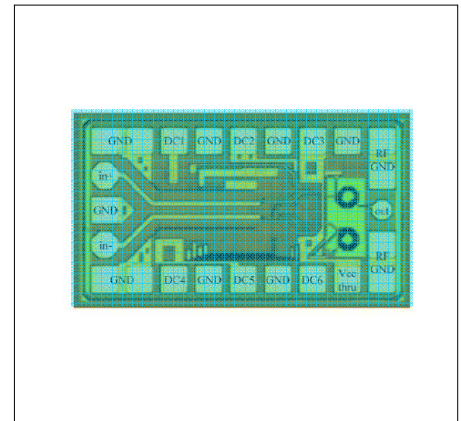


40 Gbit/s Optical Modulator Driver IC

Product Code: **A40-300C90**



Sample image only. Actual product may vary.

Preliminary

Product Description

The A40-300C90 is a three stage high speed driver IC designed for the use with 40 Gbit/s optical modulated laser in fiber optic transmission systems. The A40-300C90 operates from a single +5 V supply. It features a high voltage drive capability and up to 10 mA output modulation current.

Features

- data rate up to 40 Gbit/s
- Differential ended signal input
- output drive voltage 2.6V
- modulation current 10mA
- low power dissipation
- 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	Notes
Data rate	40 Gbit/s	
Output Voltage Swing	2.6 V	
Modulation current	10 mA	
Supply Voltage	5 V	

**Optical modulator driver IC
A40-300C90**

Preliminary

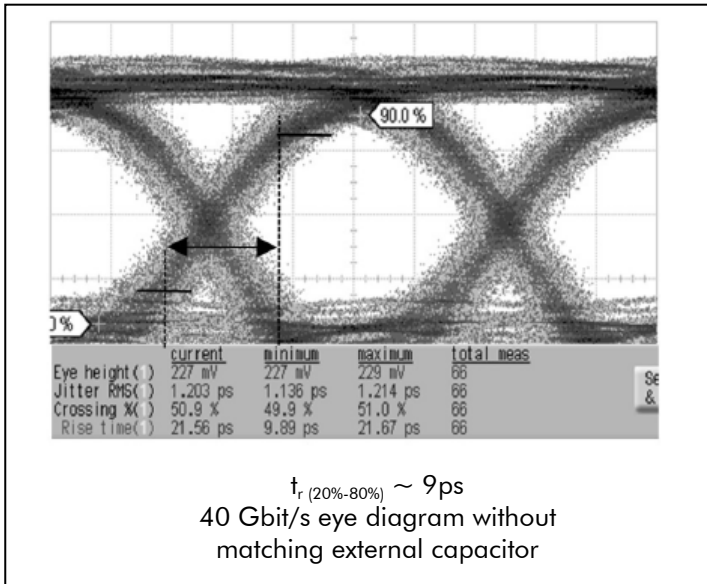
Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Maximum Data rate		10^{-12}	40			Gbit/s
Rise / Fall Time	t_R / t_F			10	11	ps
Max. Deterministic Jitter	J_D				1.5	ps
Voltage Swing Input	V_{ppI}		400	500	600	mV
Output Voltage Swing	$V_{pp,d}$				260	mV
Reference Impedance (SE)	$Z_{0, SE}$	Single ended		50		Ω
Reference Impedance (DIFF)	$Z_{0, diff}$	Differential		100		Ω

Optical modulator driver IC A40-300C90

Preliminary

Eye diagram



Absolute Maximum Ratings

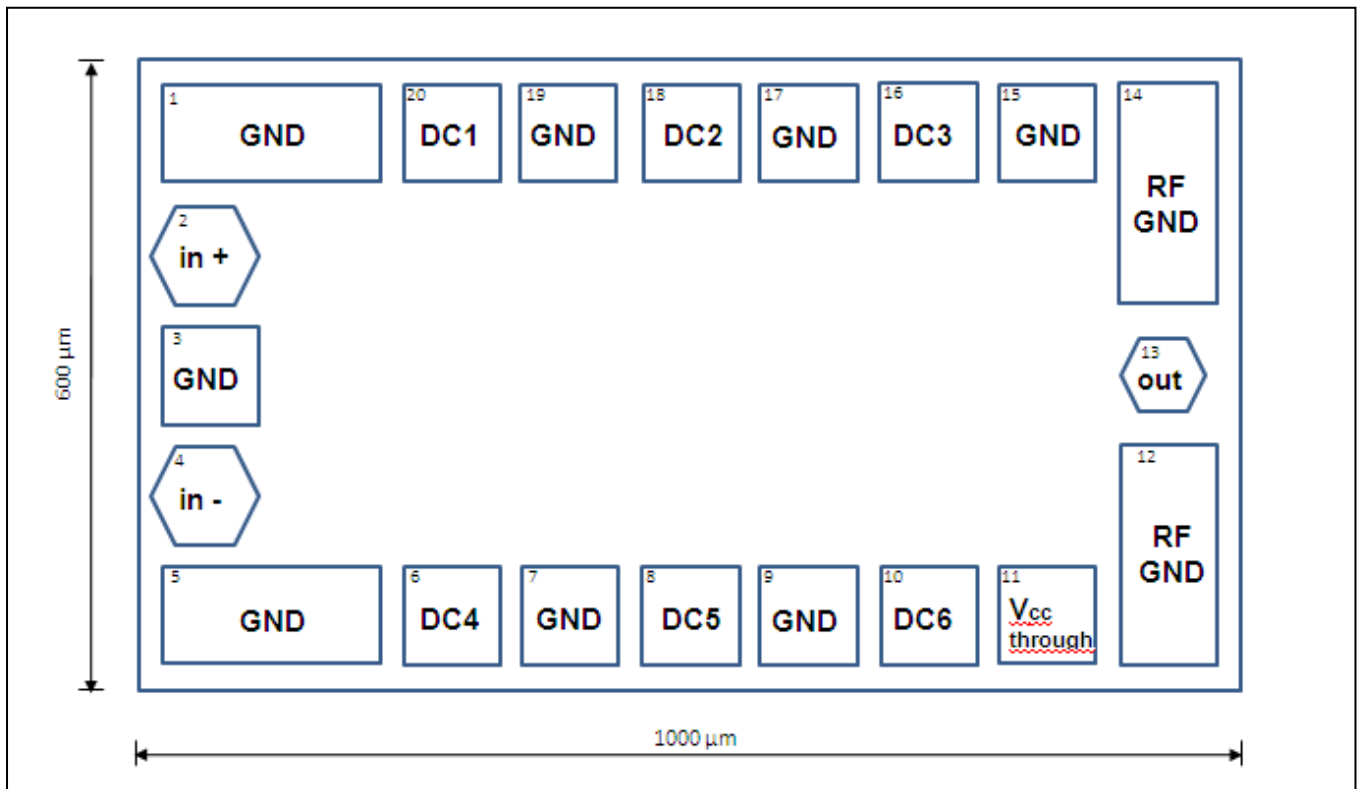
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Power Supply Voltage	V_{cc}			5	5.2	V
BIAS Voltage	V_{bias}		3.0	3.2	3.4	V
Input Stage	V_{xing}	or open	0	1.6	3.3	V
Output Stage	V_{mod}	or open	0	1.6	3.3	V
Shipping/Storage Temp.	T_{ST}		-40		+125	°C
Soldering Temp.	T_{SD}	< 10 sec			+300	°C

Operating Conditions

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Power Supply Voltage	V_{cc}			5		V
Power Dissipation	P_D			370		mW
Operating Temperature	T_J		-10	+25	+85	°C

Preliminary

Pad Layout



Name	Pin	Description	Function
Vin+	2	HF input (positive)	Input
Vin-	3	HF input (positive)	Input
Vout	13	HF output	Output
Vxing	6	0 to 3.3V / typ. 1.6V	Supply
Vmod	8	0 to 3.3V / typ. 1.6V	Supply
Vbias	9/10	0 to 3.4V / typ. 3.2V	Supply
Vcc	16/18/20	Supply Voltage, typ. 5V	Supply
RF GND	12/14	0 to 3.4V / typ. 3.2V	Supply
GND	1/3/5/7/9	Ground	Supply
GND	15/17/19	Ground	Supply



Optical modulator driver IC A40-300C90

Limited Qualification Notification

The A40-300C90 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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