

High Speed 700-890nm Photodetector Chip up to 50 Gbit/s

Product Code: D30-850C 1x1
 D30-850C4 4x1
 D30-850C12 12x1



Sample image only. Actual product may vary.

Preliminary

Product Description

These high-speed top-illuminated GaAs-based *pin* photodetector chips are available for the use in development and evaluation of lasers and the next-generation of data communications systems. The chip exhibits a responsivity greater than 0.4 A/W at 850 nm. The PDs are available as individual chips or as linear arrays (4-ch, 12-ch) allowing alignment to single mode fiber or multi mode fibers. The chip can be wire bonded or flip-chip stud bonded.

Features

- single chip or 4/12 ch array
- up to 40 Gbit/s per channel
- High temperature stability
- pitch size 250 μ m

Applications

- Active Optical Cables (AOC)
- Ultrahigh-Speed Optical Interconnects
- 40/100 Gbit/s Ethernet
- 400 Gbit/s Ethernet
- Chip-to-Chip Interconnects

Parameter	Typical	Notes
Operating Wavelength	700 - 890 nm	
Data Rate	up to 40 Gbit/s per channel	
Responsivity	0.4 W/A	
Small signal -3dB bandwidth	30 GHz	

Preliminary

Electro Optical Specifications (T = 0 to 85°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Data bit rate	BR				40	Gbit/s
Small signal -3dB bandwidth	BW_{f3db}	$V_{bias} = -2 V$		30		GHz
Operating wavelength	λ		700	850	890	nm
Rise / Fall time	t_R / t_F	Ti Sapphire laser 3 pcs input pulse 20 – 80%		9		ps
Responsivity	R			0.4		A/W
Capacitance	C				80	fF
Dark current	I_D	$V_{bias} = -5 V$		≤ 1		nA

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Max	Unit
Max input power	P_{max}	at 850nm		2	mW
Operating temperature	T_{op}			100	°C
Storage temperature	T_{st}		-40	100	°C
Soldering Temperature	T_{sl}	max 260 sec		150	°C
Reverse voltage	V_r			-20	V
Reverse breakdown voltage	V_{BR}			-55	V

Mechanical Dimensions

Parameter	Type	Min	Typ	Max	Unit
PD pitch			250		μm
Length	D30-850C1		210	250	μm
	D30-850C4		960	1000	μm
	D30-850C12		2960	3000	μm
Height			150		μm
Width			220	250	μm

All product specifications and descriptions are subject to change without notice.

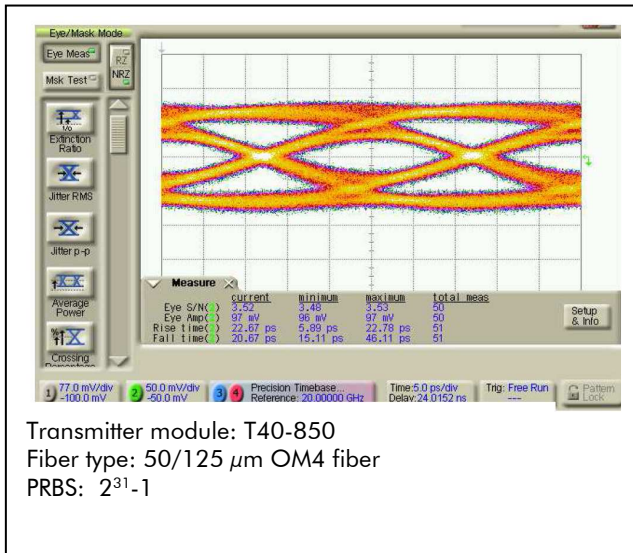
Datasheet

D30-850C

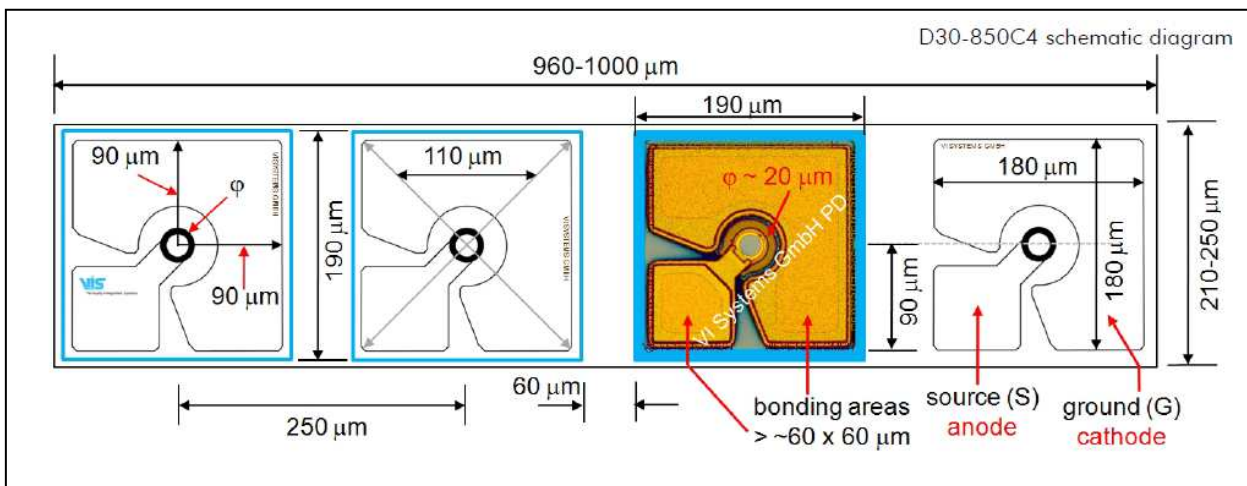


Vertically Integrated Systems

Optical eye diagram at 40 Gbit/s



Dimensions



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Limited Qualification Notification

The D30-850Cxx has been tested to meet specifications outlined in this datasheet. However it has not undergone full qualification testing or characterization and therefore may not meet the performance specifications over all extremes.



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