SOA pulse modulation module

—HC-PLM Series

Product introduction

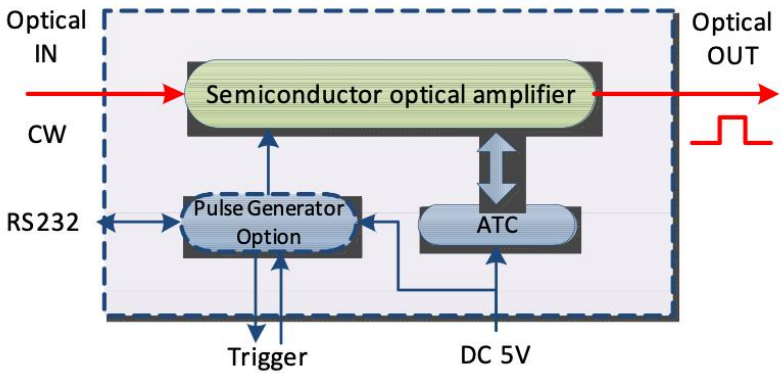
HC-PLM series SOA pulse modulation module uses a semiconductor optical amplifier (SOA) as a core converter device to achieve ultra-narrow pulse width optical pulse generation. Its characteristics of fast rise time, high pulse extinction ratio, good stability and convenient use make it an ideal choice to replace electro-optic and acousto-optic modulators in various optical fiber sensing systems. But also can be apply to that aspects of quantum communication system, semiconductor test, homodyne coherent detection and the like.

Product features

- Operating wavelength C-band
- Optional integrated pulse source
- Software-adjustable pulse width
  - Rise/fall time < 2 ns
  - Adjustment range 5 ns ~ 500 ns
  - PRF 1Hz-1MHz
- Peak output power 10 mW
- High extinction ratio > 50dB
- Temperature control circuit with TEC
- Optional internal and external trigger
- DC 5V power supply
- Module encapsulation

Scope of application

- Optical fiber sensing system
- Semiconductor testing
- Microwave photonics



Schematic diagram

Technical parameters

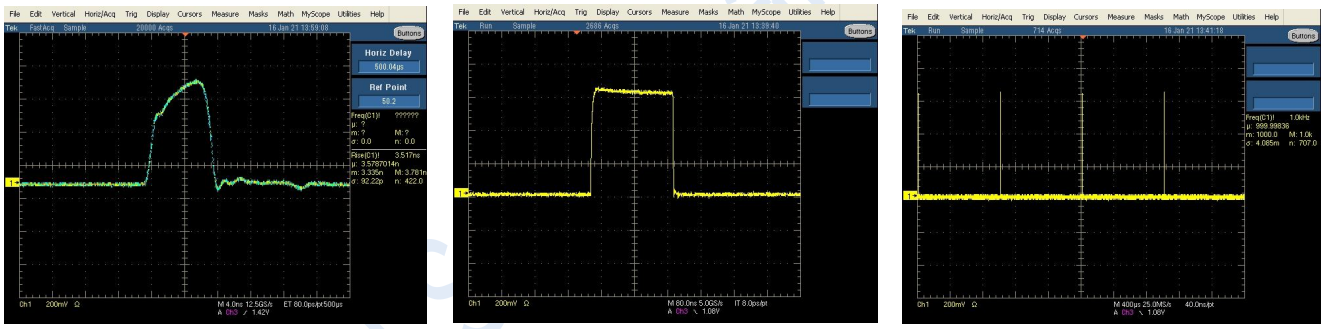
Parameter		Symbol	Unit	Minimum value	Typical value	Maximum value
Operating wavelength		I	nm	1510		1610
Peak power		Pp	mW		10	
Optical power stability		DP	dB			0.1
Pulse extinction ratio		ER	dB	50		
Rise/Fall Time		Tr/Tf	ns	2	3	-
Repeat frequency		F	Hz	1		1M
Modulated signal format			TTL/LVTTL			
Input and output optical fiber			SMF-28e single mode fiber or polarization maintaining fiber			
Fiber optic connector			FC/APC			
Pulse signal source (optional) parameter						
Pulse width *		Tw	ns	5		200
			ns	5		500
Pulse width modulation step	5-200ns		ns		1	
	5-500ns		ns		2.5	
Repeat frequency		F	Hz			1M
External trigger input	Signal format		LVTTL(3.3V)			
	Trigger mode		Rising edge trigger			
	Coupling		DC coupling			
	Resistance		50W			
Sync signal output			LVTTL(3.3V)			
Electrical signal connector			SMA			
Operating voltage			DC 5V@200mA			
Communication			RS232			
Power supply connector			2 P or 4 P aerial insertion			
Size			70x35x13mm			
		With pulse source	95x70x22mm			

* For other pulse width requirements, please contact our sales staff.

Limit parameter

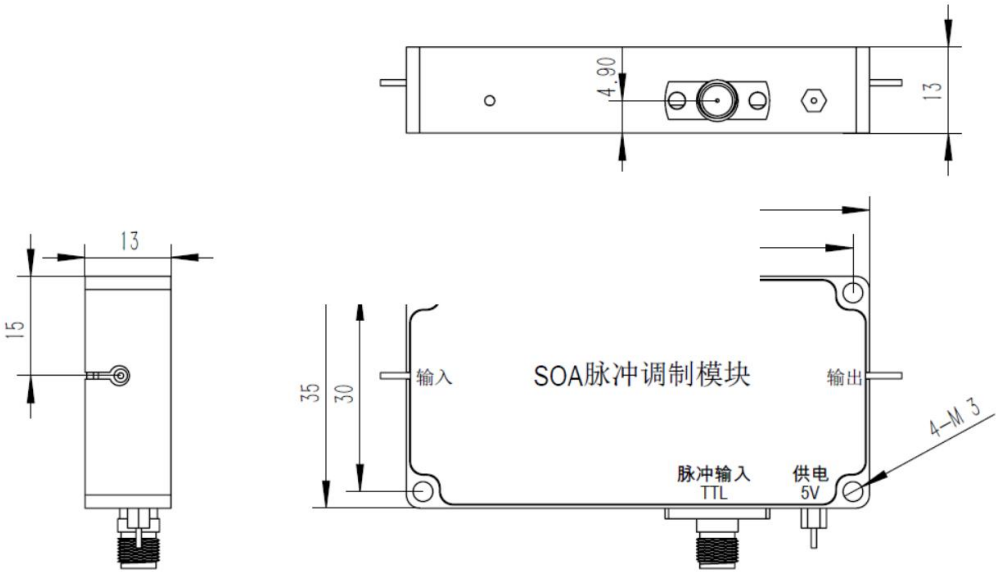
Parameter		Symbol	Unit	Minimum value	Typical value	Maximum value
Operating temperature		Top	ºC	-10		60
Storage temperature		Tst	ºC	-40		85
Humidity		RH	%	5		90
Input optical power		Pi	dBm	-5	7	10
External pulse and trigger input	High level	U_H	V	2		2.5
	Low level	U_L	V	0		0.6

Test curve

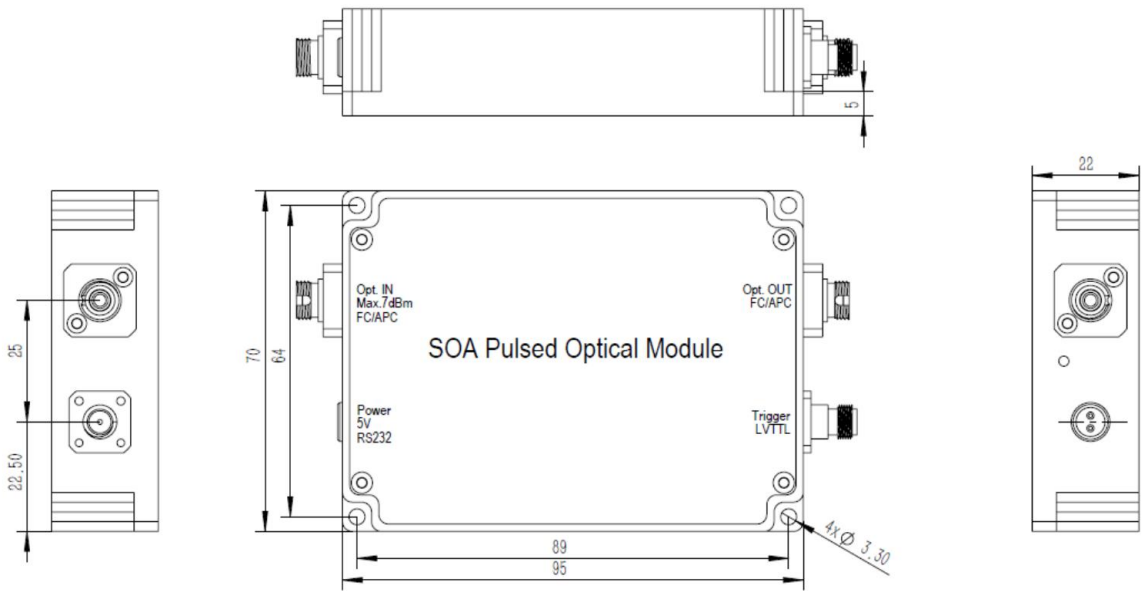


Pulse width test chart (pulse width 10 ns, 200 ns, PRF 1 KHz)

Mechanical Dimensions (in mm)



Size 1 (without pulse source)



Size 2 (integrated pulse source)

Ordering Information HC-PLM-15-XX

XX = pulse source: NC-unpowered pulse source, PG-integrated pulse source