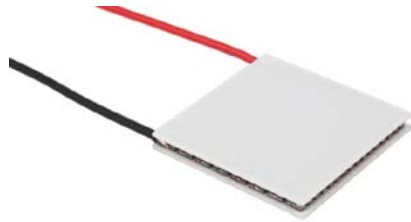


# ZT Series ZT4-12-F1-4040

## Thermoelectric Module



The ZT Series is a high performance thermoelectric module (TEM). The module is assembled with premium Bismuth Telluride semiconductor material that achieves a higher temperature differential than standard single stage TEMs.

This product line is available in multiple configurations and is ideal for applications that require to reach cold temperatures. Assembled with top grade Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics, the ZT Series is designed for higher current and larger heat-pumping applications.

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### FEATURES

- High temperature differential
- Precise temperature control
- Reliable solid state operation
- No sound or vibration
- DC operation
- RoHS compliant

### APPLICATIONS

- Analytical instrumentation
- Clinical diagnostics
- Photonics laser systems
- Electronic enclosure cooling
- Food and beverage cooling
- Chillers (liquid cooling)

### PERFORMANCE SPECIFICATIONS

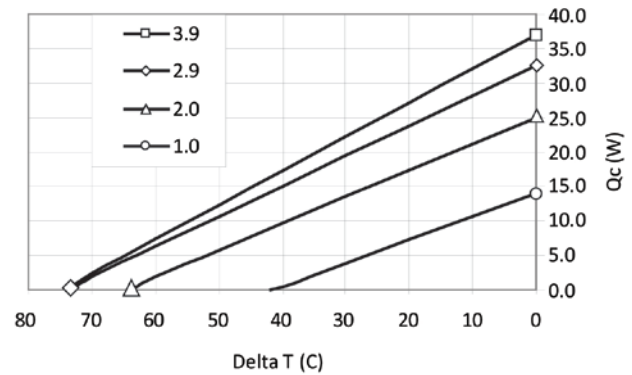
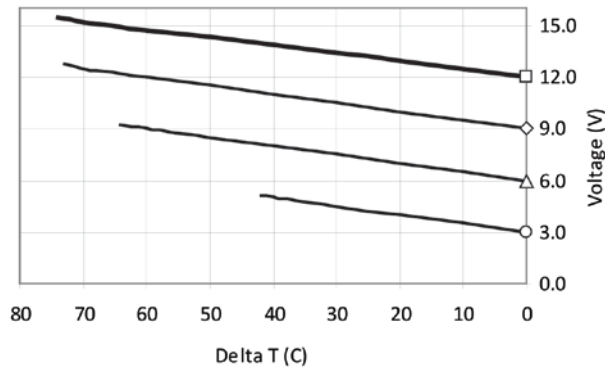
Hot Side Temperature (°C)	25
Qmax (Watts)	37.0
Delta Tmax (°C)	74
Imax (Amps)	3.9
Vmax (Volts)	15.4
Module Resistance (ohms)	3.40

SUFFIX	THICKNESS	FLATNESS & PARALLELISM	HOT FACE	COLD FACE	LEAD LENGTH
TA	0.189"± 0.001"	0.001" / 0.001"	Lapped	Lapped	8.0"
TB	0.189"± 0.0005"	0.0005" / 0.0005"	Lapped	Lapped	8.0"

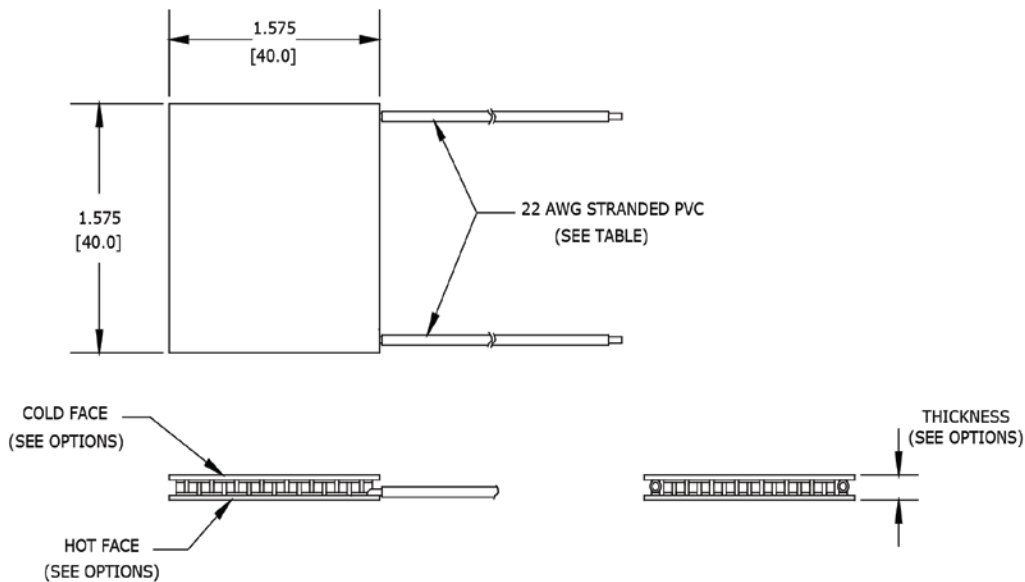
### SEALING OPTIONS

SUFFIX	SEALANT	COLOR	TEMP RANGE	DESCRIPTION
RT	RTV	White	-60 to 204 °C	Non-corrosive, silicone adhesive sealant
EP	Epoxy	Black	-55 to 150 °C	Low density syntactic foam epoxy encapsulant

**PERFORMANCE CURVES**



**MECHANICAL DRAWING**



Ceramic Material 96% Alumina Ceramics  
 Solder Construction: 138°C BiSn

**OPERATING TIPS**

- Max operating temperature: 80°C
- Do not exceed I<sub>max</sub> or V<sub>max</sub> when operating module
- Reference assembly guidelines for recommended installation

LAIRD-ETS-ZT4-12-F1-4040-DATA-SHEET-101416

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