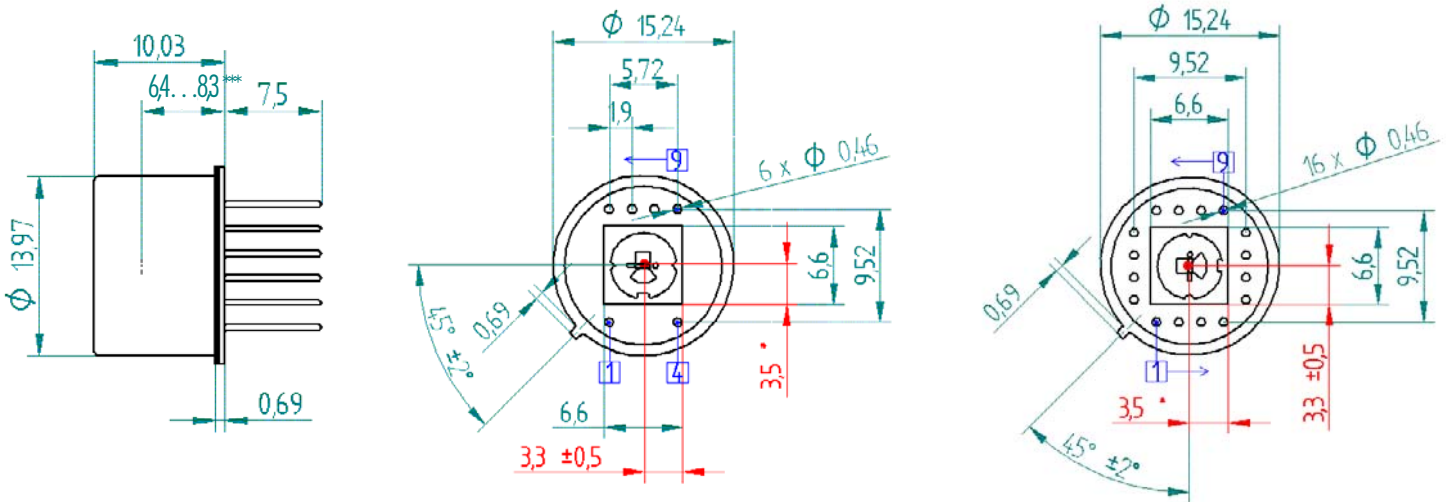


QF-Series QF-XXXX-GMP-MTE FP QC Laser



GENERAL SPECIFICATIONS



TO8 package with 1 stage Peltier cooler

- pulsed lasers
- room temperature operation
- emission 5.5 – 12 μm
- wedge shaped windows

Pin layout (6-pin)

Pin-number	function
1	TEC (-)
4	TEC (+)
9	thermistor
10	thermistor
11	laser anode
12	laser cathode

Pin layout (16-pin)

Pin-number	function	Pin-number	function
1	TEC (-)	9	thermistor
2	not used	10	thermistor
3	not used	11	not used
4	TEC (+)	12	not used
5	laser anode	13	laser cathode
6	laser anode	14	laser cathode
7	laser anode	15	laser cathode
8	laser anode	16	laser cathode

ELECTRO-OPTIC CHARACTERISTICS

Parameter	Symbol	Ratings			Units
		Min	Typ	Max	
Rep. Frequency *	f_{rep}	0.01	10	200	kHz
Pulse width *	t_p	23	50	150	ns
Threshold current	I_{th}		2	4	A
Operating current **	I_{op}		4	6	A
Emission tolerance **	$\tilde{\nu}$	$\tilde{\nu}-12$	$\tilde{\nu}$	$\tilde{\nu} + 12$	cm^{-1}
Peak output power	P_{pulse}	200	400	800	mW
Beam divergence	θ		40 parallel 60 perpendicular		$^{\circ}$
Current tuning coefficient	$d\tilde{\nu}/dI$ ($d\lambda/dI$)		0.1 (1.3)		cm^{-1}/A (nm/A)
Temperature tuning coefficient	$d\tilde{\nu}/dT$ ($d\lambda/dT$)		0.07 (1)		cm^{-1}/K (nm/K)



BASIC PROPERTIES

Parameter	Symbol	Rating	Units
Window material		CaF ₂ / BaF ₂	
Window thickness	d	1	mm
Operating temperature *	T _{op}	-10 to 50	°C
Storage temperature	T _{stg}	-40 to +80	°C

* Tested conditions

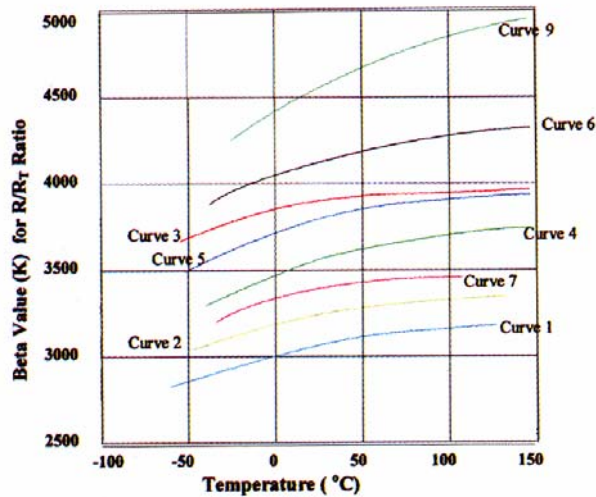
** Operating point is documented on test data sheet

*** Actual value is documented on test data sheet

These specifications are subject to change without notice.

PELTIER AND THERMISTOR SPECIFICATIONS

Beta Value vs Temperature for BetaTHERM Thermistors Materials (Curves)



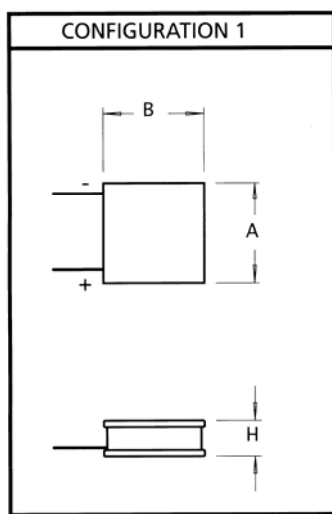
Resistance-Temperature and Deviation Tolerance Tables

Temperature		Material (Curve) # 3			
deg F.	deg C.	Resistance kΩ	Alpha (-%/°C)	Max. Deviation (%) from Curve Nom.	
				Beta CHIP	Beta CURVE
41	5	25.395			
50	10	19.903	- 4.80	1.8	0.96
59	15	15.714			
68	20	12.494	- 4.52	1.3	0.90
77	25	10.000	- 4.39	1.0	0.88
86	30	8.0560	- 4.26	1.3	0.85
95	35	6.5301			
104	40	5.3249	- 4.03	1.7	0.81
113	45	4.3669			
122	50	3.6010	- 3.80	2.2	0.76

1-STAGE SOLID-STATE HEAT PUMPS

Model	I Max Amps	Q Max Watts	V Max Volts	ΔT Max Dry N2 $T_H = 27^\circ C$	A mm	B mm	H mm	Configuration
1002	1.8	2.1	2.0	66	6.6	6.6	2.2	1

SSHP CONFIGURATION DIAGRAM



Class 1 laser, specified on DIN EN 60825-1:2003-11. Time base: 100 s.
Invisible laser radiation. The laser is not build for eye or skin exposure. Avoid intended or long-time eye or skin exposure to direct or scattered radiation. Modifying the pulse regime could cause higher laser classification.
average power ≤ 10 mW



Class 3R laser, specified on DIN EN 60825-1:2003-11. Time base: 100 s.
Invisible laser radiation. Avoid eye or skin exposure to direct or scattered radiation. Modifying the pulse regime could cause higher laser classification.
average power > 10 mW

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