



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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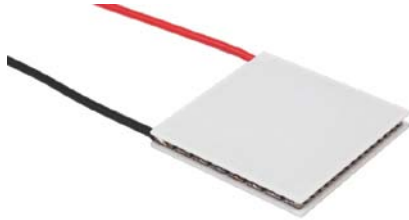
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ZT Series ZT4-12-F1-4040

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

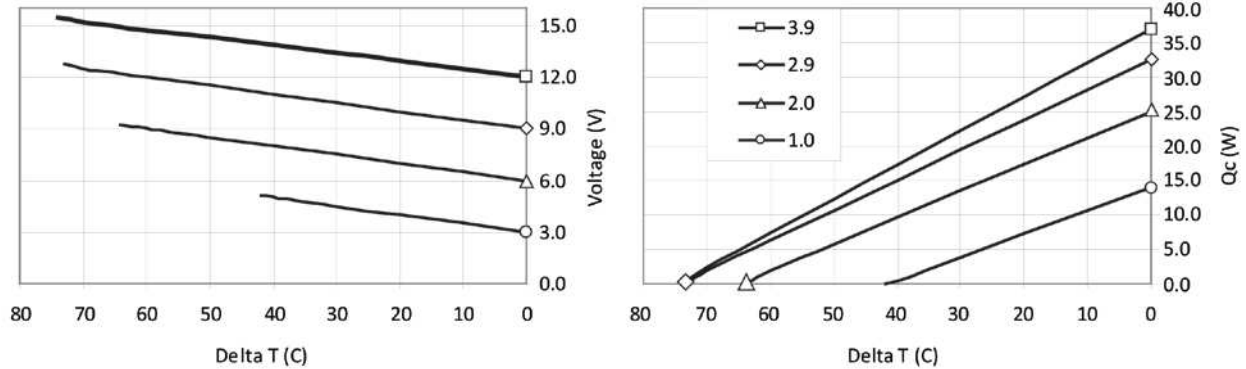
Hot Side Temperature (°C)	25
Qmax (Watts)	37.0
Delta Tmax (°C)	74
I _{max} (Amps)	3.9
V _{max} (Volts)	15.4
Module Resistance (ohms)	3.40

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"

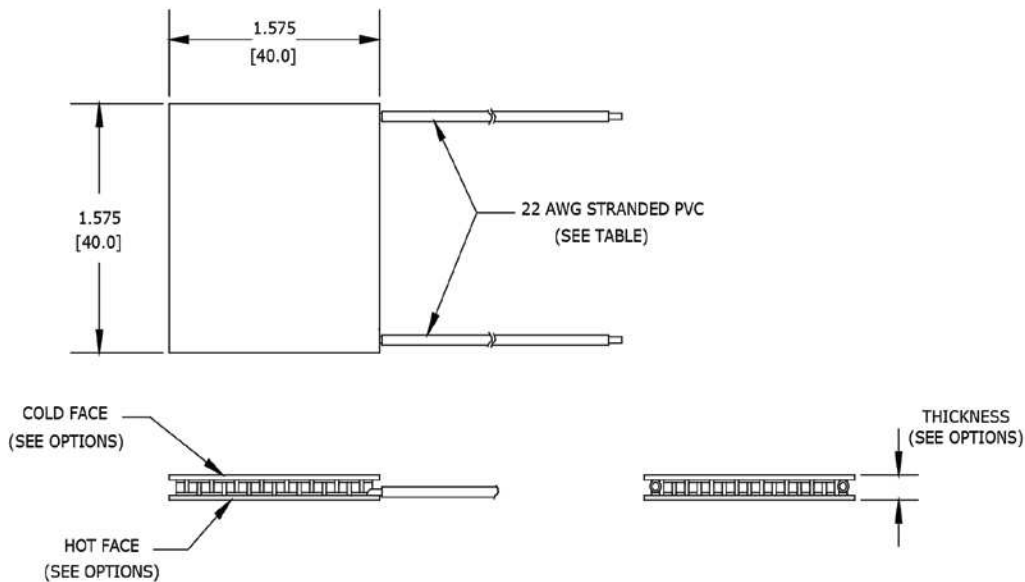
SEALING OPTIONS

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_{max} or V_{max} when operating module
- Reference assembly guidelines for recommended installation

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

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