DENSELIGHT SEMICONDUCTORS
6 Changi North St. 2, SINGAPORE 498831
sales@denselight.com
www.denselight.com

PRODUCT DATASHEET

1547 nm Edge-Emitting LED

DL-US54708T-A-CML-20-R-1U

A. PRODUCT DESCRIPTION

The DenseLight DL-US54708T-A-CML-20-R-1U is an uncooled edge emitting LED in TO-can packaged engineered for optical communication system and test instrument. It operates over a wide temperature range from 0 to 65 °C without any needs for a thermoelectric cooler and temperature controller.

For responsive prototyping enquiries please email: info@denselight.com

B. FEATURES

- High coupled power
- Center wavelength of 1547+/-20nm
- 3dB bandwidth of >40nm
- High speed >150MHz
- Operating temperature range 0 to 65 °C
- TO-56 with aspherical lens

C. APPLICATIONS

- Optical Communication system
- Optical Test Instrument
- Fiber Optic Sensors

D. ABSOLUTE MAXIMUM RATINGS

Operation beyond the absolute maximum ratings can cause degradation in device performance leading to permanent damage to the device.

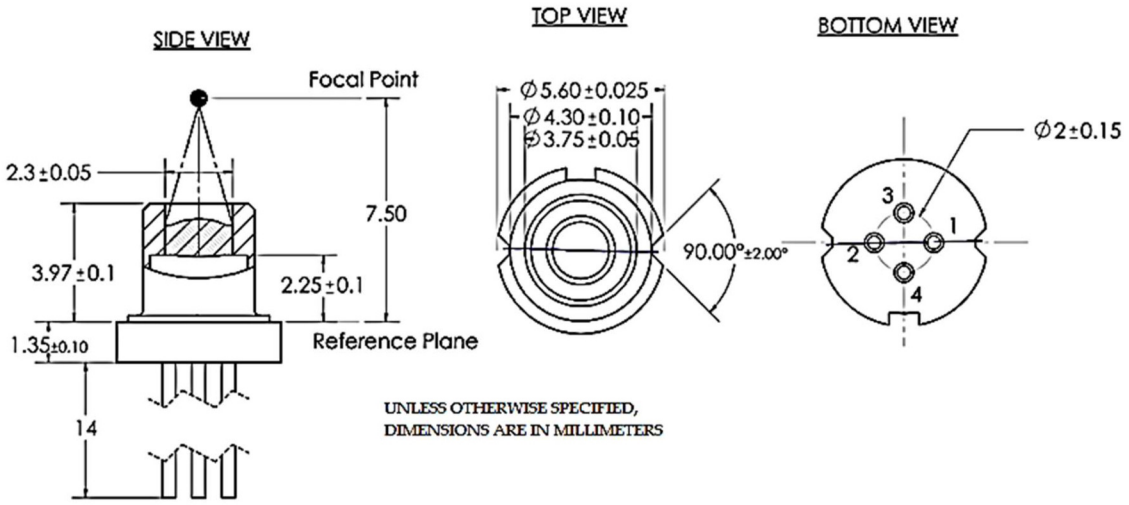
Parameter	Symbol	Condition	Min	Max	Unit
Reverse voltage	V_R	-	-	2	V
Forward current	I_F	-	-	180	mA
Forward voltage	V_F	I_{op}	-	2.5	V
Operating Case temperature	T_c	I_{op}	0	65	°C
Storage temperature	T_{stg}	Unbiased	-40	85	°C
Electro static discharge (ESD)	V_{ESD}	Human body model	-	500	V
Lead soldering temperature	S_{temp}	-	-	260	°C
Lead soldering time	S_{time}	-	-	10	sec

E. SPECIFICATIONS (T_c = 25 °C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Operating current	I_{op}	-	-	-	120	mA
Forward voltage	V_F	I_{op}	-	-	2	V
Optical power	P_o	I_{op}	800	-	-	μW
Center wavelength	λ_C	I_{op}	1527	1547	1567	nm
3dB Bandwidth	B_{FWHM}	I_{op}	40	-	-	nm
Cut off frequency	f_c	I_{op} =100mA ±20mA$_{p-p}$	150	-	-	MHz
Ripple	R	I_{op}	-	-	1	dB
Reverse Current	I_R	-1.9V	-	-	1	uA

[1] T_c is temperature of the TO-can controlled by a jig with temperature control monitored at its base

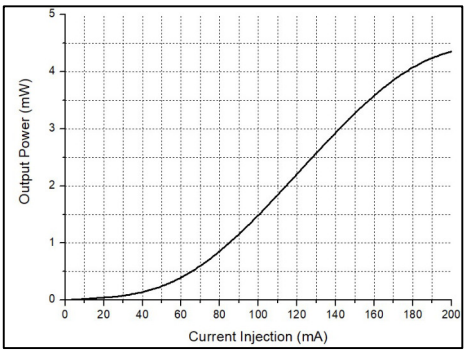
F. PACKAGE



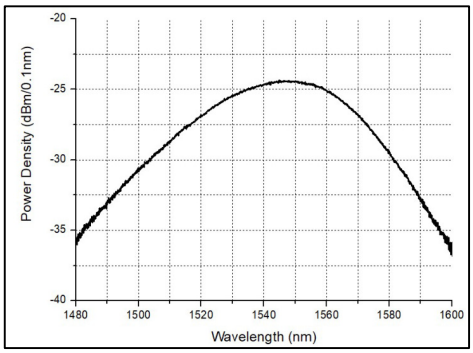
Pin Assignment	Description
1	ELED Anode
2	ELED Cathode
3	NC
4	Case

G. TYPICAL PERFORMANCE CHARACTERISTICS

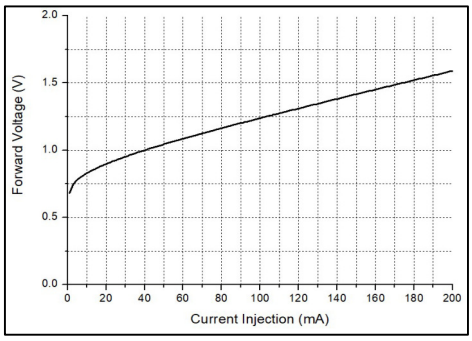
Operating condition: T_c= 25 °C



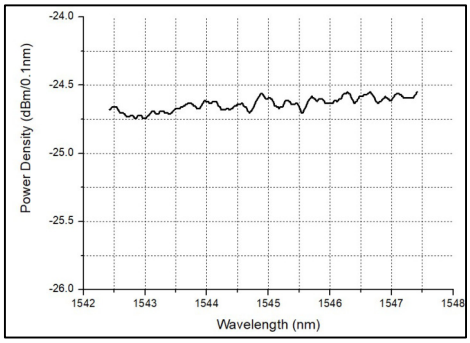
P-I Curve



Spontaneous Emission Spectrum



I-V Curve



Ripple

H. DISCLAIMER FOR CUSTOMER SPECIFIC APPLICATIONS

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