



# 6Gbps 850nm VCSEL TO-46 Metal Can with Monitor Photodiode, -40 to 85°C

Part No. VCT-A85A51-6M (Common cathode) | VCT-A85A52-6M (Common anode)

## Features

- Multi-mode 850nm VCSEL
- 6Gbps data rate operation
- Low drive current and voltage
- Ball lens type TO-46 can package
- Packaged with attenuating coating and back monitor photodiode



## Applications

- High speed Data communications
- Gigabit ethernet
- Fiber channel

## Specifications

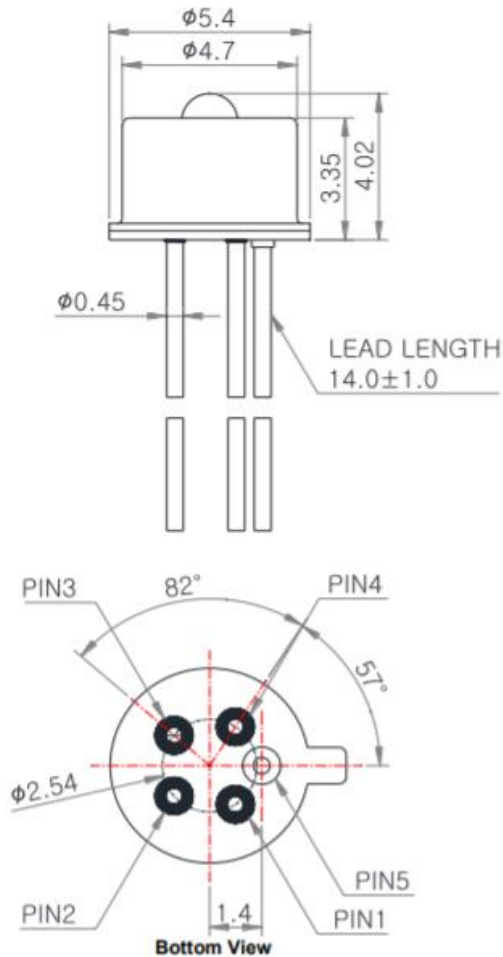
Absolute Maximum Ratings					
Parameters	Min.	Max.	Unit	Conditions	
Storage Temperature	-40	100	°C		
Operating Temperature	-40	85	°C		
Lead Solder Temperature		260	°C	10 seconds	
Continuous Forward Current		10	mA		
Continuous Reverse Voltage		5	V	10uA	

Electro-Optical Characteristics (T <sub>a</sub> =25°C unless otherwise stated)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I <sub>th</sub>		1.0	2.0	mA	CW
Slope Efficiency	η	0.1	0.2	0.35	W/A	I <sub>f</sub> =6mA
Optical Output Power	P <sub>o</sub>		1.5		mW	I <sub>f</sub> =6mA
Peak Wavelength	λ	840	850	860	nm	I <sub>f</sub> =6mA
Spectral Bandwidth (RMS)	Δλ			0.65	nm	I <sub>f</sub> =6mA
Forward Voltage	V <sub>f</sub>		2.0	2.5	V	I <sub>f</sub> =6mA
Breakdown Voltage	V <sub>b</sub>		-10		V	
Rise and Fall Times	t <sub>r</sub>		40		ps	Prebias above threshold, 20%~80%
	t <sub>f</sub>		50			
Series Resistance	R <sub>s</sub>		70		Ohm	I <sub>f</sub> =6mA
Focal Length	F <sub>D</sub>		2.5		mm	
Monitor Current	I <sub>PD</sub>	0.1		0.5	mA	P <sub>o</sub> =1.5mW
Dark Current	I <sub>D</sub>			10	nA	P <sub>o</sub> =0mW, V <sub>R</sub> =5V
PD Reverse Voltage	BVR <sub>PD</sub>	40			V	P <sub>o</sub> =0mW, I <sub>R</sub> =10uA
PD Capacitance	C			50	pF	V <sub>R</sub> =0V, f=1MHz
				20		V <sub>R</sub> =5V, f=1MHz

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I <sub>th</sub> Temperature Variation	ΔI <sub>th</sub>		1.5		mA	T <sub>a</sub> =-40 to 85°C
η Temperature Coefficient	Δη/ΔT		-0.5		%/°C	T <sub>a</sub> =-40 to 85°C, I <sub>f</sub> =6mA
λ Temperature Coefficient	Δλ/ΔT		0.06		nm/°C	T <sub>a</sub> =-40 to 85°C, I <sub>f</sub> =6mA



### Outline Dimensions (unit: mm)



### Pin Configuration

VCT-A85A51-6M		VCT-A85A52-6M	
Number	Function	Number	Function
1	AVCSEL	1	KVCSEL
2	K <sub>m</sub> -PD	2	K <sub>m</sub> -PD
3	A <sub>m</sub> -PD	3	A <sub>m</sub> -PD
4	KVCSEL	4	AVCSEL
5	GND	5	GND

### Additional Notes

- The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.
- Specifications are subject to change without notice.