

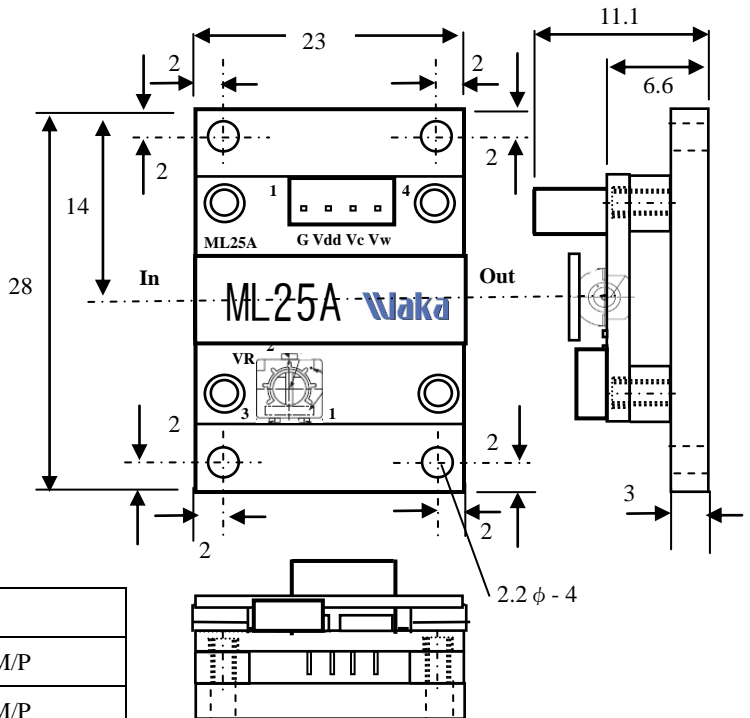
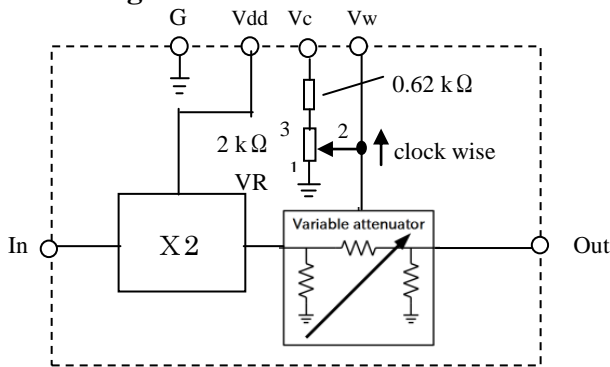
19-28 GHz out x2 freq. Multiplier with ATT

ML25A

1. Application

x2 multiplication and output amplitude adjustment for full-rate clock (20 ~ 25 GHz) of 20 ~ 25 Gb/s optical transmission system, etc

2. Block diagram



3. Terminal description

No	Name	Function	Note
1	In	Signal Input (Internal AC Coupled)	SMPM/P
2	Out	Signal Output (Internal AC Coupled)	SMPM/P
3	G	Ground	Pin header
4	Vdd	Supply Voltage for amplifier (5V)	Pin header
5	Vc	Supply voltage (-3.3 V)	Pin header
6	Vw	Wiper voltage of potentiometer (Apply this voltage at most clock wise VR with Vc left open))	Pin header
7	VR	Screw of variable resistor	Potentiometer

Fig. 1 Module structure

4. Absolute maximum ratings

Terminal	Parameter	Symbol	Unit	Min	Max
Vdd	Supply voltage of amplifier	Vdd	V		6
Vc	Supply voltage of variable attenuator	Vc	V		-4
Vw	Supply voltage of wiper voltage of potentiometer	Vw	V		-4
In	Signal Input	Pin	dBm		+13
	ESD tolerance (HBM)	Vesd	V	-TBD	+TBD

	Storage temperature	Tst	Degree C	-40	80
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5. Characteristics (Ta=25 [°C])

Related terminal	Parameter	Symbol	Unit	Specification			
				Min	Typ	Max	
In	Input frequency	f _{in}	GHz	9.5		14	
	Input power	P _{in}	dBm	+ 2		+7	
	Input return loss	f _{out} < 25 GHz	RL _{inL}	dB		< 10	
		f _{out} > 25 GHz	RL _{inH}	dB		< 5	
Out	Output frequency	f _{out}	GHz	19		28	
	Maximum output power	f _{out} 19 GHz		dB		+ 14	
		f _{out} 28GHz		dB		+ 13	
	Output power attenuation range, See Fig.2		Attr _a	dB		30	
	Output return loss		RL _{out}	dB		>8	
	Fundamental wave rejection		R _{jsub}	dB		>10	
VR, V _w	Wiper voltage range (clockwise VR more negative)	V _w	V	-2.5		0	
V _{dd}	Supply voltage of amplifier	V _{dd}	V	4.75	5	5.25	
V _c	Supply voltage of variable attenuator	V _c	V	-3.5	-3.3	-3.1	
V _{dd}	Supply Current of V _{dd}	I _{dd}	mA		160		
V _c	Supply current of V _c	I _c	mA		1.5		
V _{dd} ,V _c	Power dissipation	P _{dis}	W		0.8		

6. Precaution

This product uses ESD sensitive high-speed devices. Handle it with appropriate precaution described below.

- 1) Connect the ground (G) terminal of ML25A to the highest quality ground line in the room and connect this terminal to the ground terminal of test equipment as well.
- 2) Use ESD protection wrist strap which is connected to ML25A ground.
- 3) Avoid abnormal mechanical shock.

7. Attachment

- 1) 30 cm Jumper cable with pin header socket: 1