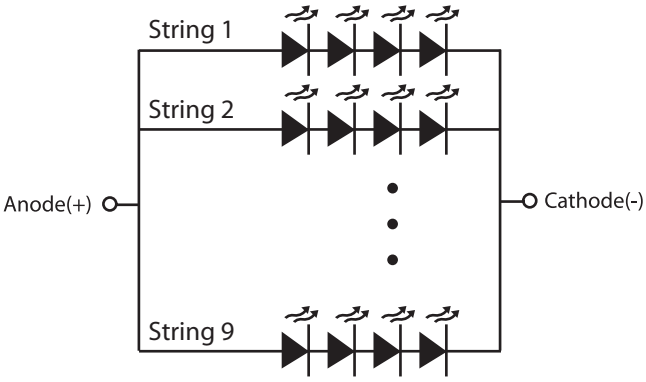


Figure 7. EPSx-Cx49 Emitter Circuit Layout

EPSx-Cx5A Emitter Circuit Layout

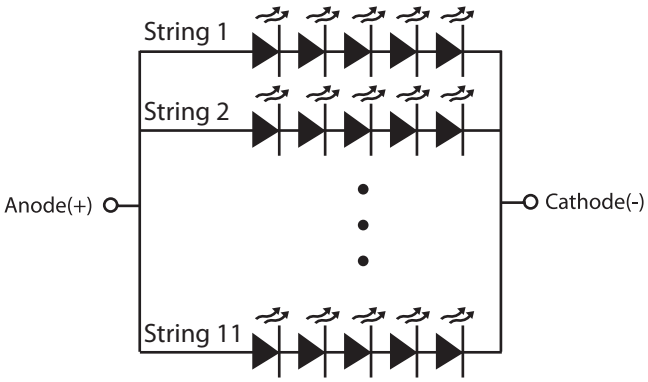


Figure 8. EPSx-Cx5A Emitter Circuit Layout

EPCx-Cx32 Emitter Circuit Layout

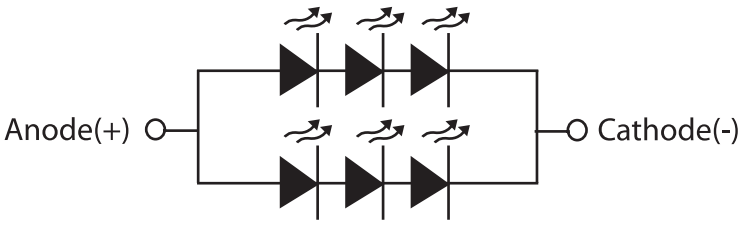


Figure 9. EPCx-Cx32 Emitter Circuit Layout

EP8x-Cx63 Emitter Circuit Layout

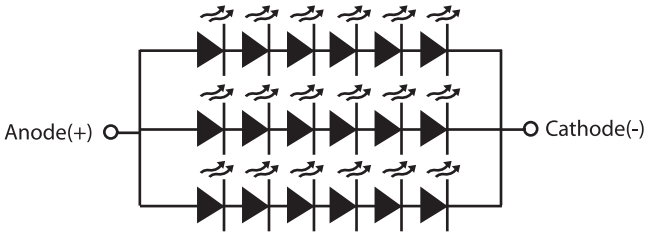


Figure 10. EP8x-Cx63 Emitter Circuit Layout

Absolute Maximum Ratings

The following table describes absolute maximum ratings of EdiPower® II HS series.

Table 2. EdiPower® II HS series absolute maximum ratings

Test	EPSx-Cx27	EPSx-Cx37	EPSx-Cx49	EPSx-Cx5A	EPCx-Cx32	EP8x-Cx63	Unit	Symbol
DC Forward Current[1]	1000	1000	1200	1500	350	350	mA	I_F
Peak pulse current (tp≤100μs,Duty cycle=0.25	1200	1200	1500	1800	350	350	mA	I_{PULSE}
Reverse Voltage[2]	Note 2						V	V_R
LED junction Temperature[3]	150						°C	T_J
Operating Temperature	-40 ~ +110						°C	-
Storage Temperature	-40 ~ +120						°C	-
Thermal Measurement Point (T_P)	<80						°C	T_s
ESD Sensitivity	2000						V	V_B
Isolation Voltage	1000						V	-

Notes:
1. DC forward current should not exceed LED's operating current; the current tolerance should be kept within a range of 5%.
2. LEDs are not designed to be driven in reverse bias.
3. Proper current derating must be observed to maintain junction temperature below the maximum at all time.

Luminous Flux Characteristics

The following tables describe flux of EdiPower® II HS series under various current and different color.

Table 3. Luminous flux characteristics for cool white and neutral white at T_J=25˚C for EdiPower® II HS series.

Color	Part Name	Typical Luminous Flux(lm) T_P=60°C	Typical Luminous Flux(lm) T_J=25°C	Typical Forward Voltage V_F (V)	Forward Current (mA)
Cool White	EPSW-CF27	590	610	6.4	700
		710	740	6.7	1000
	EPSW-CF37	780	820	9.5	700
		1050	1100	9.8	1000
	EPSW-CF49	1470	1540	12.1	1000
		1720	1800	12.3	1200
	EPSW-CF5A	2180	2300	15.4	1200
		2650	2800	15.7	1500
Neutral White	EPSH-CF27	580	600	6.4	700
		700	730	6.7	1000
	EPSH-CF37	700	740	9.5	700
		950	1000	9.8	1000
	EPSH-CF49	1430	1500	12.1	1000
		1650	1750	12.3	1200
	EPSH-CF5A	2150	2260	15.4	1200
		2600	2750	15.7	1500
Warm White	EPSX-CC27	460	480	6.4	700
		570	600	6.7	1000
	EPSX-CC37	630	660	9.5	700
		845	890	9.8	1000
	EPSX-CC49	1140	1200	12.1	1000
		1330	1400	12.3	1200
	EPSX-CC5A	1910	2010	15.4	1200
		2320	2450	15.7	1500
	EPCX-CF32	300	320	9.3	350
	EP8X-CC63	560	600	18.6	350

Notes:
1. EPSx-Cx27:Forward Voltage has ±0.6V tolerance.
2. EPSx-Cx49:Forward Voltage has ±1.2V tolerance.
3. EPSx-Cx5A:Forward Voltage has ±1.5V tolerance.
4. EPCx-Cx32:Forward Voltage has ±0.9V tolerance.
5. EP8x-Cx63:Forward Voltage has ±1.8V tolerance.

Characteristics

Thermal Resistance Junction Characteristics

Table 4. Temperature Coefficient of Forward Voltage & Thermal Resistance Junction to Case Characteristics at T_J=25˚C for EdiPower® II HS series

Part Name	Test Current (mA)	$\Delta V_F/\Delta T$		$R\theta_{J-B}$	
		Typ.	Unit	Typ.	Unit
EPSx-Cx27	1000	-2 to -8	mV/˚C	1.6	˚C/W
EPSx-Cx37	1000	-2 to -8	mV/˚C	1.4	˚C/W
EPSx-Cx49	1200	-5 to -10	mV/˚C	1.0	˚C/W
EPSx-Cx5A	1500	-5 to -12	mV/˚C	0.8	˚C/W
EPCx-Cx32	350	-8 to -16	mV/˚C	2.4	˚C/W
EP8x-Cx63	350	-2 to -8	mV/˚C	1.5	˚C/W

Optical Characteristics

Table 5. Dominant Wavelength or Color Temperature Characteristics at T_J=25°C for EdiPower II HS series

Part Name	Color	λd/CCT		Unit
		Min.	Max.	
EPxW-Cxxx	Cool White	5000	10000	K
EPxH-Cxxx	Neutral White	3800	5000	K
EPxX-Cxxx	Warm White	2670	3800	K

Notes:
1. CCT is measured with an accuracy of ± 5%.
2. Wavelength is measured with an accuracy of ± 0.5nm.

Characteristic Curve

Spectrum

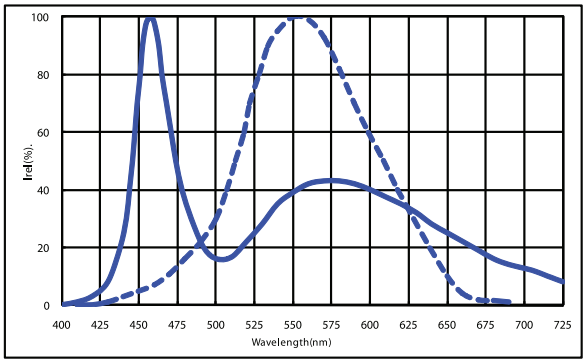


Figure 11. Color spectrum for EdiPower® II HS cool white

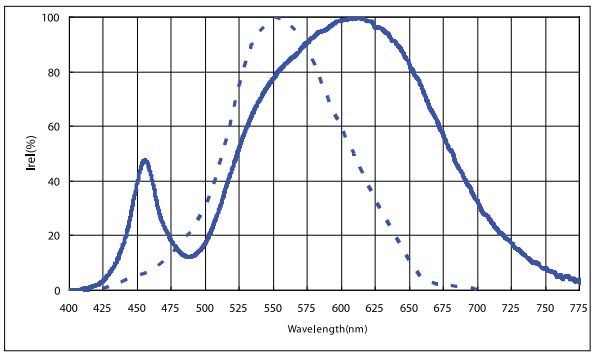


Figure 12. Color spectrum for EdiPower® II HS warm white and neutral white

Radiation Diagram

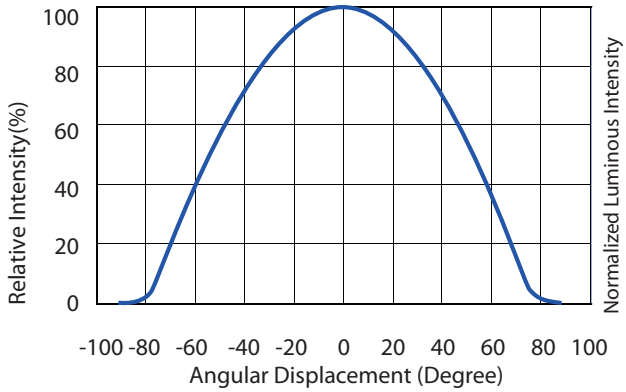


Figure 13. Lambertian at T_J=25°C for EdiPower II HS series

Luminous Flux & Junction Temperature

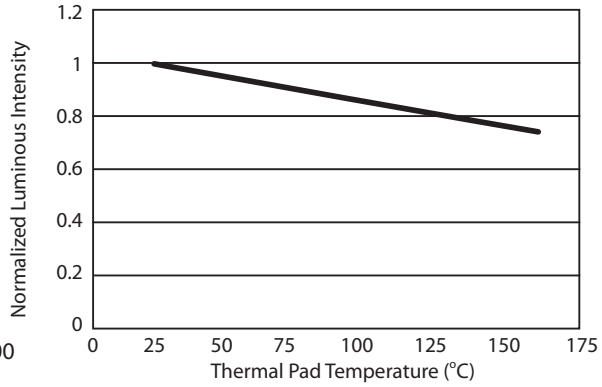


Figure 14. Relative luminous flux vs. thermal pad temperature for Cool White

CCT & Forward Current

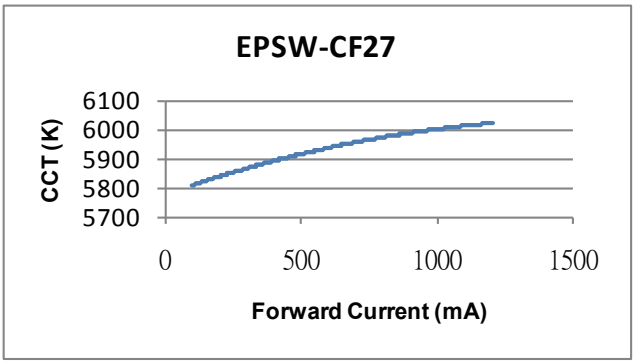


Figure 15. CCT shift for EPSW-CF27

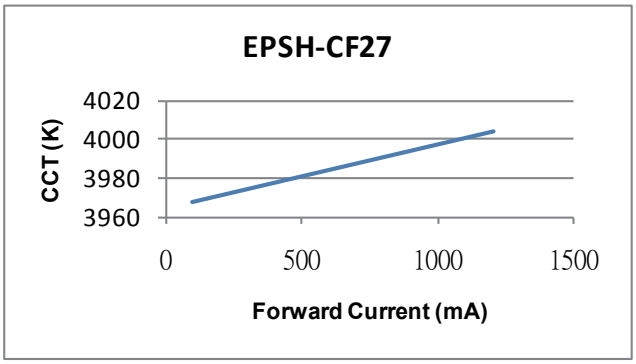


Figure 16. CCT shift for EPSH-CF27

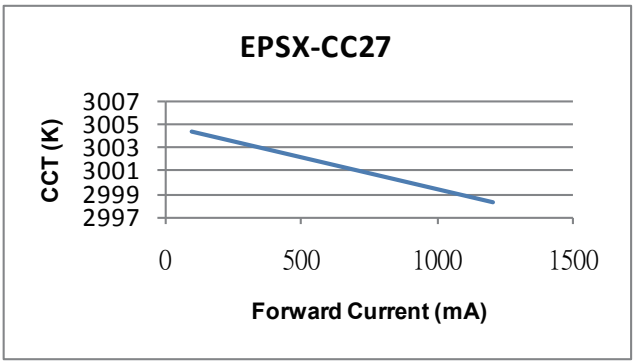


Figure 17. CCT shift for EPSX-CC27

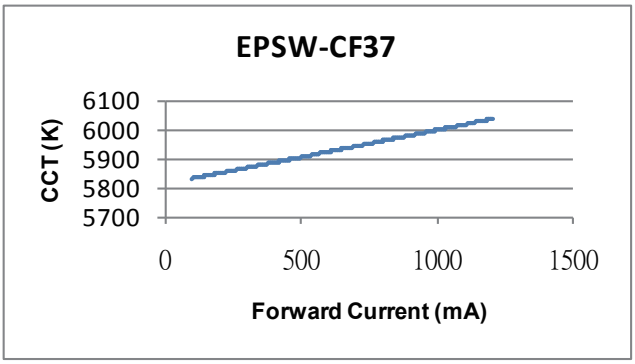


Figure 18. CCT shift for EPSW-CF37

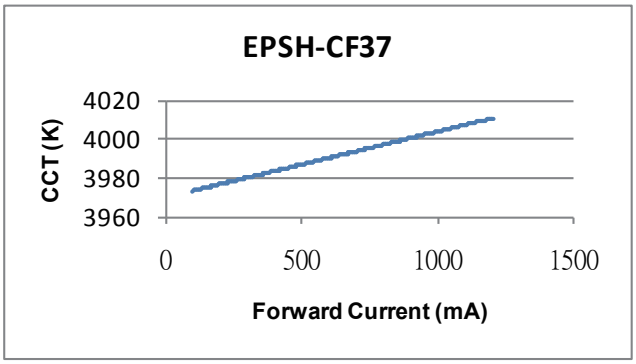


Figure 19. CCT shift for EPSH-CF37

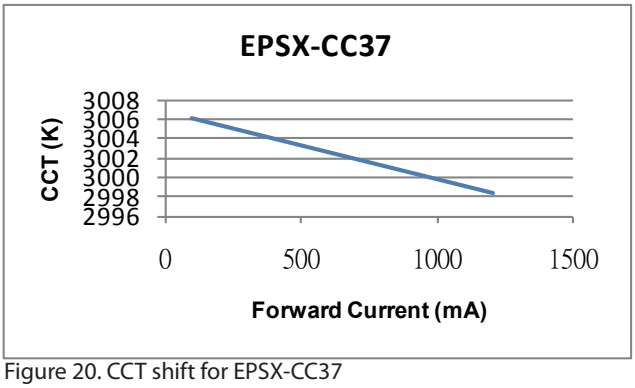


Figure 20. CCT shift for EPSX-CC37

CCT & Forward Current

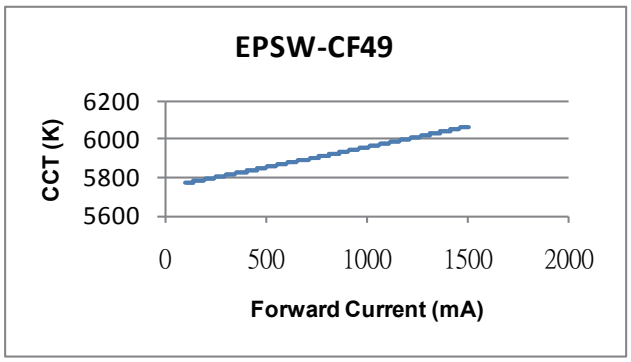


Figure 21. CCT shift for EPSW-CF49

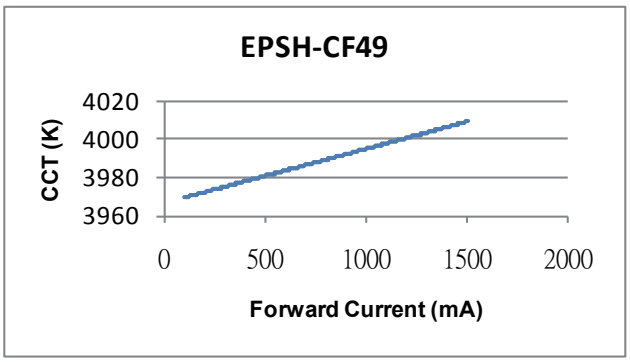


Figure 22. CCT shift for EPSH-CF49

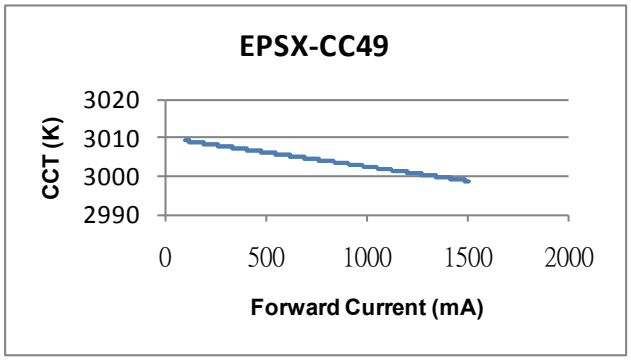


Figure 23. CCT shift for EPSX-CC49

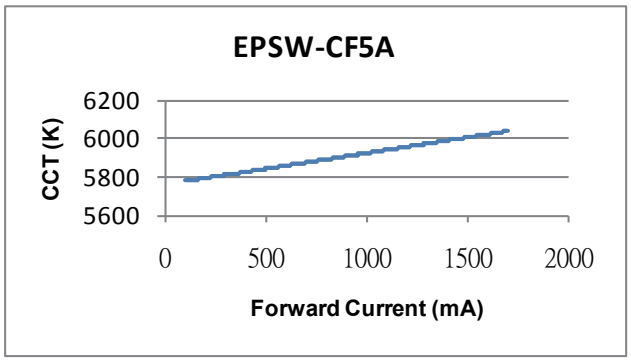


Figure 24. CCT shift for EPSW-CF5A

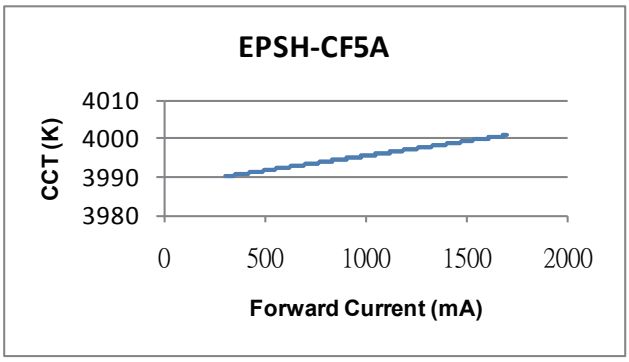


Figure 25. CCT shift for EPSH-CF5A

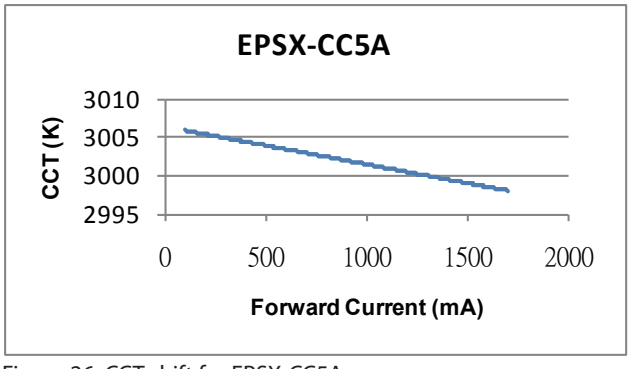


Figure 26. CCT shift for EPSX-CC5A

Forward Current & Voltage

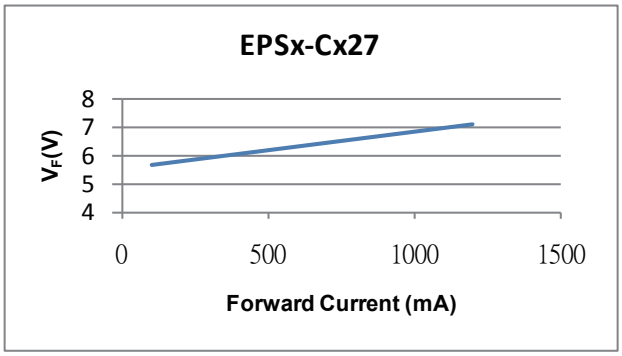


Figure 27. Voltage shift for EPSx-Cx27

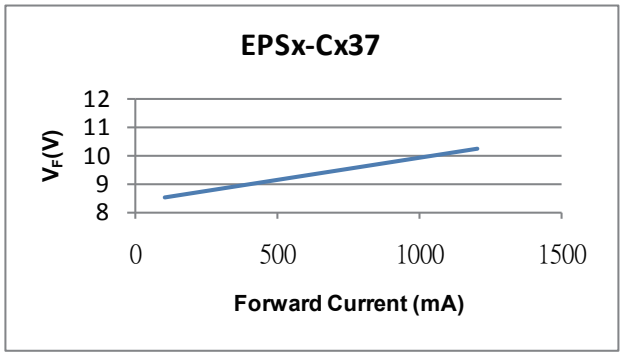


Figure 28. Voltage shift for EPSx-Cx37

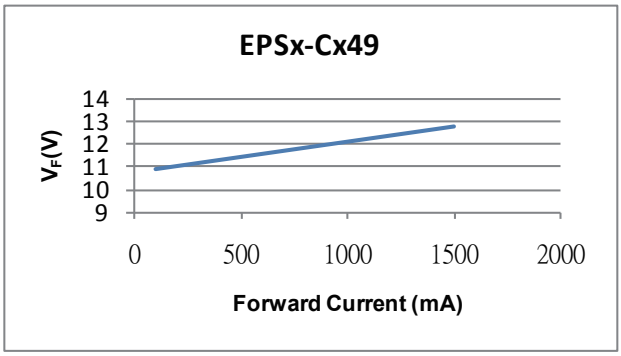


Figure 29. Voltage shift for EPSx-Cx49

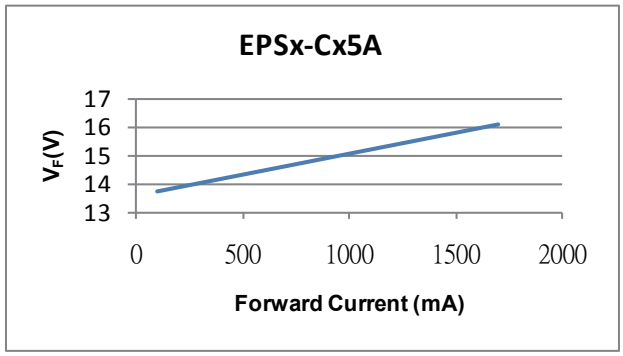


Figure 30. Voltage shift for EPSx-Cx5A

Forward Current & Luminous Intensity

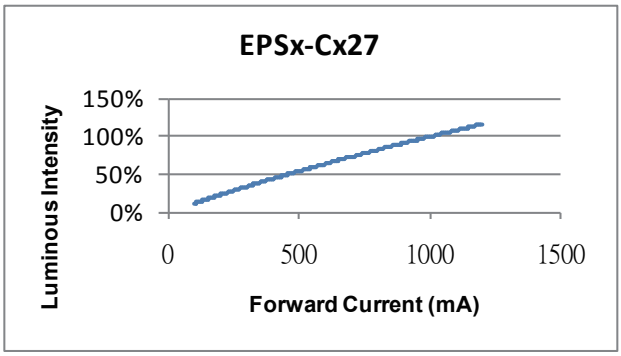


Figure 31. Luminous Intensity shift for EPSx-Cx27

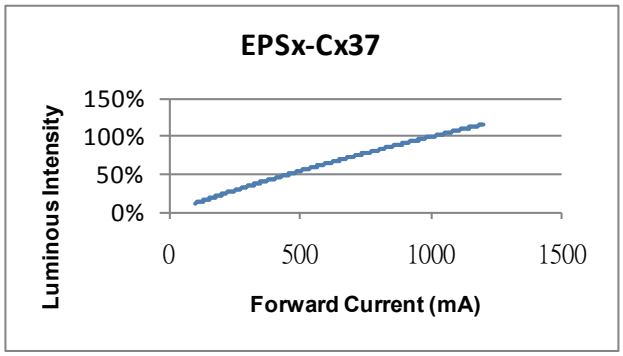


Figure 32. Luminous Intensity shift for EPSx-Cx37

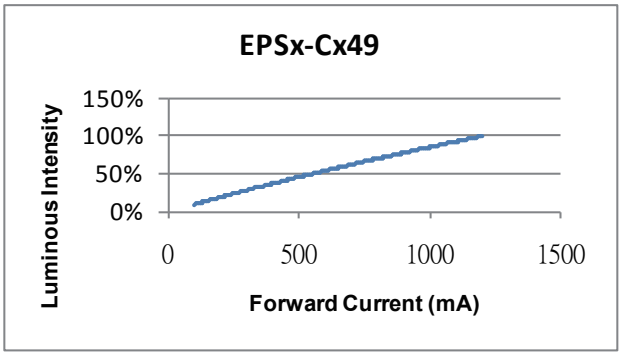


Figure 33. Luminous Intensity shift for EPSx-Cx49

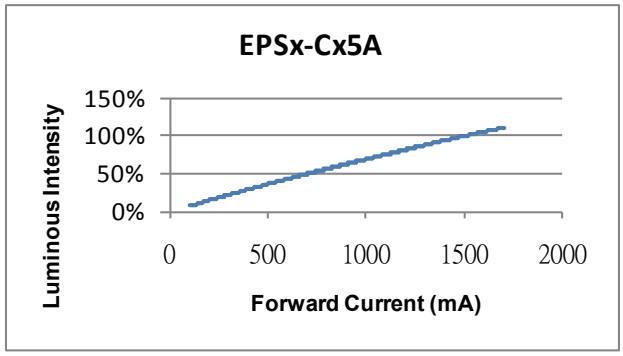
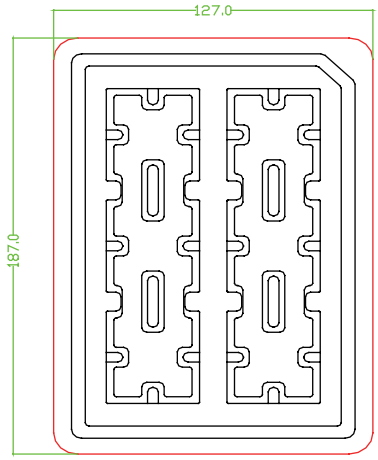


Figure 34. Luminous Intensity shift for EPSx-Cx5A

Product Packaging Information

Tray Packing for EPSx-Cx27 / EPSx-Cx37/ EP8x-Cx63



Tray Packing for EPSx-Cx49 / EPSx-Cx5A

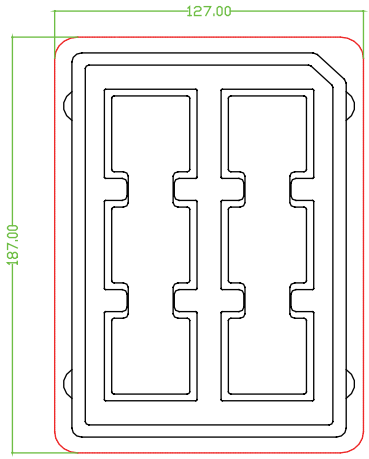


Figure 35. Tray package dimension.

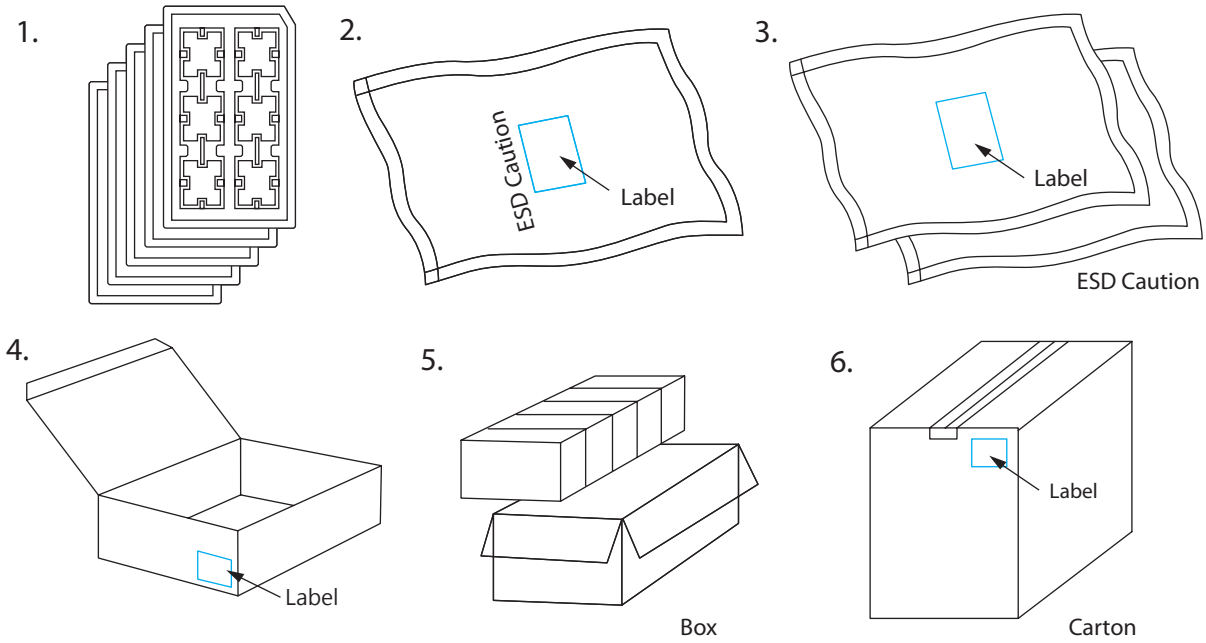


Figure 36. Packaging steps.

Notes:
1. All dimensions are in mm.
2. There are 5 trays in a bag.
3. There are 5 bags in a box.
4. There are 5 inner boxes in a carton.
5. A bag contains one humidity indicator card and drying agent.

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Lighting Design Manufacturing Service

Revision History

Table 6. Revision history of EdiPower II® HS series.

Version	Description	Release Date
1	1. Establish a Datasheet.	2012/07/17
2	Add EP8x-Cx63	2012/08/17
3	Modify Luminous Flux Characteristics	2012/08/28

About Edison Opto

Edison Opto is a leading manufacturer of high power LED and a solution provider experienced in LDMS. LDMS is an integrated program derived from the four essential technologies in LED lighting applications- Thermal Management, Electrical Scheme, Mechanical Refinement, Optical Optimization, to provide customer with various LED components and modules. More Information about the company and our products can be found at www.edison-opto.com

www.edison-opto.com

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