

AlGaAs / GaAs VCSEL Chip ---TK1413VAN

1. Scope

- The specification applies to AlGaAs infrared chips
- Type : TK1413VAN

2. Structure

- AlGaAs with AlGaAs / GaAs DBR structure—VCSEL Chip.
- P Electrode (anode) : Gold.
- N Electrode (cathode) : Gold.

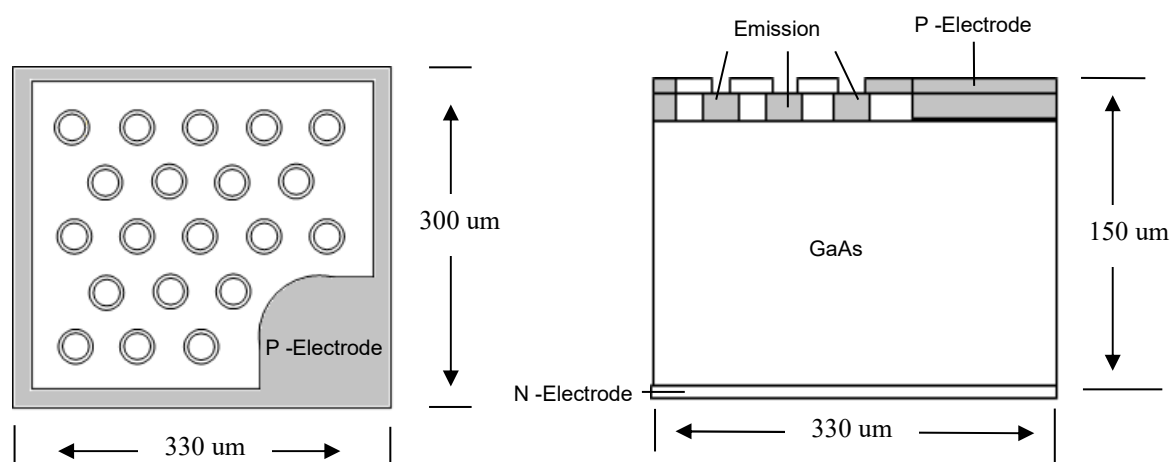
3. Size

- Chip size : $330 \times 300 \mu\text{m} \pm 25 \mu\text{m}$
- Thickness : $150 \pm 25 \mu\text{m}$
- Bonding Pad : $100 \mu\text{m}$
- Pattern drawing : per fig. 1

4. Electro-Optical Characteristics

($T_a = +25^\circ\text{C}$)

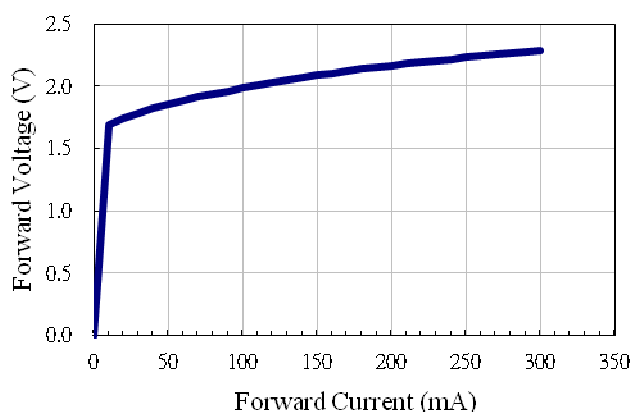
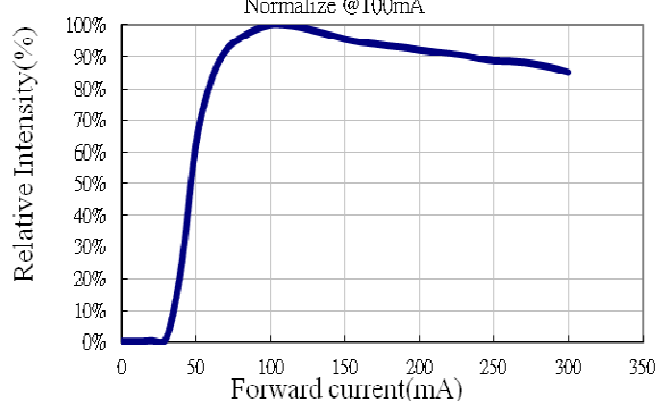
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 200\text{mA}$		2.30		V
Slope Efficiency	η_s	$I_F = 200\text{mA}$		0.55		W/A
Output Power	P_o	$I_F = 200\text{mA}$		100		mW
Center Wavelength	λ_c	$I_F = 200\text{mA}$	930	940	950	nm
Beam Divergence	Θ	$I_F = 20\text{mA}$		36		Degree
ESD		HBM		3000		V
Threshold Current	I_{th}	$T = 25^\circ\text{C}$		30	35	mA
Output Power	P_o	$I_F = 200\text{mA}$		100		mW



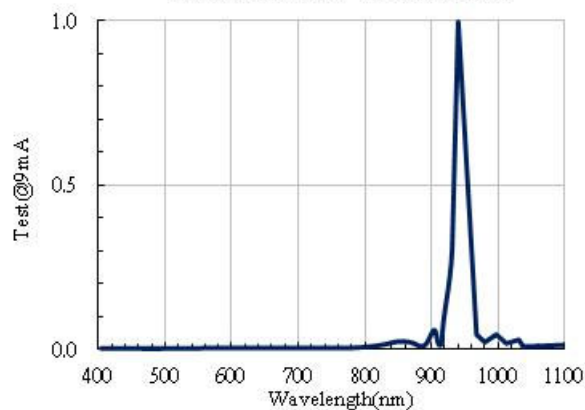
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Electro-Optical Characteristics Curve

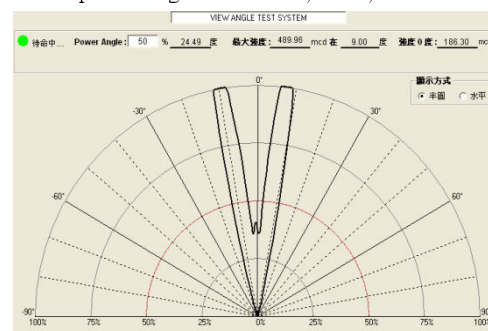
Forward Voltages vs Forward Current(mA)

Relative Intensity vs. Forward Current
Normalize @100mA

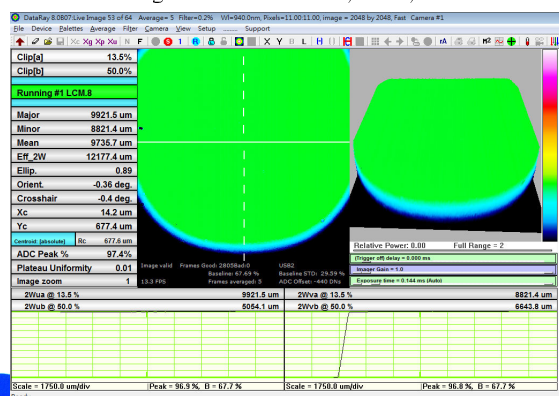
Relative Intensity vs. Wavelength



Half power angle on TO-can, 25°C, 100mA



Emitting Pattern on TO-can, 25°C, 100mA



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