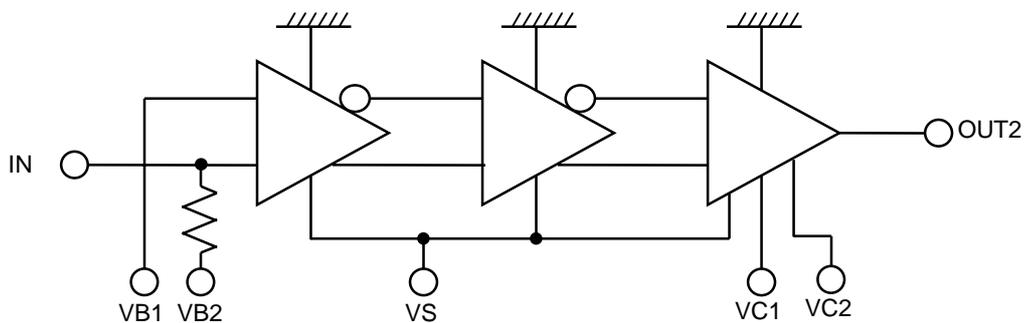


**KGL4125F****Preliminary****10 Gbps EA Modulator Driver IC****FEATURES**

- Controllable Output Voltage Amplitude: 1.3 to 2.2 V<sub>pp</sub>
- X-Point Control Function
- Output Bias Voltage Control Function

**FUNCTION DIAGRAM**

VB1: X-Point Control Voltage  
 VB2: Input Signal Termination  
 VC1: Output Voltage Amplitude Control Voltage  
 VC2: Output Bias Control Voltage

**ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Unit	Specification		
			Min.	Typ.	Max.
X-Point Control Voltage	VB1	V	VS - 4.5 (Min. -6.5)	—	VS + 2.4 (Max. 0.3)
Output Amplitude Control Voltage	VC1	V	-6.5	—	VS + 1.2 (Max. 0.3)
Output Bias Voltage	VC2	V	-6.5	—	VS + 2.4 (Max. 0.3)
Supply Voltage	VS	V	-6.5	—	0.3
Storage Temperature	T <sub>s</sub>	°C	-40	—	125

**RECOMMENDED OPERATION CONDITION**

Parameter	Symbol	Unit	Specification		
			Min.	Typ.	Max.
Supply Voltage	VS	V	-5.5	-5.2	-4.9
X-Point Control Voltage	VB1	V	VS + 0.8	—	VS + 2.2
Output Amplitude Control Voltage	VC1	V	VS	—	VS + 1.0
Output Bias Control Voltage	VC2	V	VS	—	VS + 2.2
Operating Temperature (@Package Base *1)	Ts	°C	-5	—	70
Input Interface	AC Couple ( Require External DC Block )				
Output Interface	DC Couple				

\*1: Package Base is bottom of package.

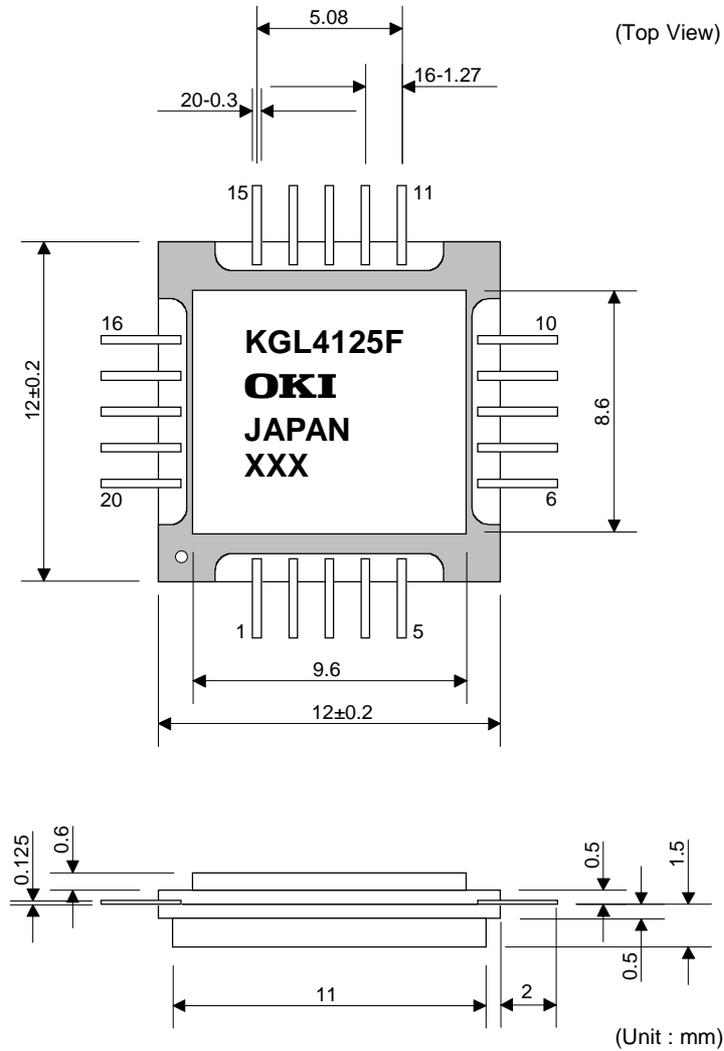
**ELECTRICAL CHARACTERISTICS (VS = -5.2 V, Ta = 25°C)**

Parameter	Symbol	Unit	Specification			Condition
			Min.	Typ.	Max.	
Supply Current	I <sub>SS</sub>	mA	—	225	—	Include 25 mA bias current
Input Amplitude	V <sub>in</sub>	V <sub>PP</sub>	0.5	—	1.0	
Maximum Output Amplitude *1,2	Vo(max)	—	2.2	—	—	
Minimum Output Amplitude *1,2	Vo(min)	V <sub>PP</sub>	—	—	1.3	
Output High Level Offset *1,2	Vo(ofs)	V	-0.8	—	—	
Minimum Output Low Level *1,2	V(LO)	V	—	—	-2.7	
Output High Level *1,2	V(H)	V	-0.5	—	0	@Vo(ofs) = 0
X-Point Control *1,2	Xp	%	50	—	80	
Output Rise/Fall Time *1,2	Tr/Tf	ps	—	—	40	(10 to 90%)
Overshoot (High Level) *1,2	V(OS)	%	—	—	10	
Input Return Loss	S11	dB	15	—	—	100 kHz to 10 GHz
Output Return Loss	S22	dB	10	—	—	100 kHz to 10 GHz @Output Level is High @Vo(ofs) = 0

\*1: Input signal: 10 Gbps 2<sup>23</sup>-1 PRBS NRZ

\*2: Output Load: 50 Ω

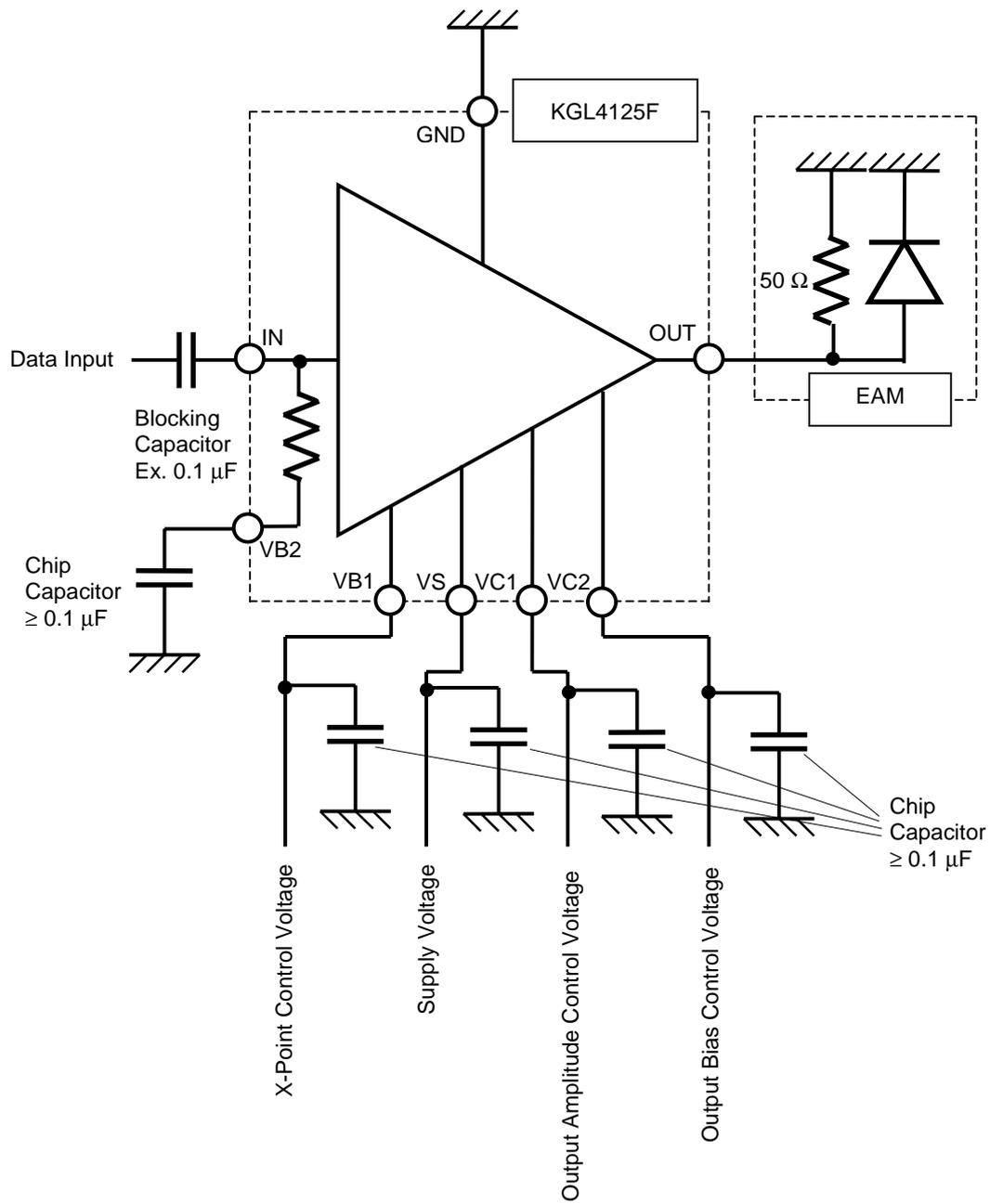
**PACKAGE DIMENSIONS**



**PIN CONNECTION**

No.	Symbol	Note
1	N.C.	No Connection
2	N.C.	No Connection
3	N.C.	No Connection
4	N.C.	No Connection
5	N.C.	No Connection
6	GND	Ground
7	OUT	Signal Output Port
8	GND	Ground
9	N.C.	No Connection
10	GND	Ground
11	VC2	Output Bias Control Voltage Port
12	VC1	Output Amplitude Control Voltage Port
13	VS	Supply Voltage Port
14	VB2	Input Termination Port
15	VB1	X-Point Control Voltage Port
16	GND	Ground
17	N.C.	No Connection
18	GND	Ground
19	IN	Signal Input Terminal
20	GND	Ground

TYPICAL APPLICATION



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2. The outline of action and examples for application circuits described herein have been chosen as an explanation for the standard action and performance of the product. When planning to use the product, please ensure that the external conditions are reflected in the actual circuit, assembly, and program designs.
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