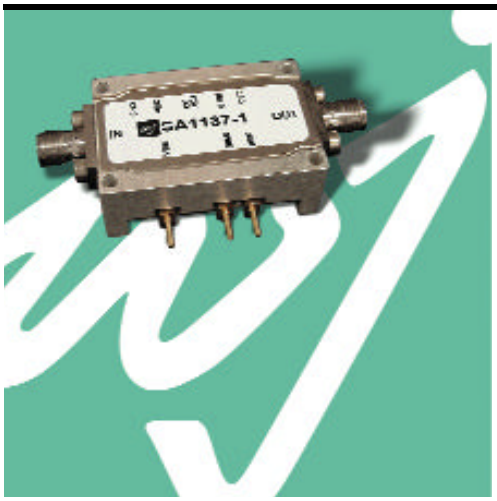
SA1137-2 OPTICAL MODULATOR DRIVER

WJ's 10Gbps modulator drivers
An RF evolution for OC-192

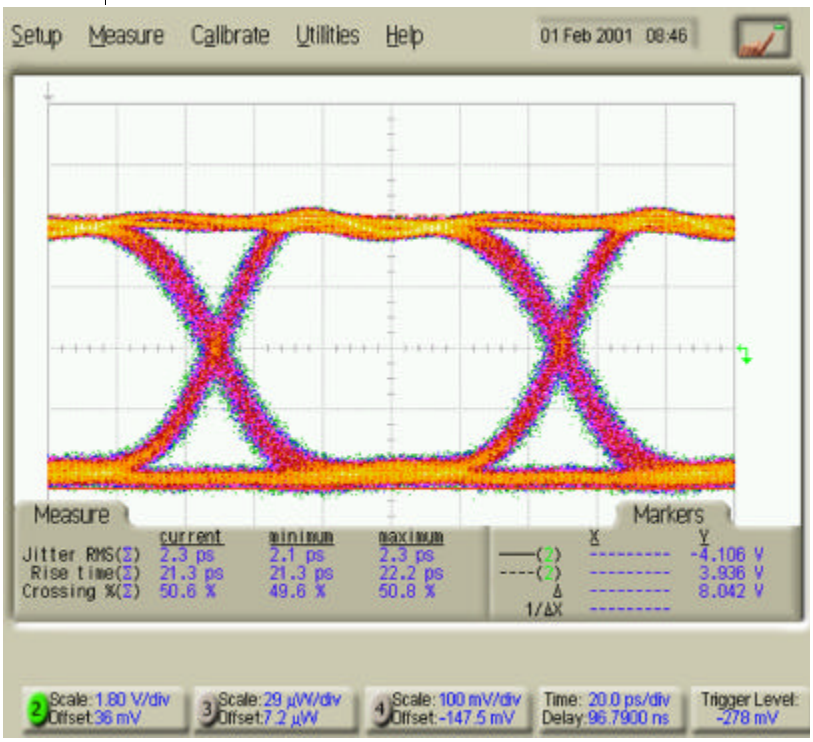


The SA1137 is another addition in WJ's series of hybrid-based products optimized for OC-192 networks. The SA1137 is a full-function amplifier capable of driving $LiNbO_3$ modulators. The SA1137's limiting action can actually improve on multiplexer rise and fall times. This makes the SA1137 an excellent choice for optical RZ and NRZ systems alike. The SA1137 is designed for the full range of OC-192 data rates from 9.9Gbps through 12.25Gbps (FEC rate).

Non Inverting Data Driver

- Low Power Consumption
  +11V @ 250 mA typical
  -5 V @ 27 mA typical

- Greater than 12 Gbps
- 8 V output amplitude
- 5 V output amplitude control range
- 25 ps rise/fall times
- Electronic crossing % control
- Output level detector
- Reference level detector
- Integral modulator DC bias
- Internally regulated
- Automatic DC bias sequencing



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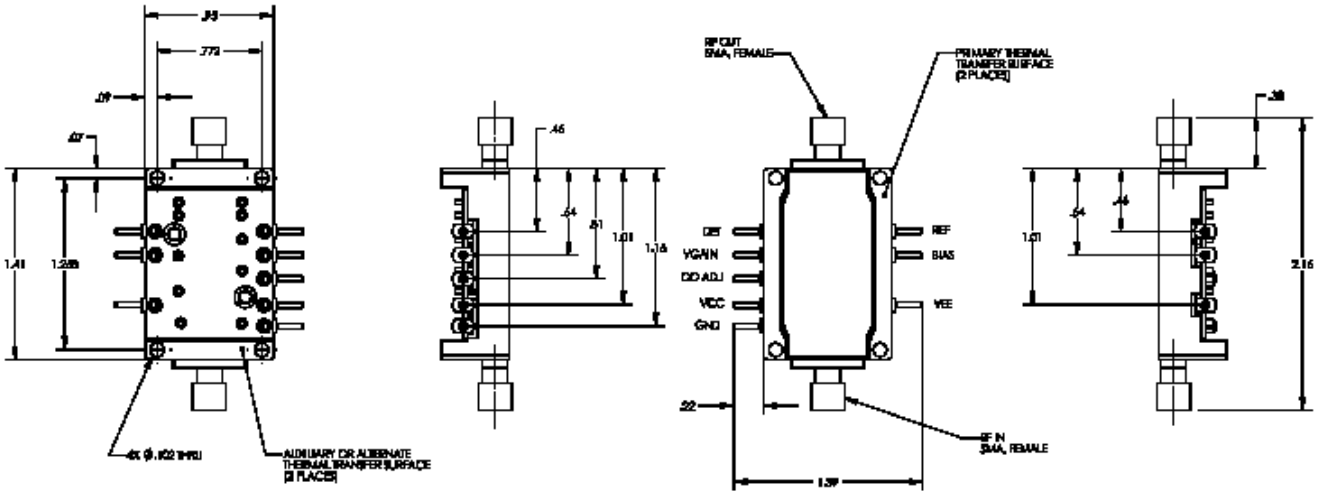
SA1137-2 NON-INVERTING OC-192 OPTICAL MODULATOR DRIVER AMPLIFIER SPECIFICATIONS

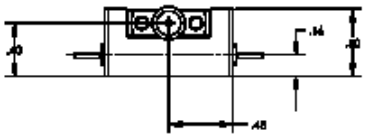
Parameter	Conditions	Minimum	Typical	Maximum	Units
Data Rate	NRZ			12.25	Gbps
Minimum Operating Frequency				30	KHz
Input Voltage Range		600		900	mV
Output Signal Amplitude (max.)	Vgain = 0V	7.5	>8		V
Output Signal Amplitude (min.)	Vgain -10V		<3	4	V
Level Control Bandwidth		30			KHz
Rise/Fall Time	20% to 80%		≤25	30	ps
Crossing Point Control Range	no connection +5V -5V	45% -5% +5%	50%	55%	
Output Level Detector	V_{Ref} V_{Ref}-V_{Det}		380 90@4Vpp/300@7.5Vpp		mV mV
Input/Output VSWR	100KHz to 15 GHz		<2:1	2.3:1	
Operating Case Temperature		-5		+75	°C

Pin Reference	Function	Voltage	Current (mA)	
			typical	maximum
Vcc	Positive Bias	+11v	270	300
V_{EE}	Negative Bias	-5v	27	30
Gain	Output level control	0 to -10V		6
Bias	Output DC offset (thru a 1.8K ohm)	-10 to +25V_{DC}		
Det	Output level detector	0-400mV		
Ref	DC reference for detector	380mV		
Co Adj	Crossover adjustment	-5 to +5v		1

Notes:

1. **Unit weight .XXX onces max.**
2. **Dimensions are expressed in inches**
3. **Tolerance .XXX ± 0.005**
   .XX ± .02





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