SPECDILAS V-Series

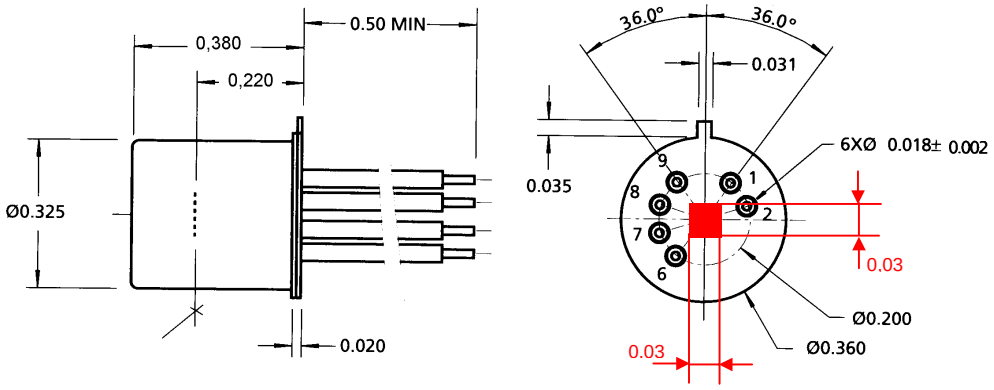
SPECDILAS V-850-GMP-MTE

General Specifications

- no mode hopping
- singlemode (20 dB suppression)
- circular beam profile
- low beam divergence
- VCSEL technology
- AR-coated windows

Applications:

- Reference laser
- HeNe laser replacement
- Interferometers
- Distance measurement



TO5 package with 1 stage Peltier cooler

Pin-out:

1: Laser ground	9: Cooler +	7: Thermistor 10 KOhm
2: Laser anode (CG)	8: Cooler –	6 : Thermistor 10 KOhm

Electro-optical characteristics

(T = 25 °C)

Parameter	Symbol	Conditions	Ratings			Units
			Min	Typ	Max	
Threshold current	I_{th}		1	2	4	mA
Threshold voltage	V_{th}		1,6	2.2	2.8	V
Operating current	I_{op}	I_{op} = 1.5 x I_{th}		3		mA
Operating voltage	V_{op}			2.5		V
Emission wavelength*	λ	I_{op} = 1.5 x I_{th}	840	850	860	nm
Optical output power (SM)	P_{sm}	SMSR >20 dB @ 1.5 x It_{h}	0.3	0.5		mW
Slope efficiency	η	I_{op} = 1.5 x I_{th}		0.2		mW/mA
Beam divergence	θ	FWHM		12		°
Bandwidth	f_{3dB}			100		MHz
Linewidth	Δν	P_O = 0.3 mW		30		MHz
Relative intensity noise	RIN	I_{op} = 4 mA, f = 5 kHz		-110		dB/Hz
Current tuning coefficient **	dλ/dI			0.4		nm/mA
Temperature tuning coefficient **	dλ/dT			0.06		nm/K
Window thickness	d			150		µm
AR coating reflectivity	R	@ 850 nm		< 0.5		%

SM = single mode; SMSR = side mode suppression ratio; FWHM = full-width half-maximum ***NOTE:*** *No polarization flip up to 2 x Ith*

** Tighter wavelength specifications available on request. **Tighter tuning specifications available on request.*

850 nm and 950 nm versions also available.

Absolute maximum ratings

(T = 25 °C)

Parameter	Symbol	Rating	Units
Optical output power	P_{max}	3	mW
Peak forward current	I_{max}	10	mA
Electrical power dissipation	P_{tot}	40	mW
Reverse voltage	V_R	5	V
Operating temperature	T_{op}	0 to + 55	°C
Storage temperature	T_{stg}	- 40 to + 80	°C

These specifications are subject to change without notice.

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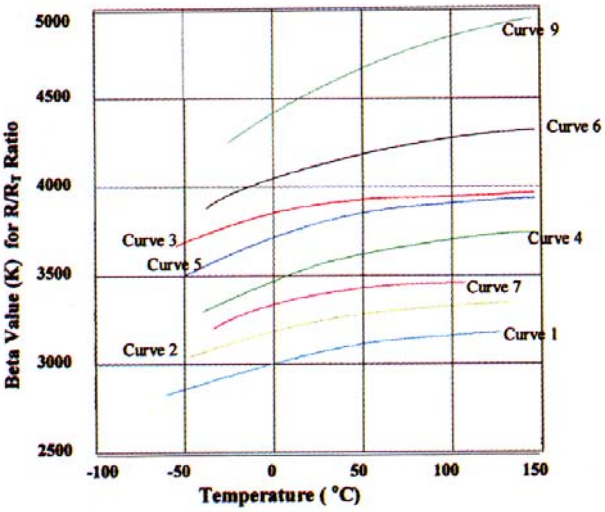
Peltier and thermistor specifications

Beta Value vs Temperature for BetaTHERM Thermistors Materials (Curves)



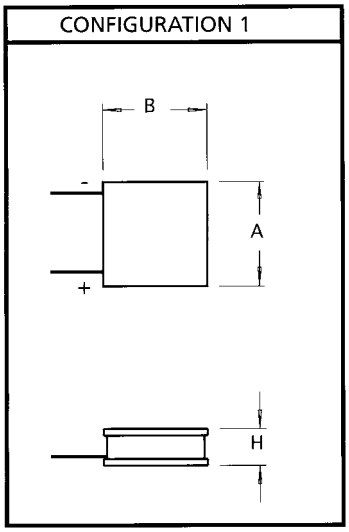
Resistance - Temperature and Deviation Tolerance Tables

		Material (Curve) # 3			
Temperature		Resistance	Alpha	Max. Deviation (%) from Curve Nom.	
deg F.	deg C.	kΩ	(-%/°C)	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 °C	A mm	B mm	H mm	Configuration
1009	1.9	0.9	0.8	68	4.0	4.0	2.9	1

SSHP Configuration Diagram



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