Underdevelopment

940nm Infrared VCSEL

RLD94SAQ8 Series

Datasheet

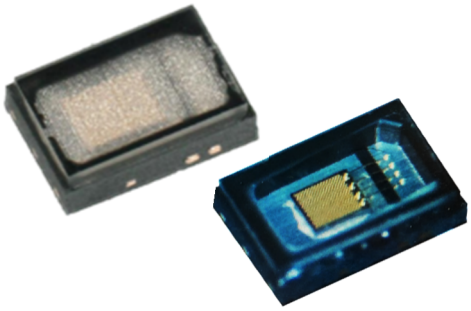
- Application

  3D Depth Sensor

  TOF Sensor

  IR Illumination

  Etc.



- Merit

  Optical output power 2W

  MSL3 250℃ peak reflow compatible

  Thin Package t0.97mm(Diffuser type) , t0.77mm(Clear glass type)

- Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit	
Continuous Forward Current	If (CW)	incompatible	A	
Pulse Forward Current 100Hz Duty1% (on time 100μs)	If (Pulse)	12	A	(Ta = 25℃)
Reverse Voltage	Vr	5	V	(Ta = 25℃)
Junction temp.	Tj	125	℃	
Solder reflow temp.	Tsr	250(10sec)	℃	
Operating temp.	Top	-20 to 70	℃	
Storage temp.	Tstg	-40 to 100	℃	

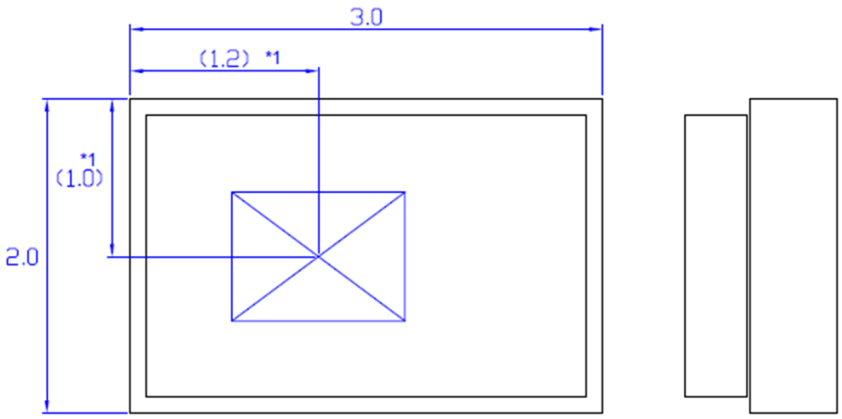
Condition : mounted on AL board with Heatsink

- Characteristics (Ta=25℃)

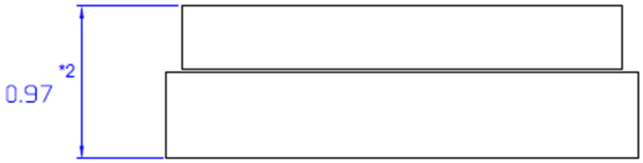
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold current	Ith	–	–	750	–	mA
Optical Power	Po	If=3A (tp=400us)	1.7	2.4	–	W
Forward voltage	Vf	If=3A (tp=400us)	–	2.0	2.6	V
Conversion efficiency	PCE	-	–	40	–	%
Slope efficiency	η	-	–	1.0	—	W/A
Peak Wavelength	λp	If=3A (tp=400us)	930	940	950	nm
λ temp variation	Δλ/ΔT	-	–	0.07	–	nm/℃
ESD damage threshold	ESD HBM	Human Body Model	2000	–	–	V
Far Field Pattern	FFP	*please see page 4.				

Caution : The data above is used as reference only, i.e. not specification guarantee. Specifications and data are subject to change without notice.

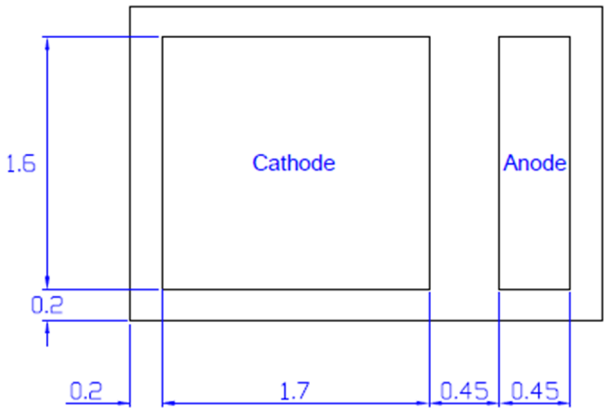
●Dimensions



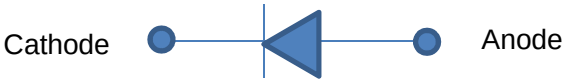
*1 : Light Source Center



*2 : The height of the clear glass type is t0.77mm



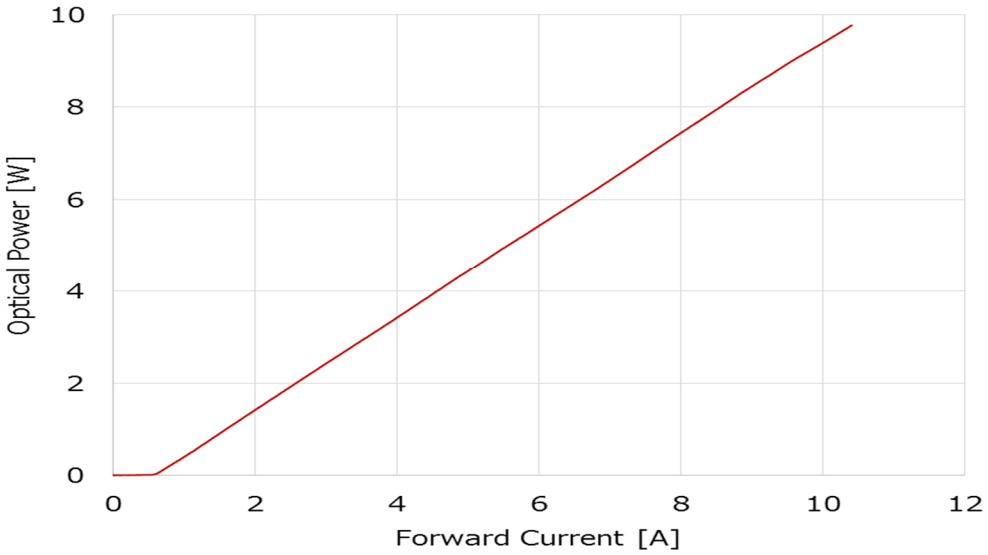
Unit : mm



Note

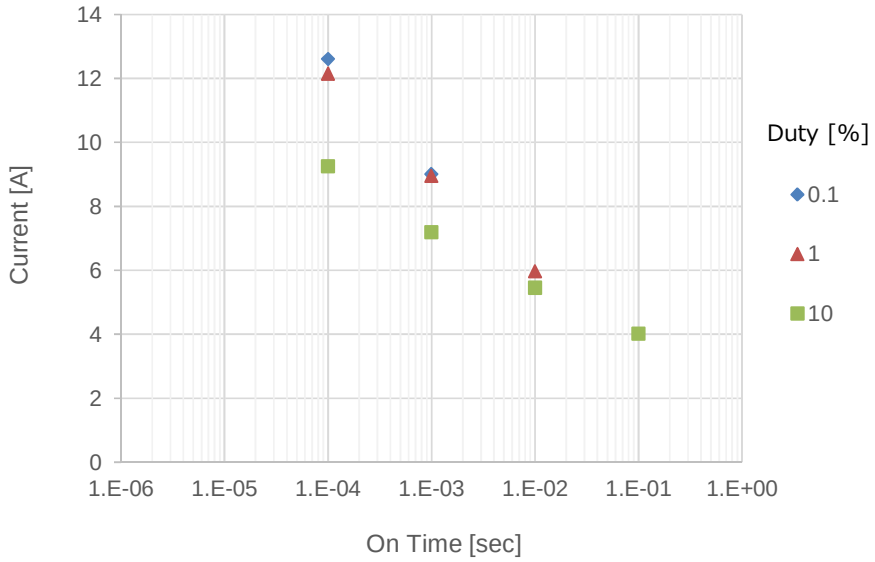
- Unspecified tolerance shall be ±0.15mm
- Dimensions do not include burrs (Max burr size +0.25mm)

●Typical Electro-Optical Characteristics



Condition : Pulse 100kHz Duty1% (on time 100ns) , Ta=25℃ with Heatsink

●Permissible Pulse Handling Capability

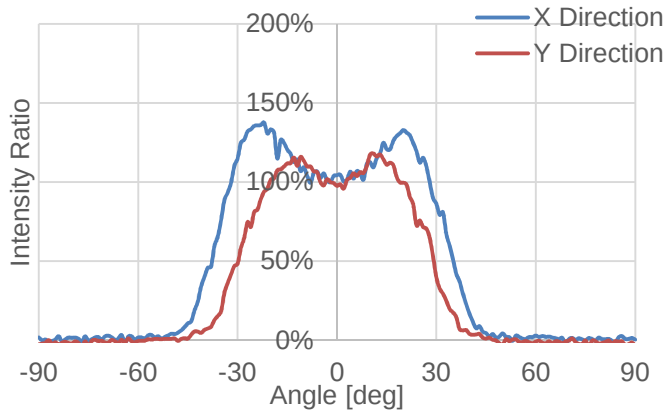


＊This gragh indicates Tj=125℃ points.

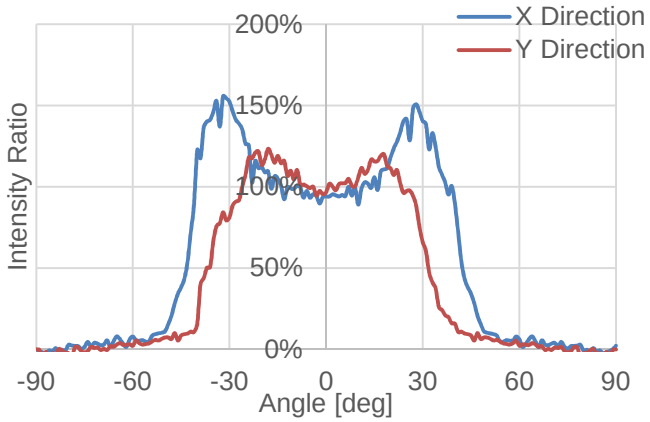
Condition : mounted on AL board with heatsink, Ta=25℃

●Far Field Pattern (Diffuser Type)

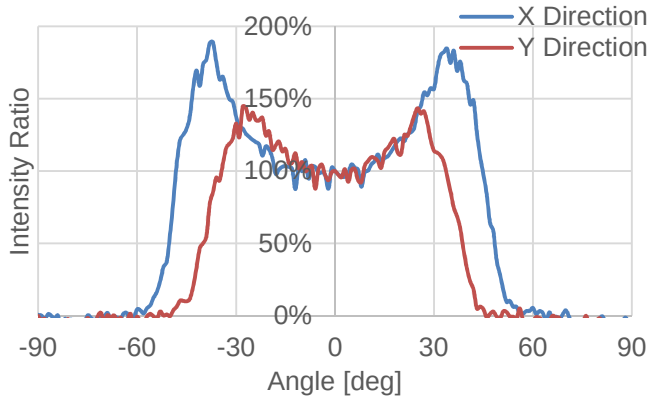
・60×45deg Diffuser



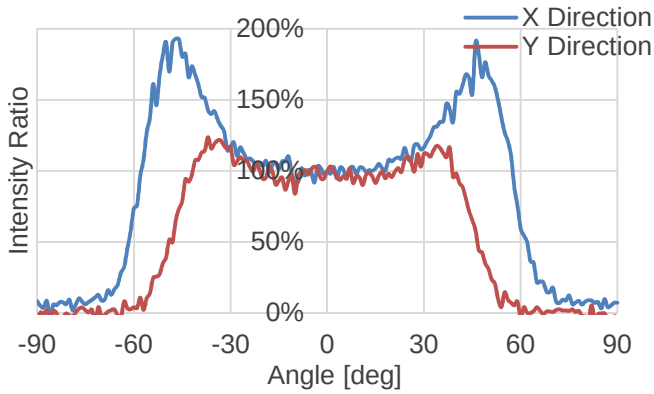
・72×55deg Diffuser



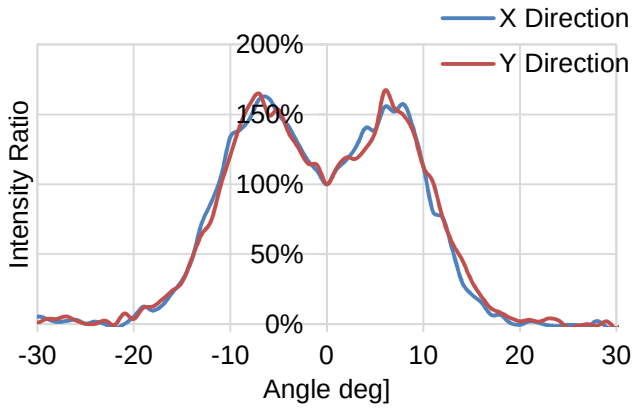
・90×69deg Diffuser



・110×85deg Diffuser



●Far Field Pattern (Clear Glass Type)



[Type List]

RLD94SAQ8-00A	Clear Glass
RLD94SAQ8-10A	60×45deg
RLD94SAQ8-20A	72×55deg
RLD94SAQ8-30A	90×69deg
RLD94SAQ8-40A	110×85deg
RLD94SAQ8-50A(TBD)	120×90deg(TBD)

[Condition]

・If=3A (Pulse 100Hz Duty1%(on time 100us))
・Ta = 25℃

Notes

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