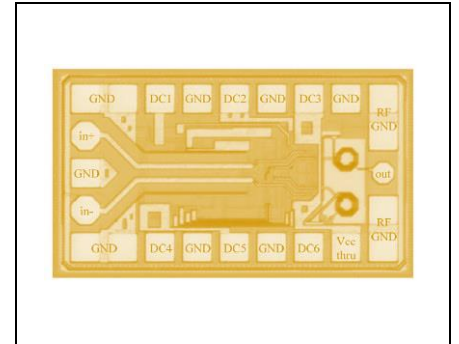


50 Gbit/s Driver IC for EOM-VCSEL



Sample image only. Actual product may vary

Product Code: A50-300C

Preliminary

Product Description

The A50-300C is a high speed driver IC designed for use with electro-optical modulated VCSEL for up to 56 Gbit/s in fiber optic transmission systems. The A50-300C operates from a single +5V supply typically dissipating 380mW of DC power. The device is available as engineering sample.

Features

- data rate up to 56 Gbit/s
- Differential ended signal input
- small footprint 600 μm x 1,000 μm
- supply voltage 5V

Applications

- Research and development
- IEEE 40/100G transceiver
- Proprietary fiber optic links

Parameter	Typical (PD chips)	Notes
Data rate	56 Gbit/s	
Output Voltage Swing	2.0 V _{pp}	extrapolated at a capacitive load
Supply Voltage	5 V	
Power Consumption	380mW	

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

Please contact our sales department for additional information and to receive a quotation: sales@v-i-systems.com

Datasheet

A50-300C



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Electrical Specifications

Preliminary

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Maximum Data rate		BER < 10 ⁻¹²		50	56	Gbit/s
Small signal bandwidth	BW			35		GHz
Rise / Fall Time	t _R / t _F				10	ps
Max. Deterministic Jitter	J _D				1.5	ps
Voltage Swing Input	V _{IN}			250		mVpp
Output voltage swing	V _{OUT}	extrapolated at a capacitive load			2	Vpp
Reference Impedance (SE)	Z _{0, SE}	Single ended		50		Ω
Reference Impedance (DIFF)	Z _{0, diff}	Differential		100		Ω

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Power Supply Voltage	V _{CC}			5	5.2	V
Input Stage	V _{xing}		0	1.6	3.3	V
Output Stage	V _{mod}		0	1.6	3.3	V
Shipping/Storage Temp.	T _{ST}		-40		+125	°C
Soldering Temp.	T _{SD}	< 10 sec			+300	°C

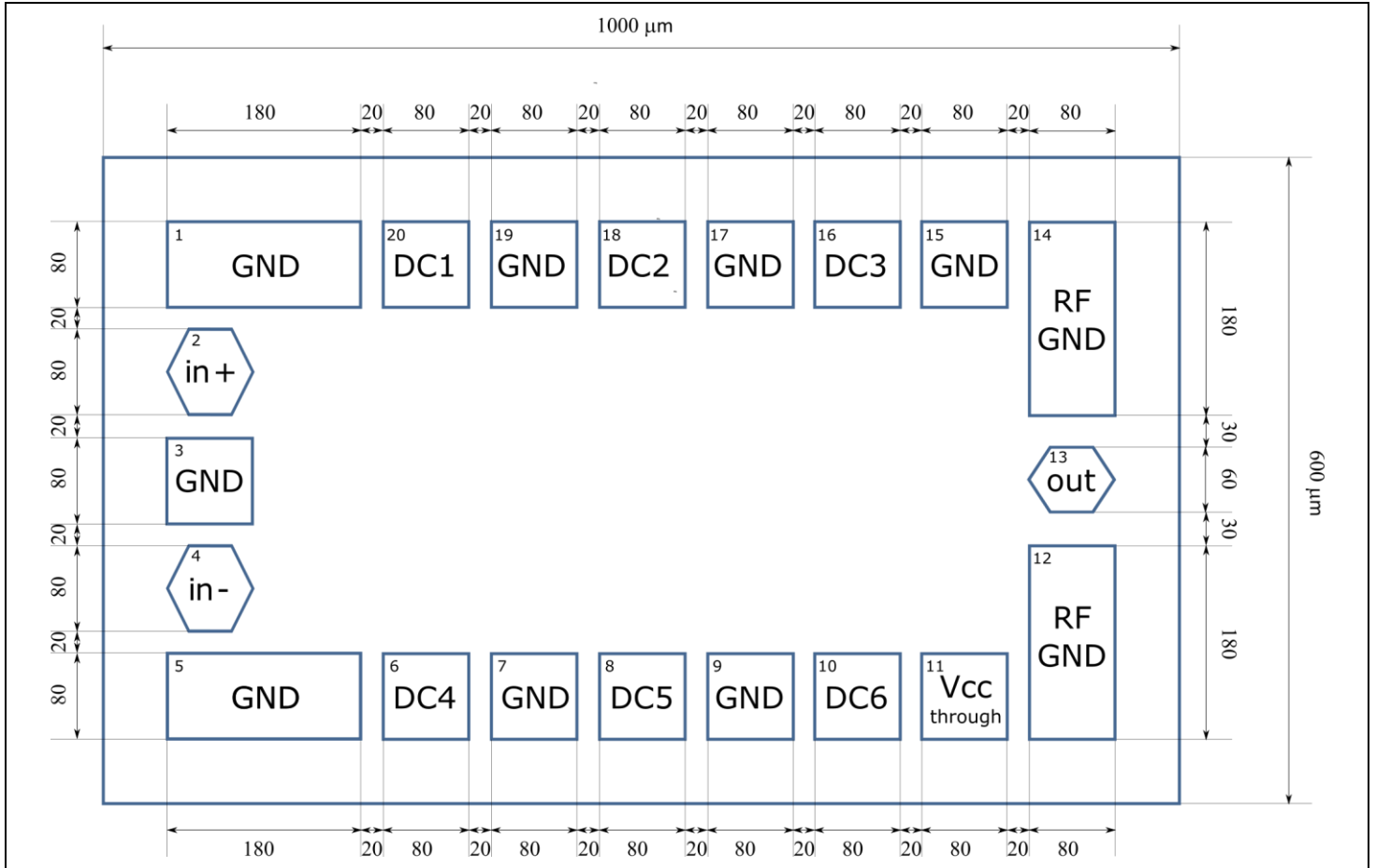
Operating conditions

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Power Supply Voltage	V _{CC}			5	5.2	V
Power Dissipation	P _D			380	400	mW
Operating Temperature	T _J		-10	+25	+85	°C

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Pad Layout



Name	Pin	Description	Function
Vin+	2	HF input (positive)	Input
Vin -	4	HF input (negative)	Input
Vout	13	HF output	Output
Vcc	16/18/20	5V Supply voltage	Supply
Vxing	6	Input stage: 0 to 3.3V / typ. 1.6V	Supply
Vmod	8	Output stage: 0 to 3.3V / typ. 1.6V	Supply
Vbias	10	Through connection to RF ground	No use
RF GND	12,14	Internally connected	Supply
GND	1,3,5,7,9,15,17,19	Ground	Ground

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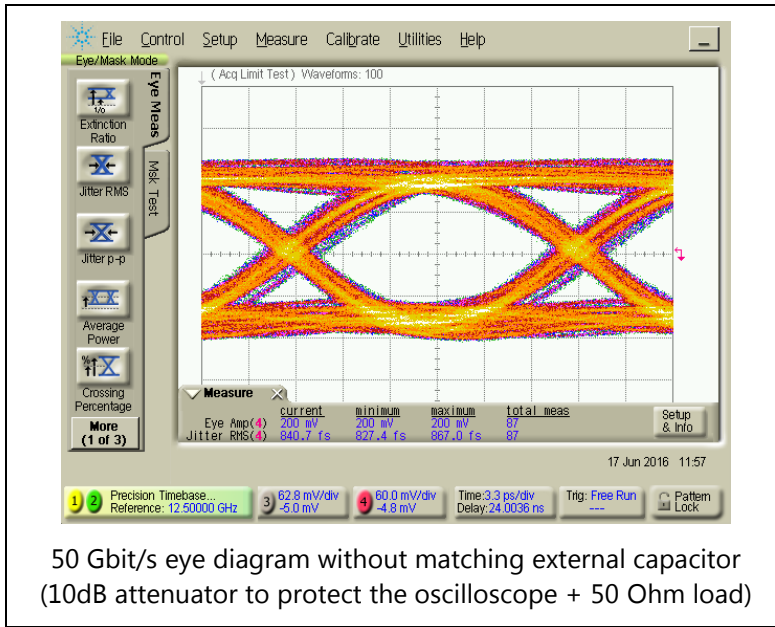
Datasheet

A50-300C



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Eye diagram at 50 Gbit/s



Limited Qualification Notification

The A50-300C has been tested to meet specifications outlined in this data sheet at room temperature. 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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