

OM5653C-30B**40 Gb/s EA Modulator with Polarization Maintaining Fiber, Built-in Cooler****1. DESCRIPTION**

OM5653C-30B is a C-band electro-absorption (EA) modulator for 40 Gb/s operation with low chirp characteristics in a hermetic sealed package with a V connector.

2. FEATURES

- Low chirp : $\alpha < 0.5$
- 40Gb/s NRZ operation
- Low operating voltage : 3 Vpp
- High modulation bandwidth over 30 GHz
- Built-in thermoelectric cooler (TEC)

3. APPLICATION

- SONET/SDH applications (OC-768)
- VSR/Metro/Long-haul DWDM system applications

4. OPTICAL AND ELECTRICAL CHARACTERISTICS

(at 1550 nm, optical input power 13 dBm, Tsub = 25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	L_{in}	CW, $V_b = 0$ V	—	7.5	9	dB
Polarization Crosstalk	PCT	CW, $V_b = 0$ V	23	—	—	dB
Extinction Ratio	ExR	CW, 0 to -4 V	17	20	—	dB
Bandwidth (-3dB, electrical)	f_c	$V_b = -1.2$ V	30	—	—	GHz
TEC Current	I_{pe}	$\Delta T = 45^\circ\text{C}$	—	1	—	A
Thermistor Resistance	R_{th}	$T_{thm} = 25^\circ\text{C}$	—	10	—	k Ω
Thermistor B Constant	B	—	—	3450	—	K

5. ABSOLUTE MAXIMUM RATING(T_{op(c)} = 25°C, unless otherwise noted)

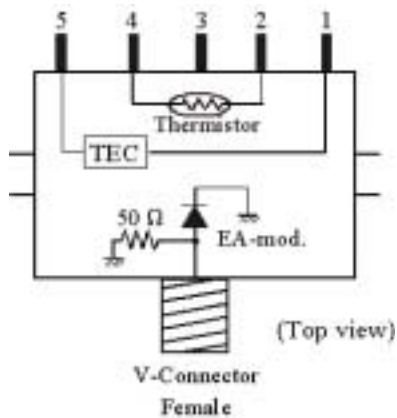
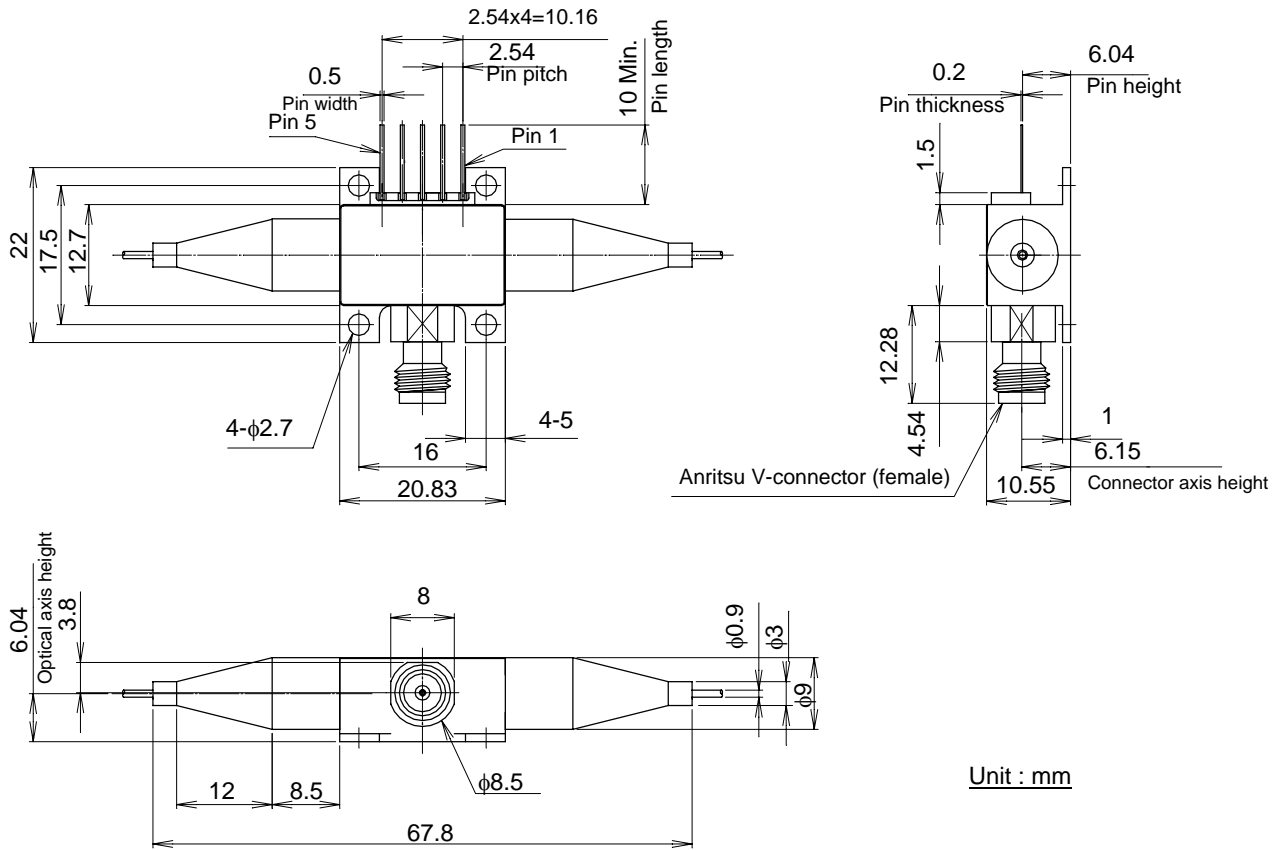
Parameter	Symbol	Ratings	Unit
Operating Case Temperature	T _{op(c)}	0 to +70	°C
Applied Voltage Range	V _{op}	-5 to +1	V
Input Optical Power (peak power)	P _i	+13 ¹⁾	dBm
TEC Voltage	V _{pe}	4	V
TEC Current	I _{pe}	1.8	A

Exceeding these ratings may lead to immediate destruction or permanent deterioration of the device.

1) Applied voltage range: -5 V < V_{op} < +1 V**Note: Operation maximum of Applied Voltage Range: -4 to +1 V****6. CONNECTOR AND FIBER SPECIFICATIONS**

Parameter	Specifications	Unit
Type	PMF	—
Jacket Diameter	0.9	mm
Length	1 (Min.)	m
Connector	SC/SPC	—

7. OUTLINE DRAWING (All dimensions in millimeters)



PIN	FUNCTION
1	TEC CATHODE
2	THERMISTOR
3	NC
4	THERMISTOR
5	TEC ANODE

SAFETY INFORMATION ON THIS PRODUCT

<p>Caution</p> <p>GaAs Product</p>	<p>The product contains gallium arsenide, GaAs. GaAs vapor and powder are hazardous to human health if inhaled, ingested or swallowed.</p> <ul style="list-style-type: none"> Do not destroy or burn the product. Do not crush or chemically dissolve the product. Do not put the product in the mouth. <p>Observe related laws and company regulations when discarding this product. The product should be excluded from general industrial waste or household garbage.</p>
<p>Caution</p> <p>Optical Fiber</p>	<p>A glass-fiber is attached on the product. Handle with care. When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.</p>

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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.
3. When designing your product, please use our product below the specified maximum ratings and within the specified operating ranges including, but not limited to, operating voltage, power dissipation, and operating temperature.
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Sales Support**JAPAN/ASIA Oki Electric Industry Co., Ltd.**

550-1, Higashiasakawa-cho, Hachioji-shi, Tokyo 183-8550
 Phone: +81-426-62-6646
 INTERNET: <http://www.oki.com>

N.AMERICA Oki Optical Components**Eastern Region**

2000 Bishops Gate Blvd, Mount Laurel, NJ 08054-4620
 Phone: +1-856-222-8110
 Ottawa, Ontario, Canada
 Phone: +1-613-826-3321 Fax: +1-613-826-3181

Western Region

785 North Mary Avenue, Sunnyvale, CA 94086
 Phone: +1-408-737-6379 Fax: +1-408-737-6579
 INTERNET: www.okioptical.com

EUROPE Oki Electric Europe GmbH

D-41460 Neuss, Germany
 Phone: +49-2131-15960 Fax: +49-2131-103539
 INTERNET: <http://www.oki-europe.de>