

# Optically Immersed 4.7 μm LED in heatsink optimized housing

LED47 Sr/Su/Cy

# TE cooled Optically Immersed 4.7 μm LED

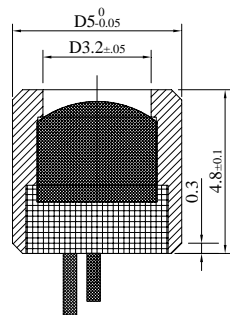
LED47TO8TEC

Peak wavelength	μm	<b>4.7±0.1</b>		@22 °C
		LED47Sr/Su/Cy	LED47TO8TEC	
Pulse power	μW	Drive current 1 A, 0.02 duty cycle	<b>15÷18</b>	<b>13÷15</b>
Quasi-CW power	μW	Drive current 0.3 A, 0.5 duty cycle	<b>6.5÷8</b>	<b>5.5÷7</b>
CW power	μW	Drive current 0.2 A	<b>4.5÷5.5</b>	<b>3.8÷4.7</b>
Cut-off frequency	MHz	50 <sup>1</sup>		

Code	Emission size, mm	Weight, g	Optical components	Far-field pattern FWHM, deg.	Optical axis deviation, deg.	Optical power deviation in lot, %	Operation conditions, °C	Lifetime, hrs
LED47 Sr/Su/Cy	∅ 3.2	~0.4	Si lens	~15	≤5	±25	-60÷+85	>100 000
LED47 TO8TEC		~10	Si lens and output sapphire window D=6mm					

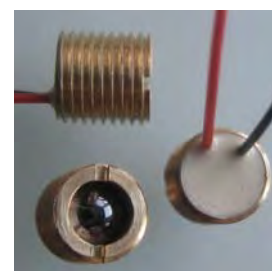
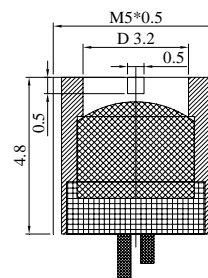
Product view

LED47Cy

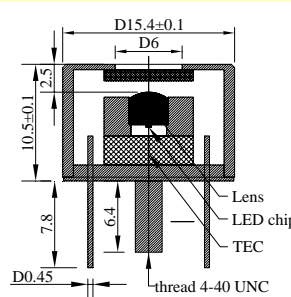
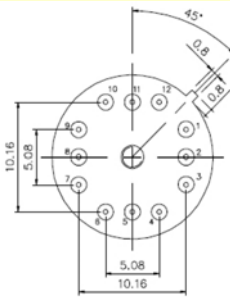
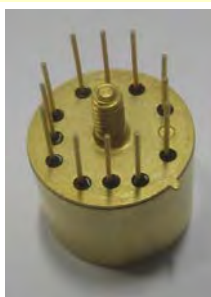


Pin assignment: red wire or long wire and red point on house - positive

LED47Sr



Pin assignment: red wire or long wire and red point on house - positive



Pin assignment LED47TO8TEC12

- 1 TEC negative;
- 3 TEC positive;
- 4 LED negative;
- 6 LED positive;
- 7, 9 thermosensor;
- 11 ⊥ (House)

Features

- Original growth of narrow gap semiconductor alloys onto n<sup>+</sup>-InAs substrate;
- Flip-chip design of LEDs;
- Optical coupling through the use of chalcogenide glasses and Si lenses with antireflection coating
- 3-fold increased LED output power;
- Beam collimation;
- Small on-off time (tenths of ns);
- Low power consumption (≤0.1 W)

Emission beam divergence is small and thus we recommend adjusting LED position regarding to the detector system before final evaluation/use of the devices. We recommend if possible using low duty cycle mode of operation with  $I < 0.5 \times I_{max}$  so that higher efficiency and long term stability of a LED are achieved. Data are valid for LED attached to a heatsink and thermostabilized at 22°C. Heatsink is essential for TEC operation!

Notes

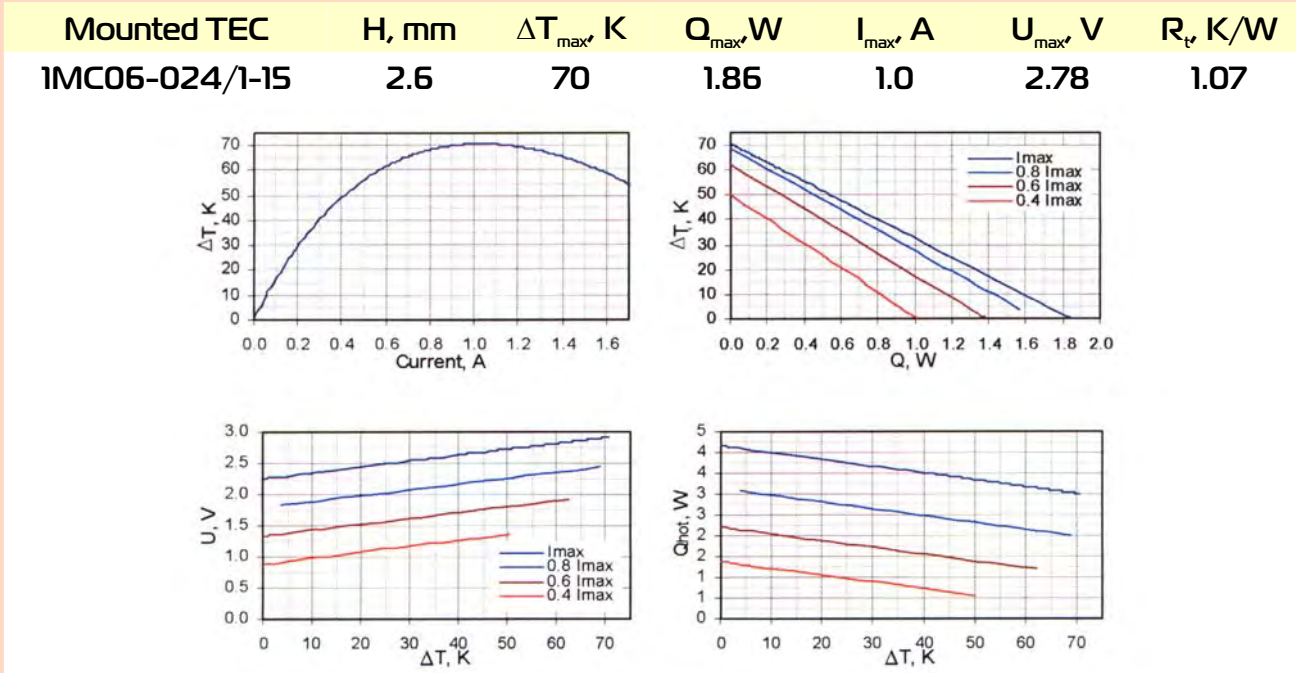
<sup>1</sup> - according to estimation

Product specifications are subject to change without prior notice due to improvements or other reasons. Updated 07.12.14



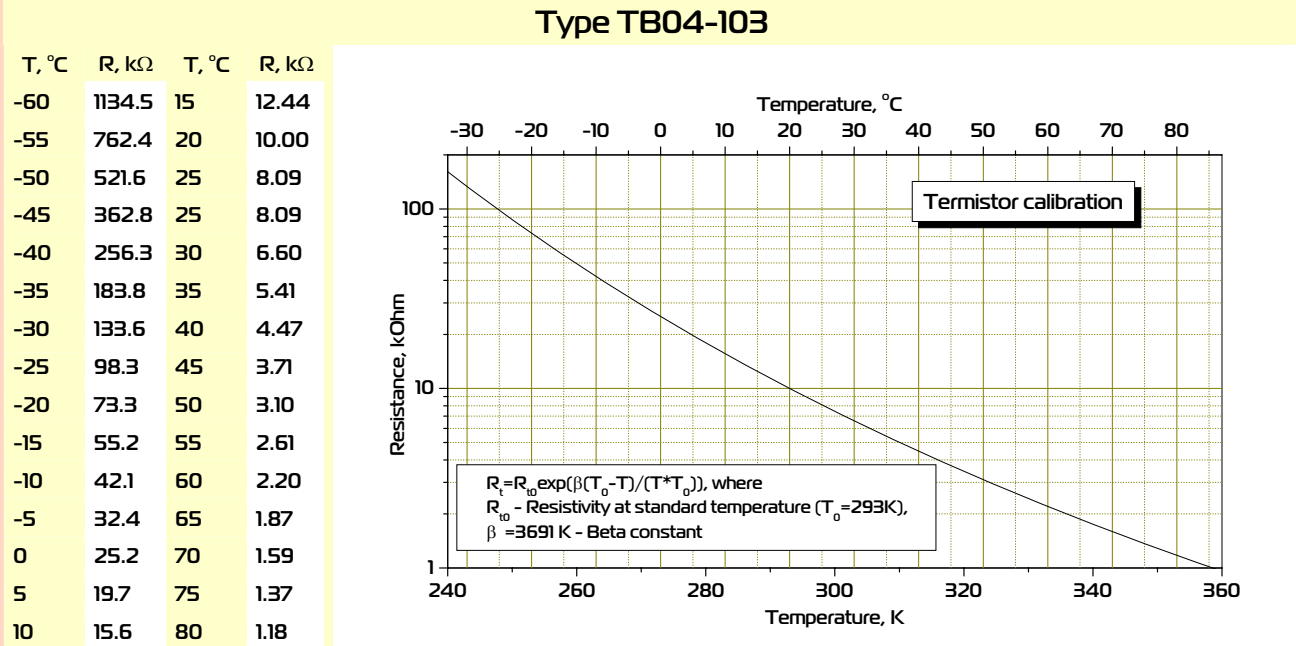


Thermoelectric cooling module datasheet



Data for  $T_{hot}=300$  K, from [www.tec-microsystems.com](http://www.tec-microsystems.com); [www.rmtitd.com](http://www.rmtitd.com)

Thermistor specification



Possible TEC heatsink view

