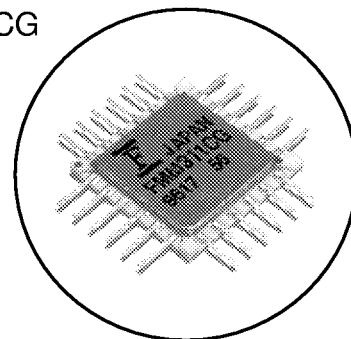


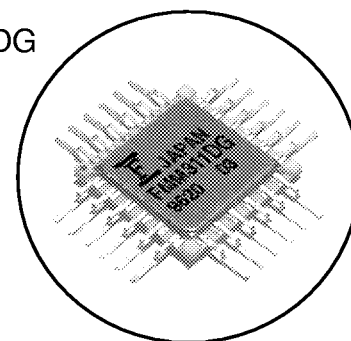
FEATURES

- Operation DC to 2.7 Gbit/s, NRZ
- Maximum Peak and Bias Current of 80mA Typical
- Peak and Bias Current Adjustment
- ECL Compatible Input
- Single Ended or Differential Input
- Single -5.2V Power Supply
- Bias Current Monitoring
- Mark Density Monitoring
- High Reliable, Metal/Ceramic 24-pin Hermatic Flat Package

CG



DG



DESCRIPTION

The FMM311CG and FMM311DG GaAs Laser Driver are a high-data rate driver circuit designed for fiber optic transmitters operating at data rates up to 2.7Gbit/s (NRZ). The device is capable of driving the high-power Laser Diodes at peak and bias currents up to 80mA typically. Peak and bias currents can be automatically controlled by applying a feedback signal from an external Automatic Power Control Circuit. A mark density monitor useful for stabilizing the optical output power of the transmitter is also provided.

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature Ta = 25°C)

Rating	Symbol	Values	Unit
Supply Voltage	VSS	-7.0 to 0	V
Input Voltage	VIN	VSS to 0	V
Power Supply Current	ISS	300	mA
Peak Current Control Voltage	VIP	VSS-2.0 to VSS +3.0	V
Bias Current Control Voltage	VIB	VSS-2.0 to VSS +3.0	V
Storage Temperature	Tstg	-55 to 125	°C

ELECTRICAL CHARACTERISTICS (T_c = 25°C, V_{SS} = -5.2V)

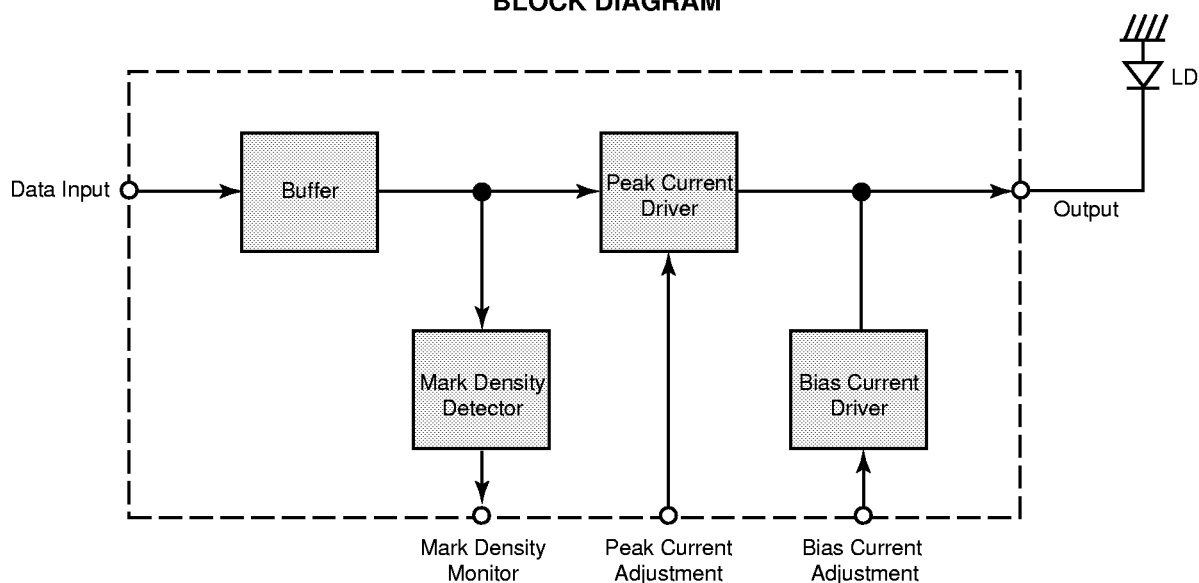
Parameter	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Maximum Data Rate		NRZ	2.7	-	-	Gbit/s
Maximum Peak Current	I _p	V _{IP} = -3.1V, V _{IB} = -5.2V	60	80	-	mA
Maximum Bias Current	I _B	V _{IP} = -5.2V, V _{IB} = -3.1V	60	80	-	mA
Power Supply Current	I _{SS}	I _p = 80mA, I _B = 80mA	-	230	-	mA
Rise Time	t _r	R _L = 10 ohm	-	100	-	ps
Fall Time	t _f	20%~80%	-	100	-	ps

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Condition	Value			Unit
			Min.	Typ.	Max.	
Supply Voltage	V _{SS}		-5.46	-5.2	-4.94	V
High Level Input Voltage	V _{IH}	V _{ref} = -1.3V	-1.0	-	-	V
Low Level Input Voltage	V _{IL}		-	-	-1.6	V
Peak Current Control Voltage	V _{IP}		V _{SS}	-	V _{SS} +2.1	V
Bias Current Control Voltage	V _{IB}		V _{SS}	-	V _{SS} +2.1	V
Case Temperature	T _C		0	-	+65	°C

Note: The potential at pin 16 (OUT) in operation is recommended in order not be more negative than -1.5V.

BLOCK DIAGRAM



TYPICAL CHARACTERISTICS

Fig. 1 - Bias Current vs.
Bias Current Control Voltage

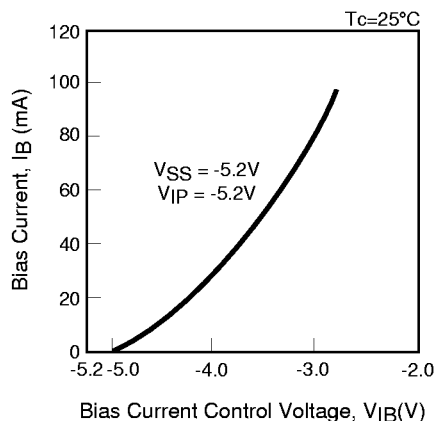


Fig. 2 - Peak Current vs.
Peak Current Control Voltage

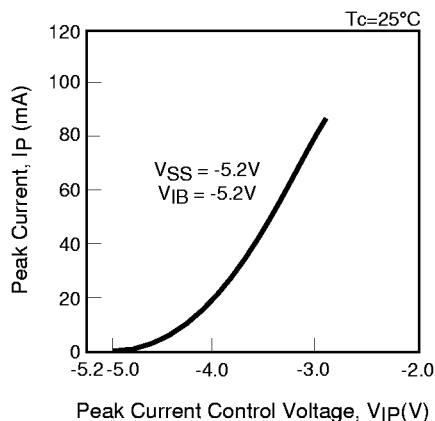
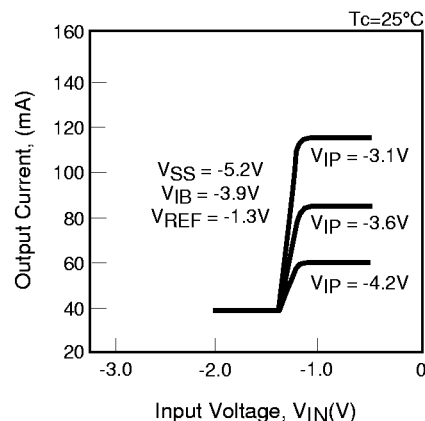
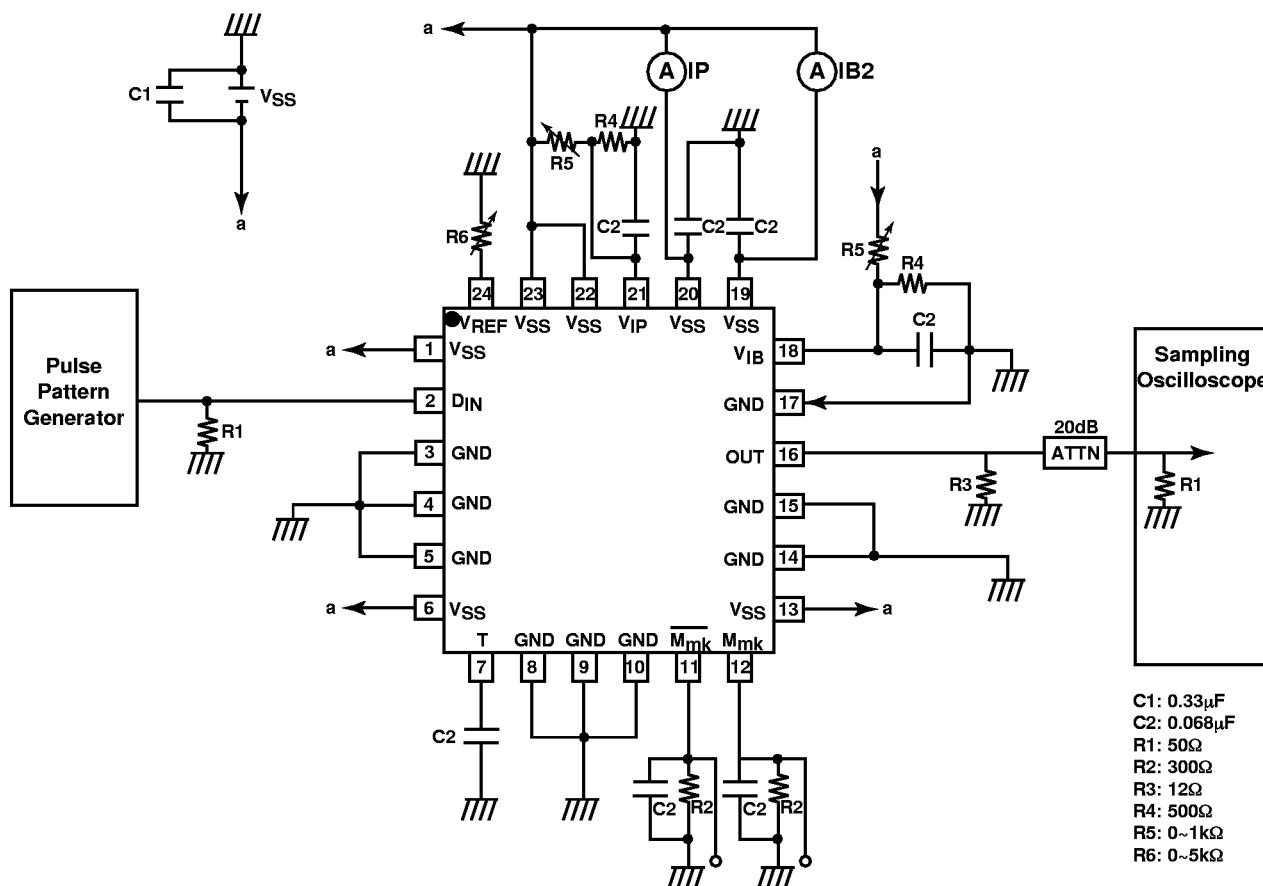


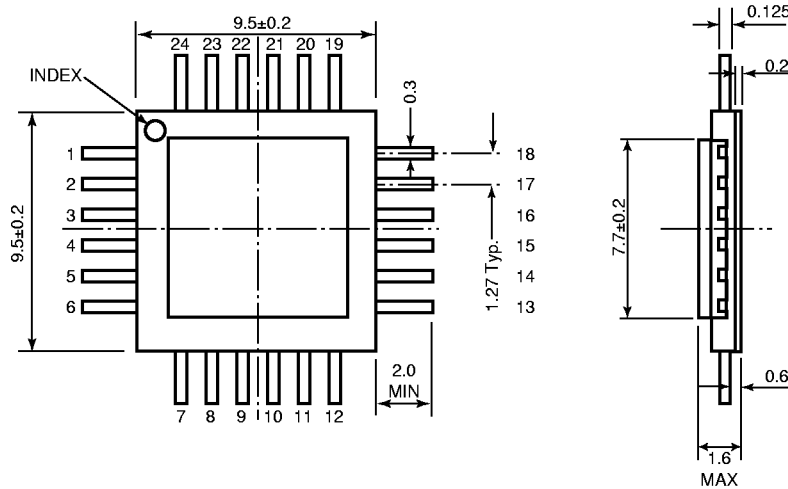
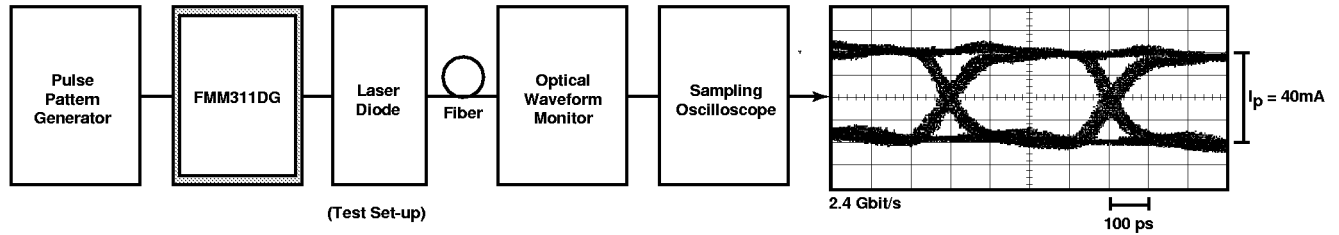
Fig. 3 - Output Current vs.
Input Voltage



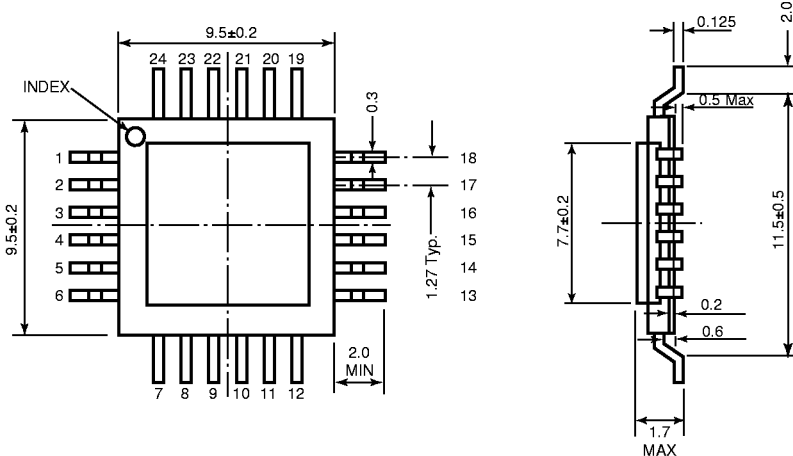
FMM311CG/DG Test Circuit



ELECTRICAL OUTPUT WAVEFORM



UNIT: mm



UNIT: mm

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