

eTEC™ HV56 Thin-Film Thermoelectric Cooler

Data Sheet

Description

The Nextreme eTEC HV Thermoelectric Cooler family introduces a new class of RoHS compliant thermoelectric coolers to address applications with high heat flux requirements. The eTEC HV56 cooler can produce 4.8 watts or 75 W/cm² of cooling at 25°C. At 85°C, these values increase to 6.0 watts and 95 W/cm², respectively. The size, input power requirements, heat pumping capability, and speed of this device make it ideal for thermal management of sensors, photonics, and thermal cycling applications

eTEC HV56



Features

- 6 watts maximum cooling @ 85°C
- 75 W/cm² heat pumping capability
- Small 3.12mm X 3.31mm footprint
- Extremely thin 0.62mm profile
- <2ms response time
- RoHS compliant devices

Part Number Options

Part Number	Description
HV2004	Au Wire Bondable pads
HV2005	Soldered 32 AWG Ni Plated Cu wires

Performance Values (Typical)

Hot Side Temperature	25°C	85°C
Q _{max} (Watts)	4.8	6.0
ΔT _{max} (°C)	50	60
I _{max} (Amps)	1.0	0.9
V _{max} (Volts)	8.8	10.8
Q _{max} /Area (W/cm ²)	75	95
R _{electrical} (Ω)	8.4	9.2
R _{thermal} (K/W)	13	16

Assembly Conditions

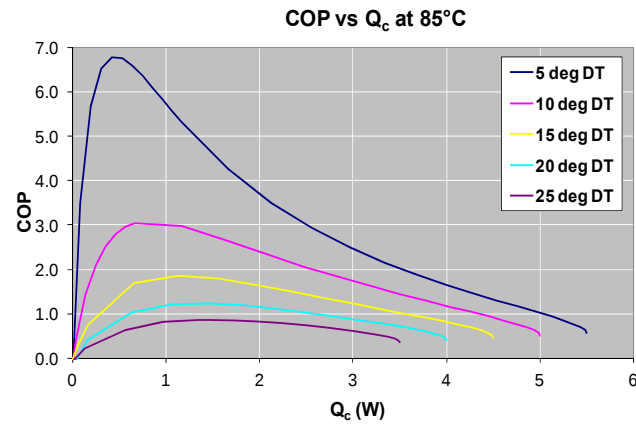
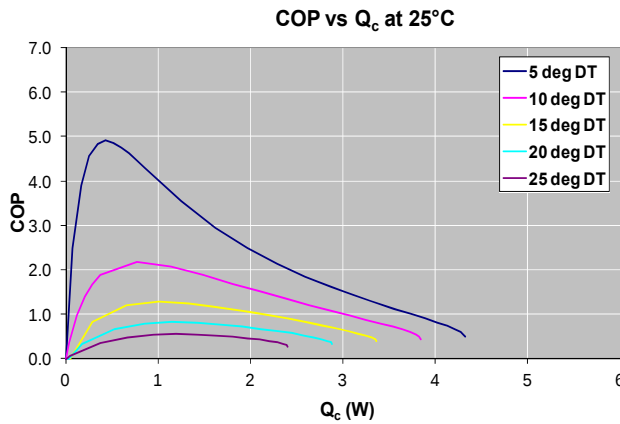
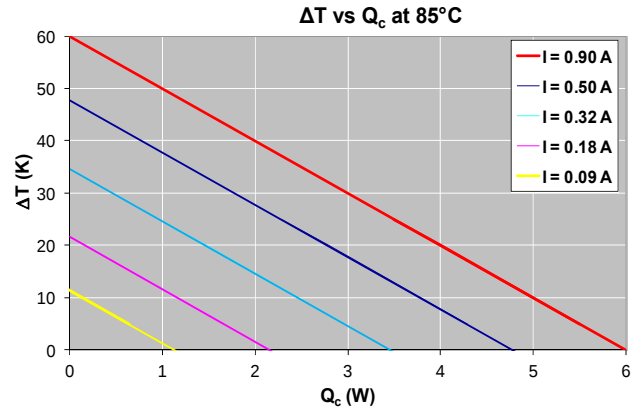
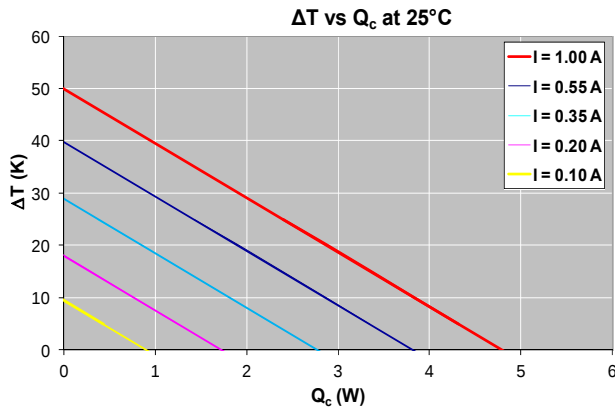
Time above 290°C	60 sec
Peak Assembly Temperature	325°C

Operating Conditions

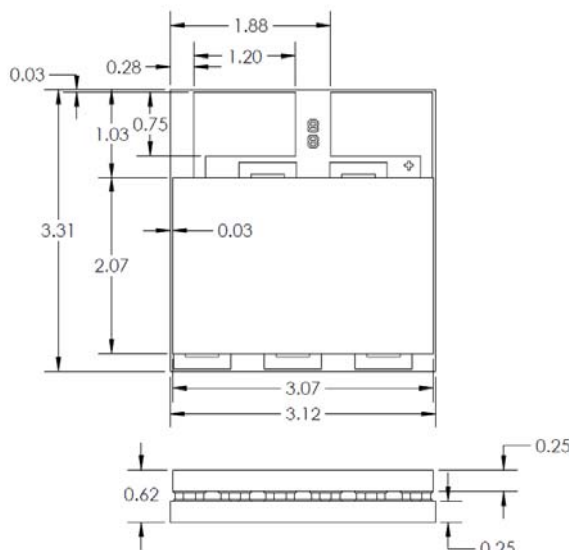
Maximum Operating Temp.	150°C
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Product Dimensions (mm)



General Information

- Au on the top and back surfaces
- Au wire bondable pads
- Positive terminal marked as shown

Definitions

- Q_{max} The maximum amount of heat that the eTEC device can pump when operating at I_{max}
- ΔT_{max} The maximum temperature difference the eTEC device can produce
- I_{max} The current that produces ΔT_{max}
- V_{max} The voltage that produces ΔT_{max}
- COP Coefficient of Performance (Heat Pumped / Input Power)
- $R_{thermal}$ Thermal resistance
- $R_{electrical}$ Electrical resistance

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Nextreme:

[NCA-1004850-0304A-A](#) [NCA-1004850-0304A-W](#)