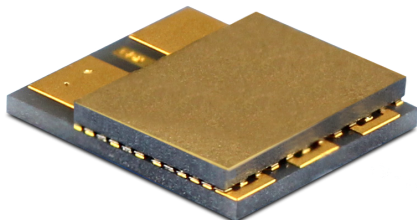


eTEC Series HV56,72,F2,0203,GG

Thin Film Thermoelectric Module



The eTEC Series is a thin film thermoelectric module (TEM) with high heat flux density. Due to its size, input power requirements and heat pumping capacity this device is suited for use in applications to stabilize the temperature of sensitive optical components in telecom and photonics industries.

The eTEC HV56 can produce 6.5 Watts of cooling capacity at 25°C ambient in a 13 mm² footprint. Assembled with thin film semiconductor material and thermally conductive Aluminum Nitride ceramics, the eTEC Series is designed for lower current applications with tight geometric space constraints. Custom designs are available to accommodate metallization, pretin solder and ceramic patterns, however MOQ applies.

FEATURES

- Micro Footprint
- High Heat Pumping Density
- Precise Temperature Control
- Reliable Solid State Operation
- <2 ms Response Time
- RoHS Compliant

APPLICATIONS

- Laser Diodes
- Photodiodes
- Infrared (IR) Sensors
- Pump Lasers
- Crystal Oscillators
- Optical Transceivers

PERFORMANCE SPECIFICATIONS

Hot Side Temperature (°C)	25°C	50°C
Qmax (Watts)	6.5	6.8
Delta Tmax (°C)	47	50
I _{max} (Amps)	1.1	1.1
V _{max} (Volts)	9.6	10.4
Qmax / area (W/cm ²)	78	81
Electrical Resistance (Ohms)	7.0	8.0
Thermal Resistance (K/W)	10	10

PACKAGE ASSEMBLY CONDITIONS

Max Time Exposure > 290°C	60 sec
Peak Assembly Temperature	325°C

TEMPERATURE CONDITIONS

Max Operating Temperature	150°C
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OPERATING CONDITIONS

Max rate of change of current	1.75 Amps/sec
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Europe: +46.31.420530

Asia: +86.755.2714.1166

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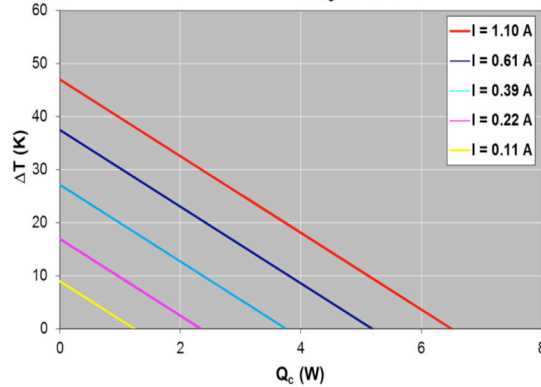
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eTEC Series HV56,72,F2,0203,GG

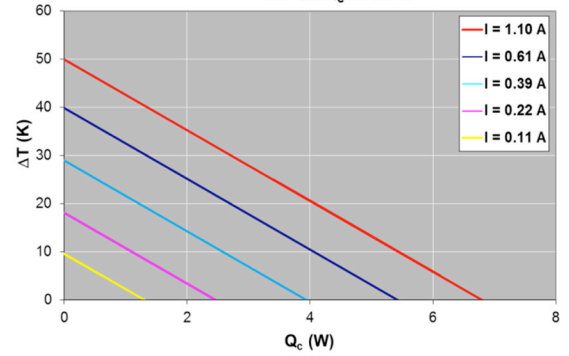
Thin Film Thermoelectric Module

PERFORMANCE CURVES

ΔT vs Q_c at 25°C

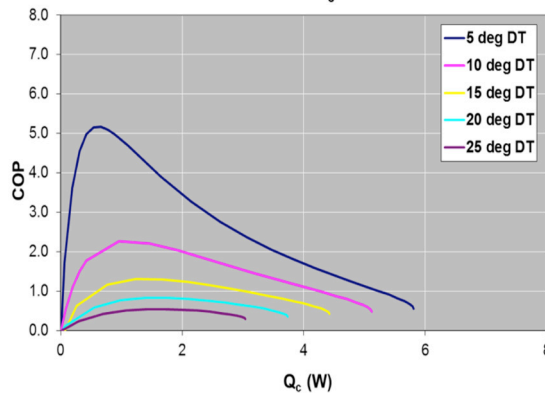


ΔT vs Q_c at 50°C

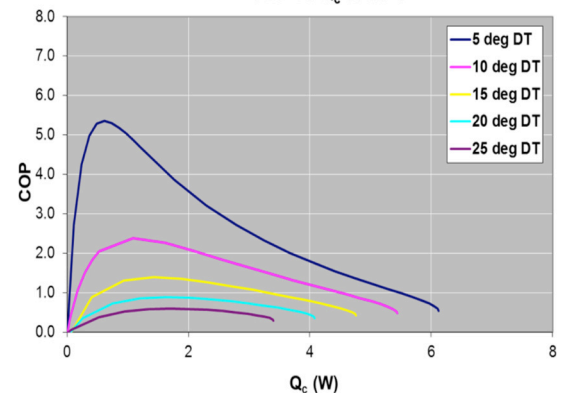


COEFFICIENT OF PERFORMANCE

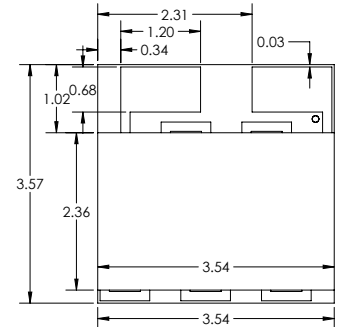
COP vs Q_c at 25°C



COP vs Q_c at 50°C



ISOMETRIC DRAWING



Standard

Au metallization on exterior ceramic substrate surfaces

Au wire bondable pads on hot side ceramic for lead attachment

OPERATING TIPS

- Maintain good surface contact on heat dissipation mechanism prior to operation
- Do not exceed V_{max} or I_{max} values to maintain peak performance

THR-DS-eTEC-HV56 1113

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