
Specification For UV COB Series

YL-12X3MD-390nm

Features

- High Efficacy 100 W UV COB (chip on board) light engine
- Dimension : 55mm(L)×20mm(W)
- All Metal Design Cu Substrate/ Al reflector with Quartz Glass Lens
- View Angle 60°
- Low thermal resistance
- The InGaN Chip inside
- High irradiance density output
- Seamless linear extendable
- Low thermal resistance solution in application assembly
- Good for SMT process with Backside Au coating

Applications

- UV Printing/UV Curing
- PCB industry
- Electronics Assembly
- Opto Electronics
- Special Lighting
- Defect Detection

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Absolute Maximum Ratings

(T_j=25°C)

Parameter		Symbol	Rating	Unit
Power Dissipation	UV390-420nm	P	110	W
Forward Current※		I _F	700*3	mA
Forward Pulse Current (1/10 Duty Cycle, 400msec Pulse Width)		I _{FP}	1000*3	mA
Thermal Resistance, Junction-Case		R _{th, J-C1}	0.2	°C/W
LED Junction Temperature		T _J	125	°C
Operating Temperature Range		T _{opr}	- 20°C to + 80°C	
Storage Temperature Range		T _{stg}	- 20°C to + 120°C	
Soldering Condition※		T _{sol}	180°C For 5 Seconds	

Note: 1.Independent electric power input by 12S(series)3P(parallel), see circuit structure diagram.

2. When assembly on heatsink, low Temp. profile solder is suggested.

Initial Electrical/Optical Characteristics

- Forward Voltage** (Tj=25°C)

Wavelength	Forward Voltage					
	Symbol	MIN.	TYP.	MAX.	Test Condition	Unit
390~420nm	V _F	37	46	53	I _F = 700mA*3	V

Caution: The real output is decided by chip capability

- Radiant Flux and Irradiance** (Tj=25°C)

Wavelength	Radiant Flux					
	Symbol	MIN.	TYP.	MAX.	Test Condition	Unit
400~420nm	Φ _e	26000	30000	-	I _F = 700mA*3	mW
390~400nm		26000	30000	-		
400~420nm	E _e	-	16000	-	I _F = 700mA*3	mW/CM ²
390~400nm			16000			

Caution: 1.The real output is decided by chip capability
2. Irradiance tested at a distance 10mm from lens

- Peak wavelength** (Tj=25°C)

Wavelength	Wavelength					
	Symbol	MIN.	TYP.	MAX.	Test Condition	Unit
390~420nm	λ _p	390	-	420	I _F = 700mA*3	nm

- Spectra half-width** (Tj=25°C)

Wavelength	Wavelength					
	Symbol	MIN.	TYP.	MAX.	Test Condition	Unit
390~420nm	Δλ	-	15	-	I _F = 700mA*3	nm

● **Typical Radiation Pattern**

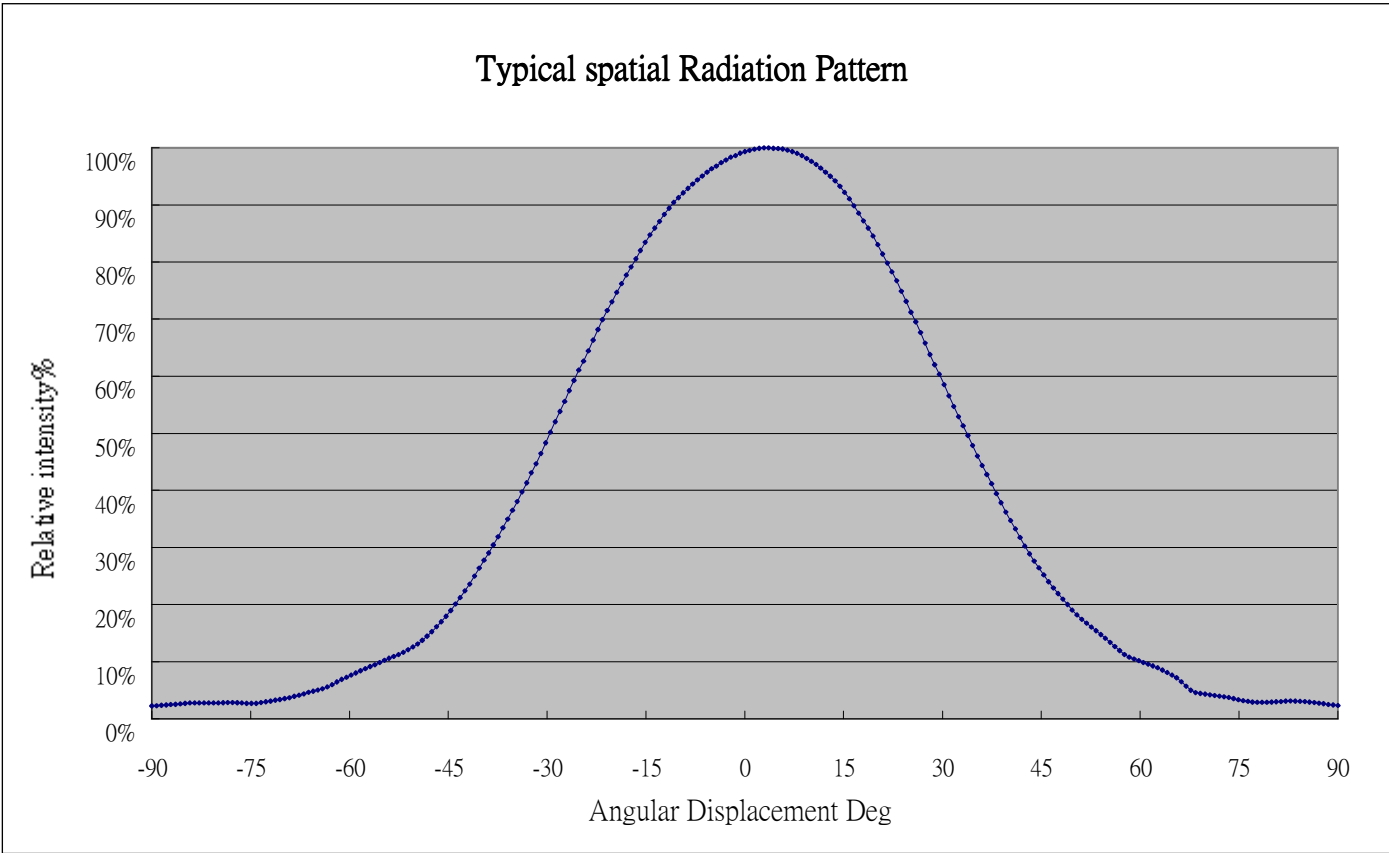


Fig. (60° Lens) Typical Representative Spatial Radiation Pattern

- Wavelength Bins

Wavelength ³	Bin Code	Symbol	Condition	Min.	Max.	Unit
390~420nm	UF	λ_p	$I_F = 700 \times 3 [\text{mA}]$	415	420	nm
	UE			410	415	
	UD			405	410	
	UC			400	405	
	UB			395	400	
	UA			390	395	

Note

Wavelength measurement allowance is $\pm 2\text{nm}$.

Characteristic Diagram

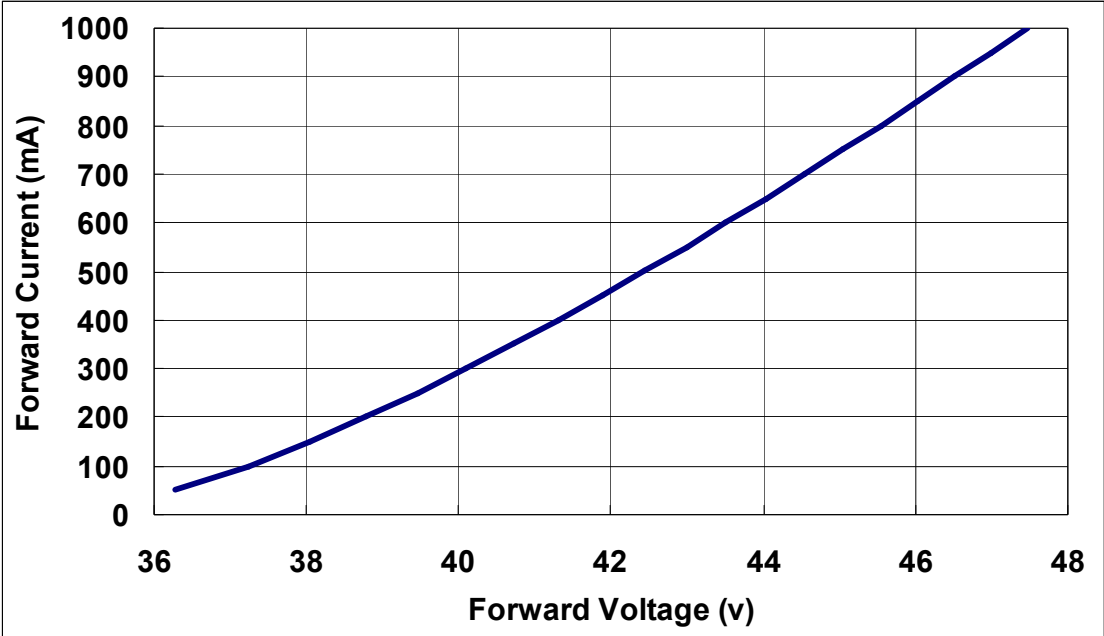


Fig. Forward Current vs. Forward Voltage

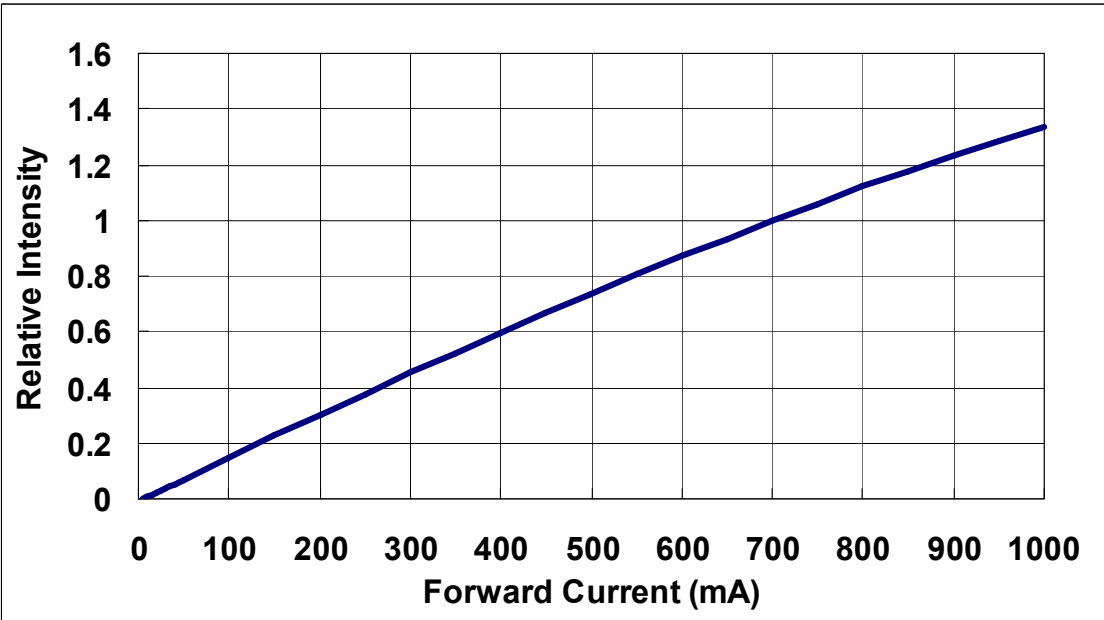


Fig. Relative Intensity vs. Forward Current.

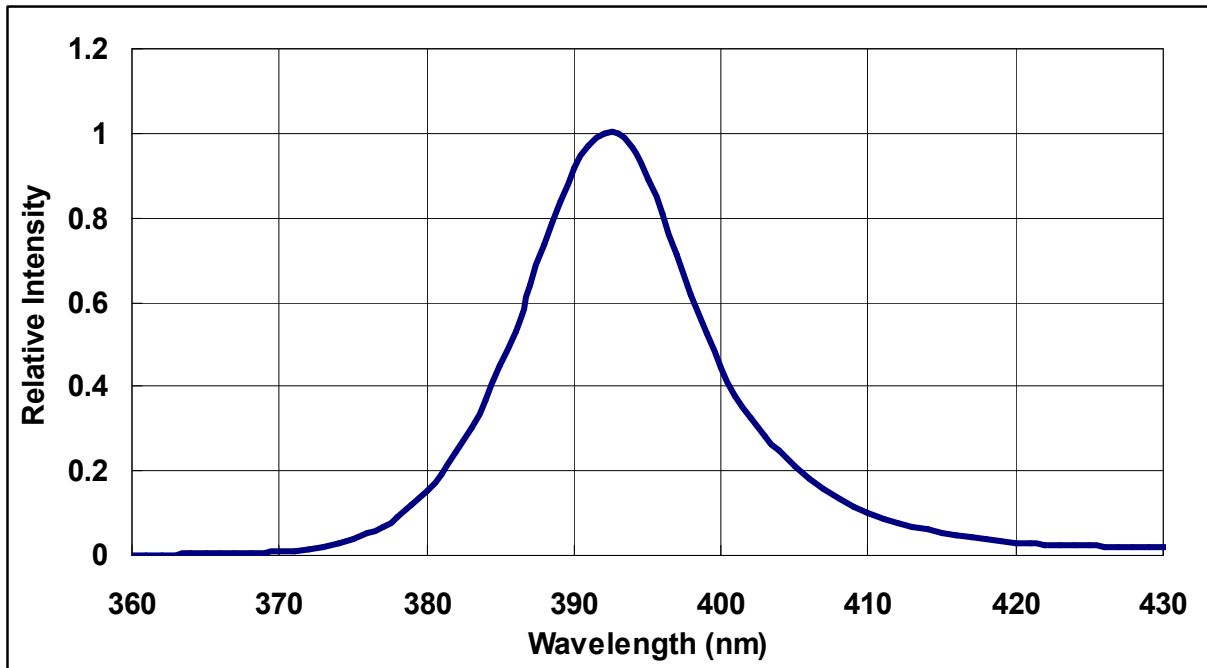


Fig. Typical Relative Intensity vs. wavelength

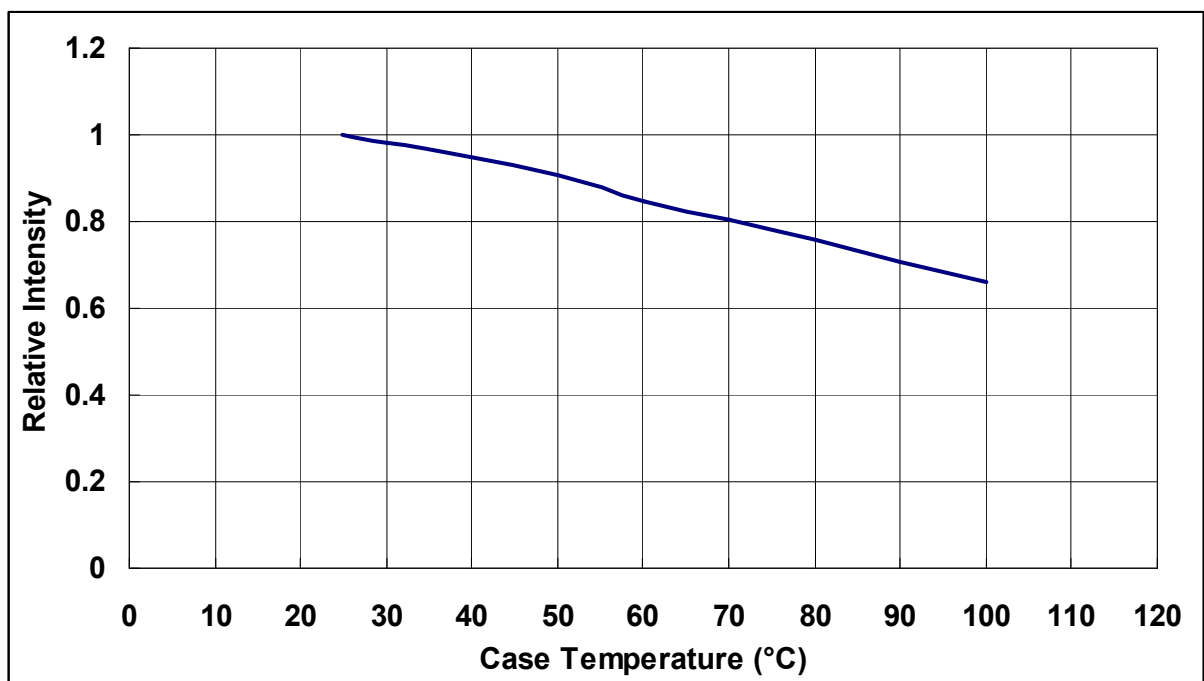


Fig. Relative Intensity vs. Case Temperature

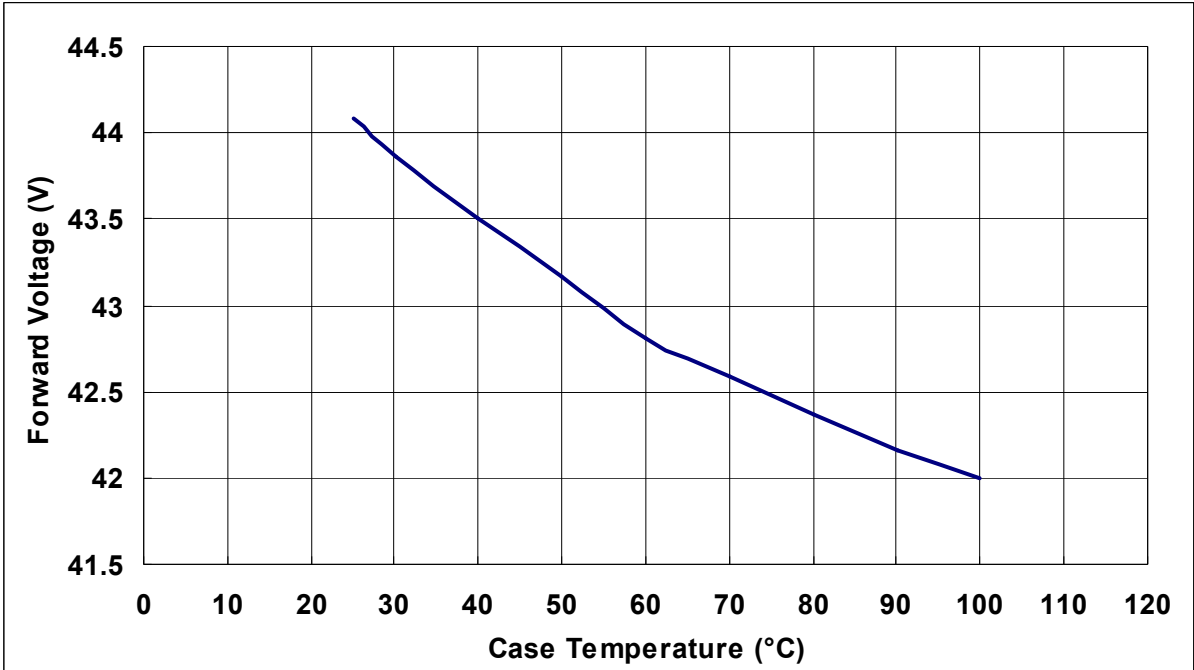


Fig. Forward Voltage vs. Case Temperature

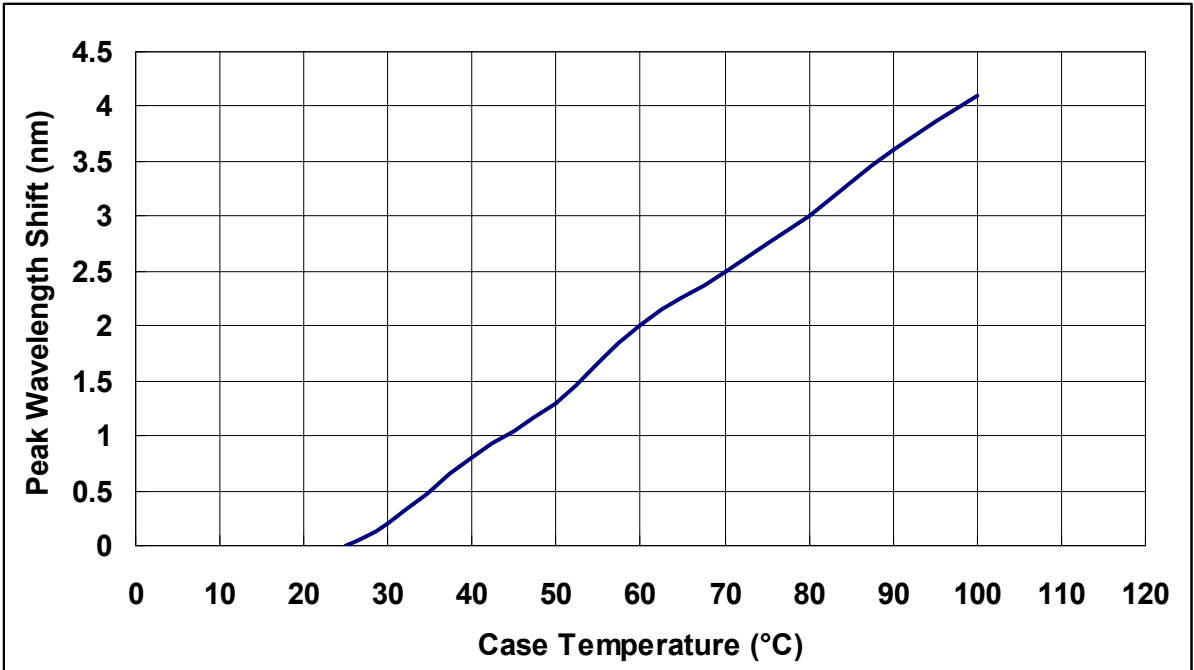


Fig. Peak Wavelength shift vs. Case Temperature

Outline Dimension

Unit : mm

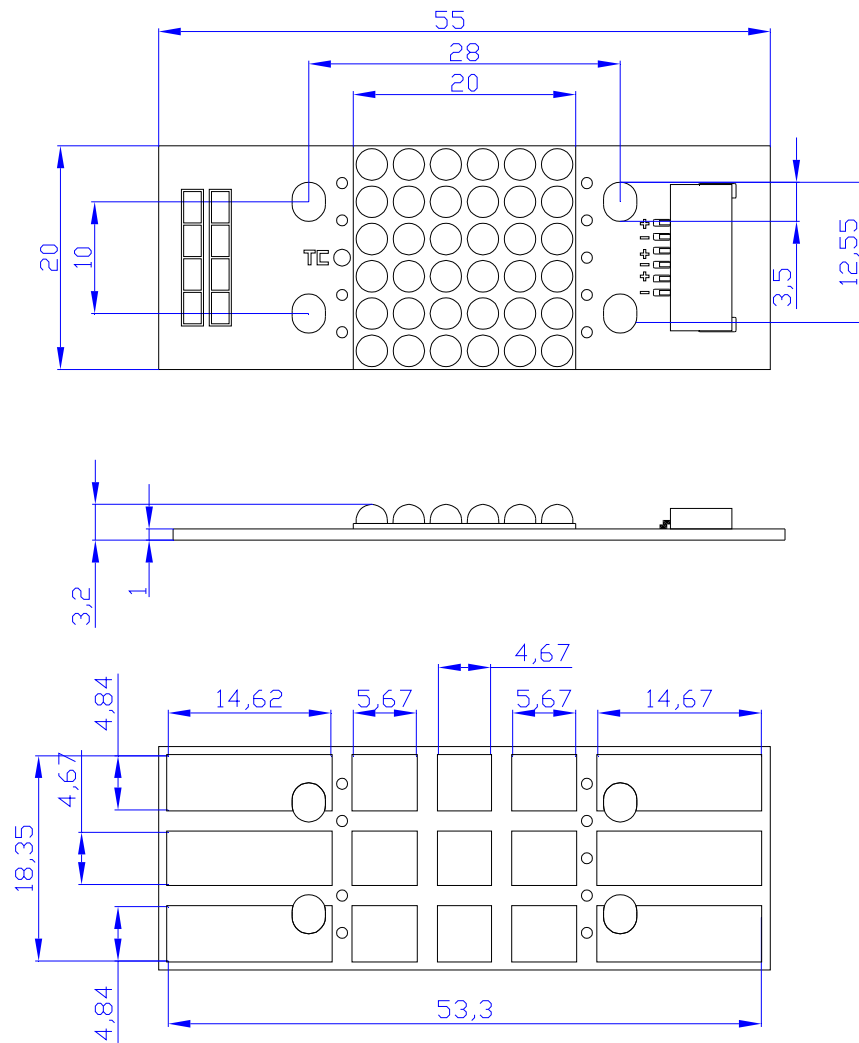


Fig. Outline Drawing.

Note : The COB module was fixed on heatsink with M3 Screw.

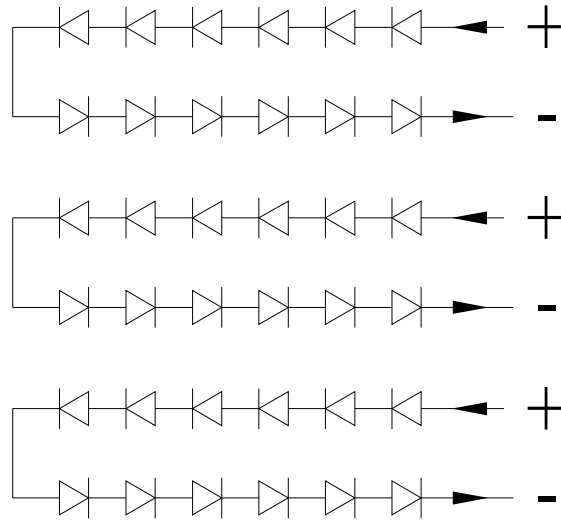


Fig. 12S3P circuit structure diagram.