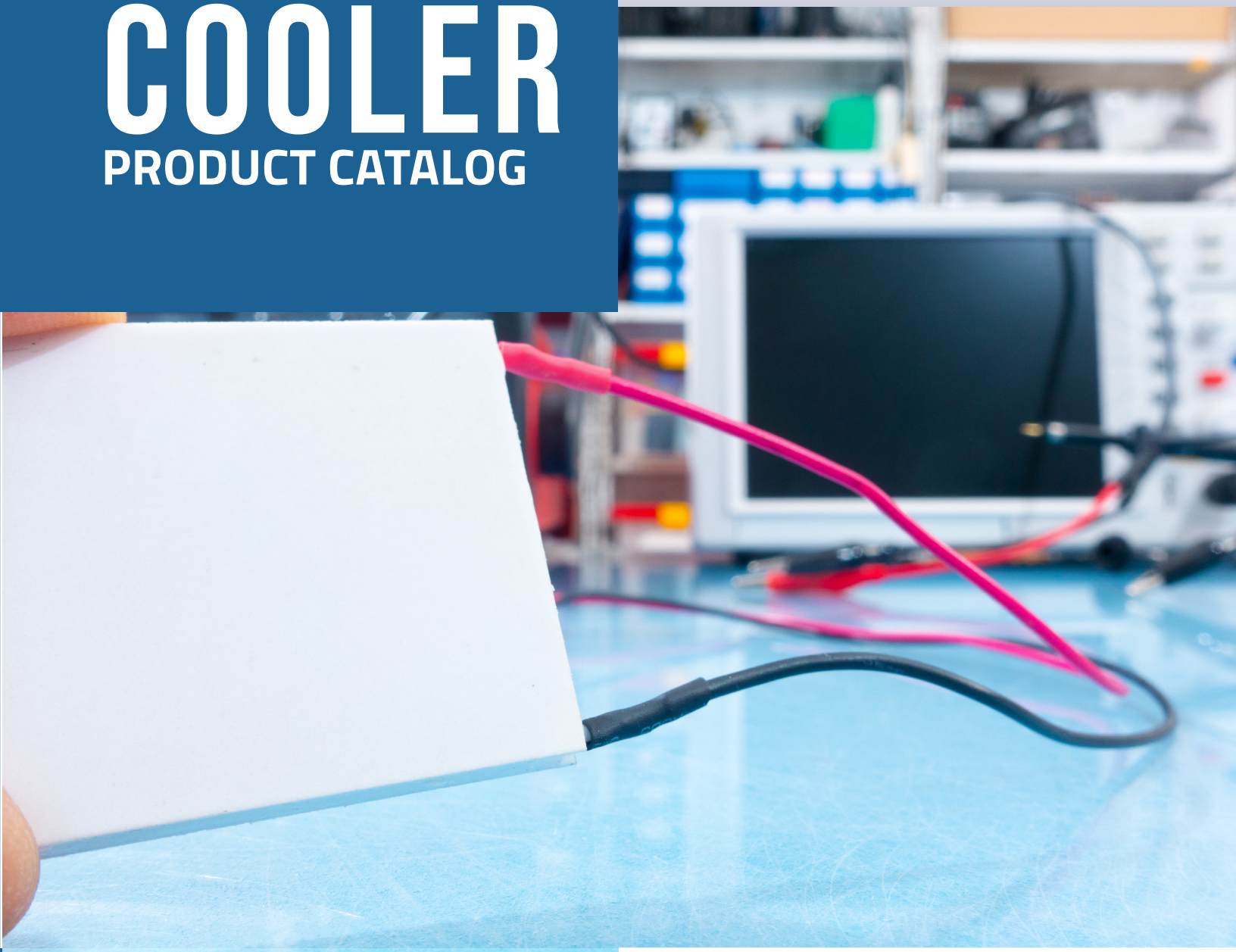
WAKEFIELDTHERMAL

THERMOELECTRIC COOLER PRODUCT CATALOG



Total Thermal Solution

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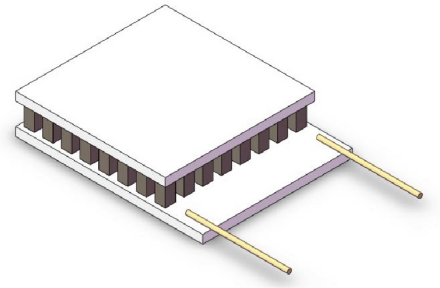
WAKEFIELDTHERMAL

MICRO SERIES
THERMOELECTRIC COOLER

Wakefield Thermal offers a selection of thermoelectric coolers (TEC's). These devices use the Peltier effect which is a unique method of temperature control that uses semiconductors and electricity to transfer heat away from objects that are heating up. Unlike traditional cooling methods, this technology doesn't rely on compressors or refrigerants. Instead, it harnesses the power of electricity to create a cooling effect by moving heat from one side of a thermoelectric module to the other. This makes it an efficient and compact solution for temperature management in a wide range of applications.



GENERAL SPECIFICATIONS

Solder	AuSn(melting point 280°C)
Substrate Material	96% AL_2O_3
Terminal Contacts	30AWG solid copper wires tinned with AuSn
Max Short-Time Processing Temperature	220°C
Max Operating Temperature	90°C
RoHS Compliant	Yes
REACH Compliant	Yes
Telcordia GR468 Compliant	Yes
MIL-STD-883 Compliant	Yes

Part Numbering Guide

Series		Width x Length x Thickness		# Of Couples	Finish (Optional)	Complete WV Part Number
TEC	-	6 x 7 x 2.7	-	18	S	TEC - 6 x 7 x 2.7 - 18S

Key	
Series	Thermoelectric Coolers (TEC's)
Width	TOP (Cold Side) and Bottom (hot side) have the same widths
Length	The longest dimension (usually the bottom or hot side)
Thickness	The overall thickness or "height" of the part
# of Couples	The thermocouples are what moves the heat from hot to cold
Finish	Standard parts may be sealed or not, as indicated. Plating available upon request

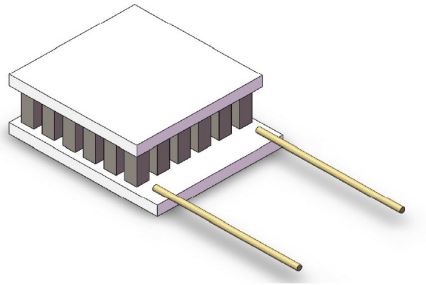
See data sheets for more information.

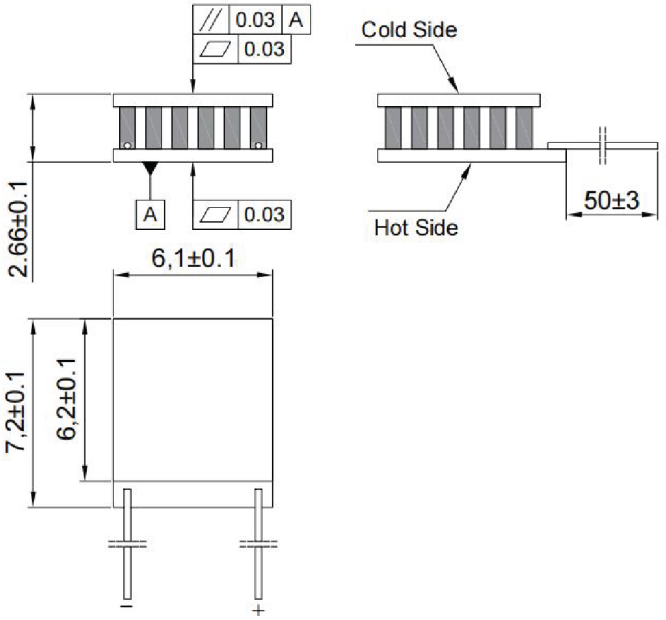
TEC-6X7X2.7-18

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
1.2	84	1.6	2.35	1.77	6.1x6.2	6.1x7.2	2.66

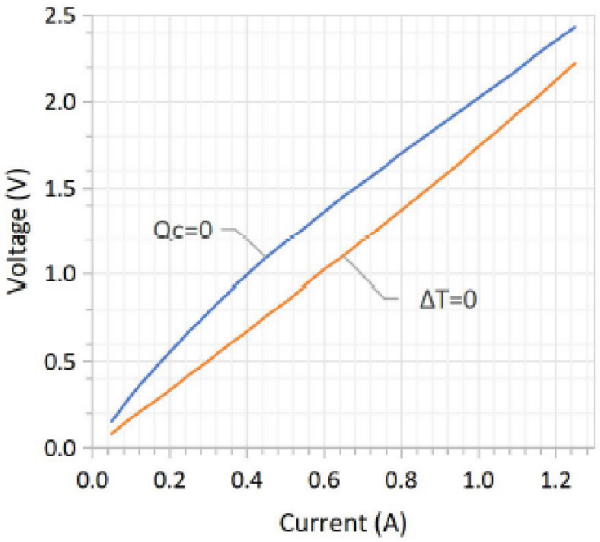
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: none

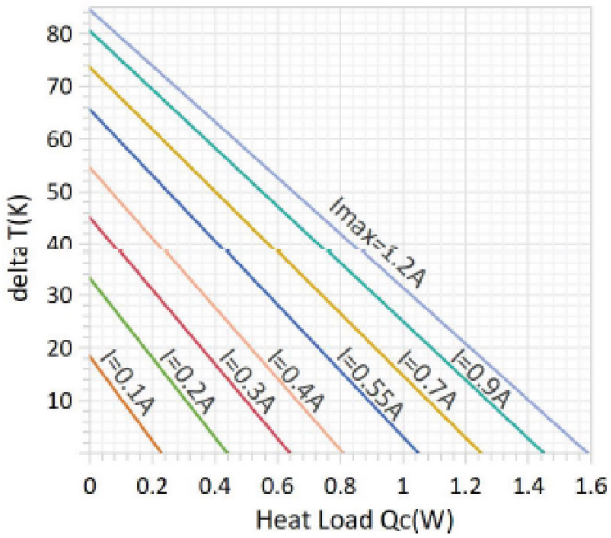




Voltage vs. Current



ΔT vs. Heat Load



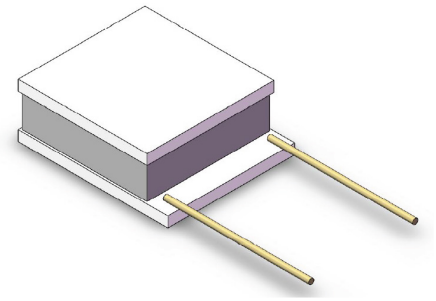
Th=50 °C

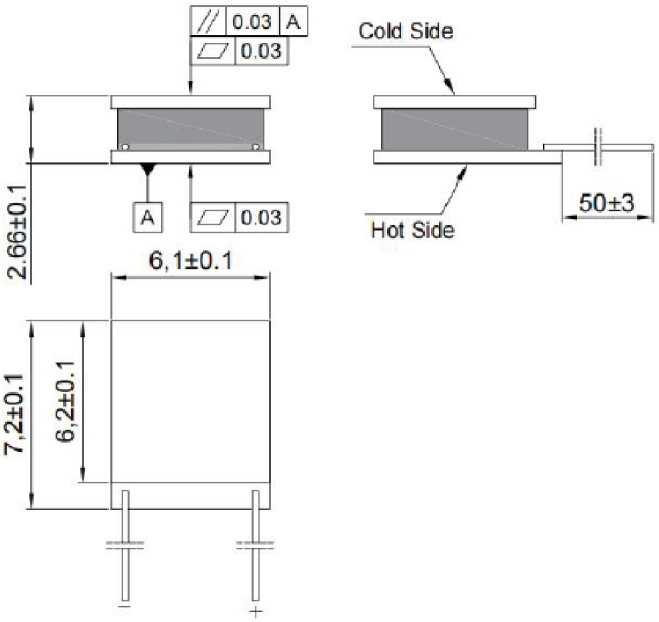
TEC-6X7X3.0-18S

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
1.2	84	1.6	2.35	1.77	6.1x6.2	6.1x7.2	2.96

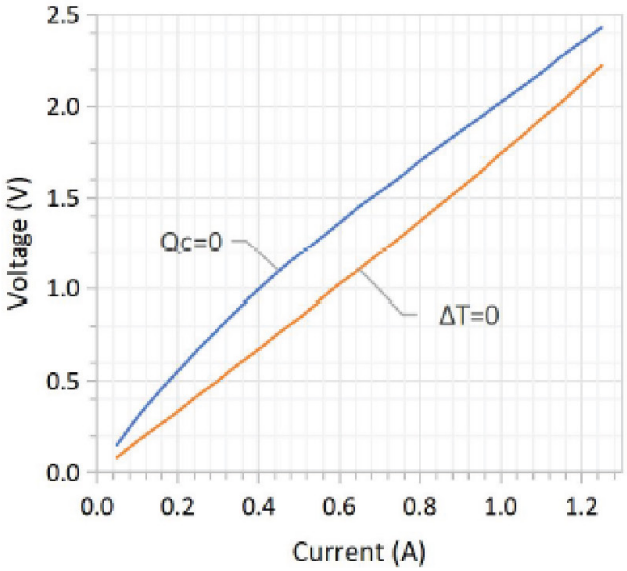
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: RTV

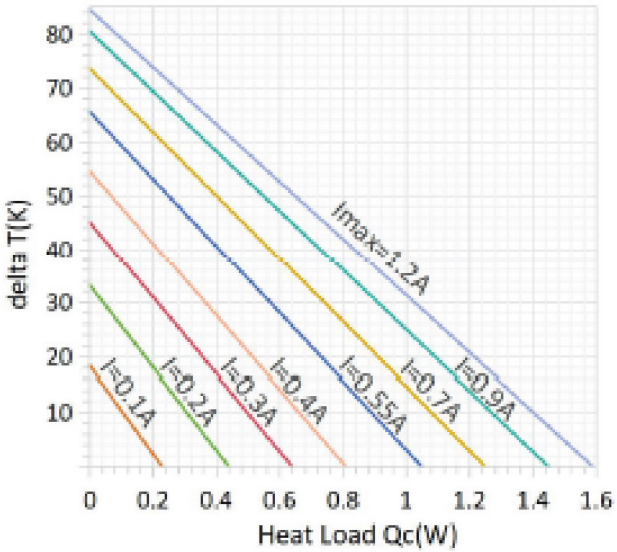




Voltage vs. Current



ΔT vs. Heat Load



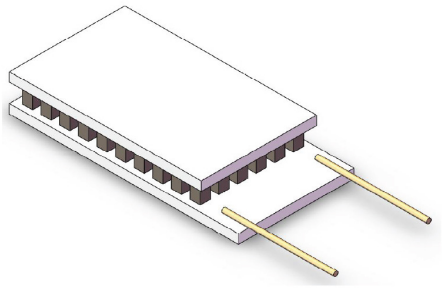
Th=50 °C

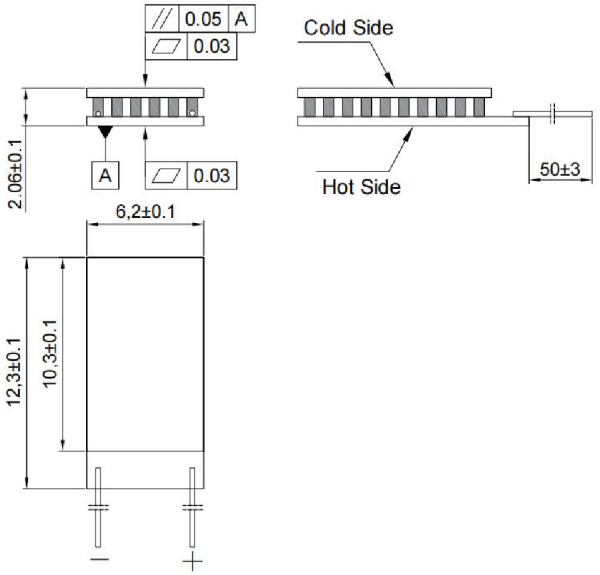
TEC-6X12X2.1-30

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
1.5	83	3.5	3.90	2.19	6.2x10.3	6.2x12.3	2.06

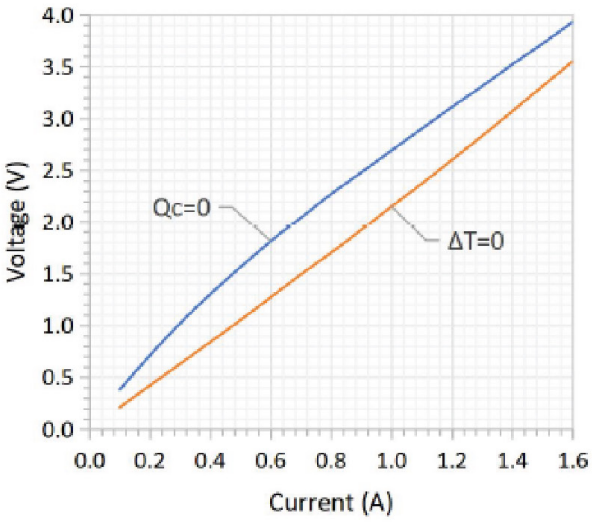
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: none

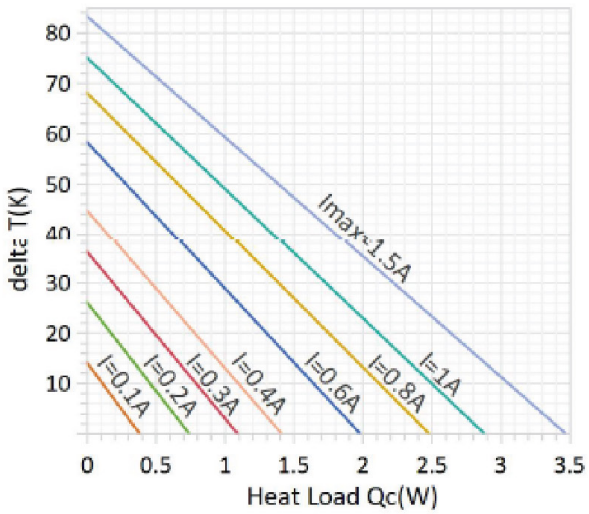




Voltage vs. Current



ΔT vs. Heat Load



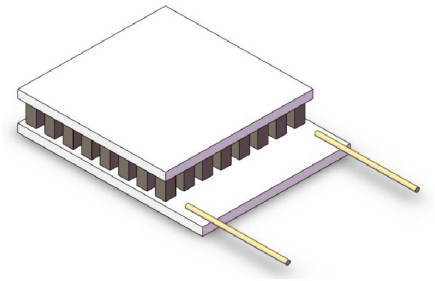
Th=50 °C

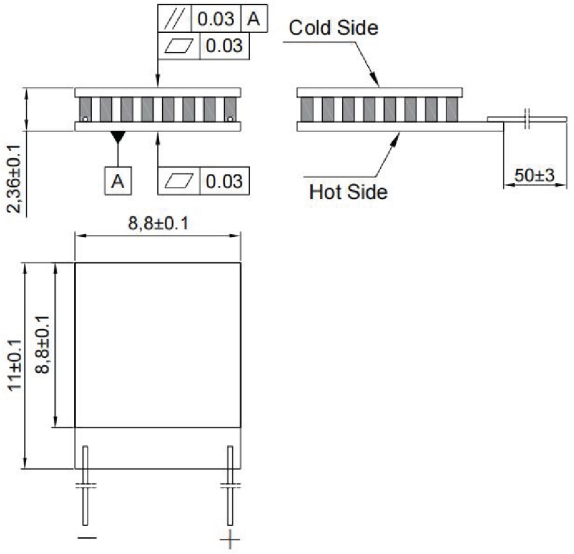
TEC-9X11X2.4-32

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
1.5	84	3.6	4.13	2.46	8.8x8.8	8.8x11	2.36

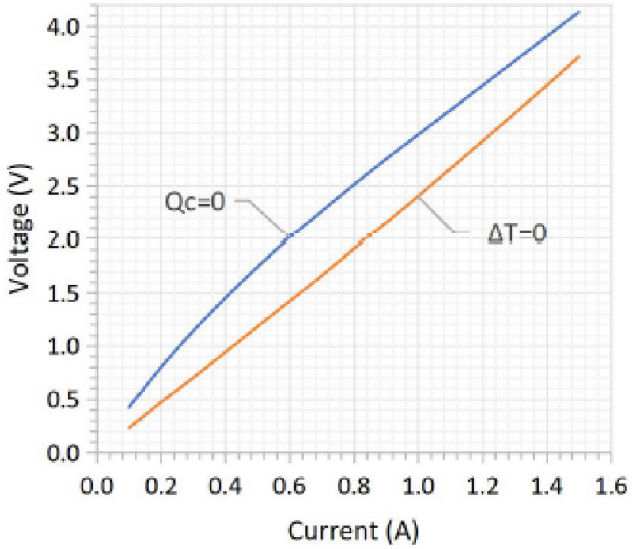
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: none

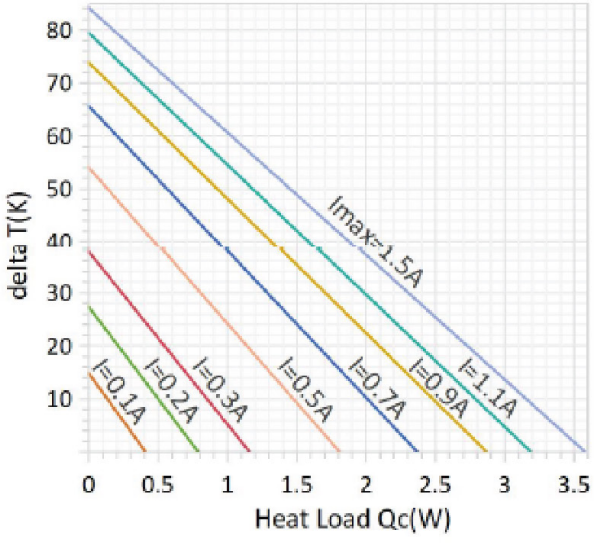




Voltage vs. Current



ΔT vs. Heat Load



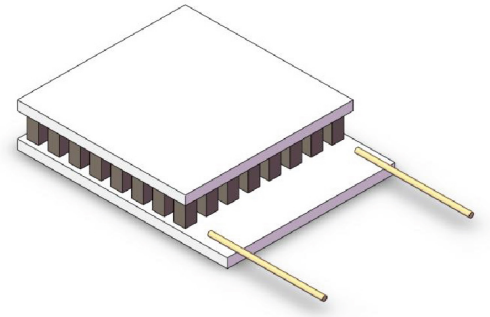
Th=50 °C

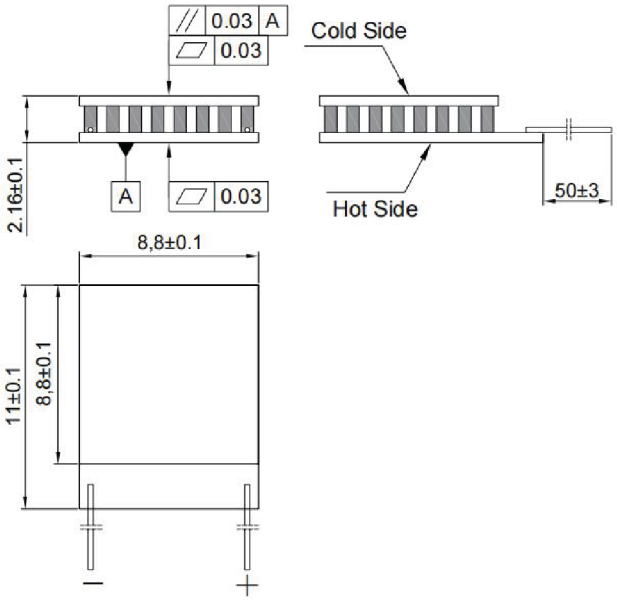
TEC-9X11X2.2-32

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
2.0	84	4.8	4.13	1.86	8.8x8.8	8.8x11	2.16

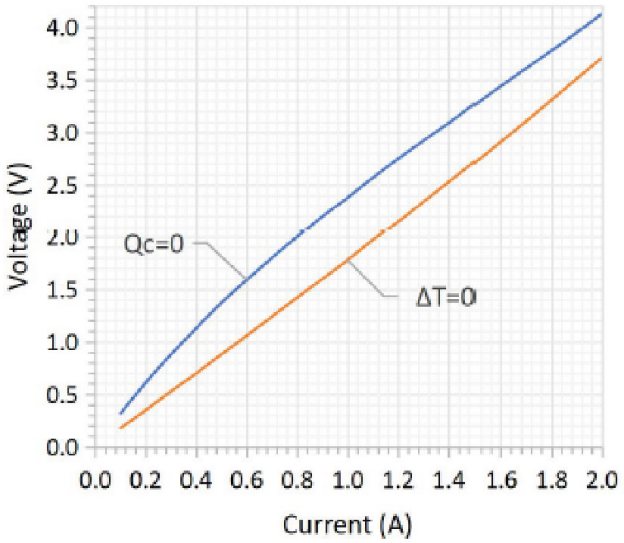
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: none

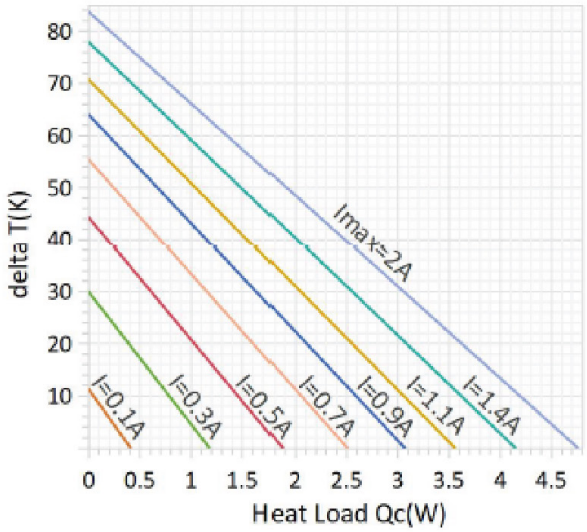




Voltage vs. Current



ΔT vs. Heat Load



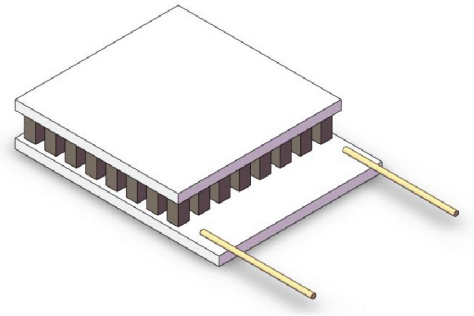
Th=50 °C

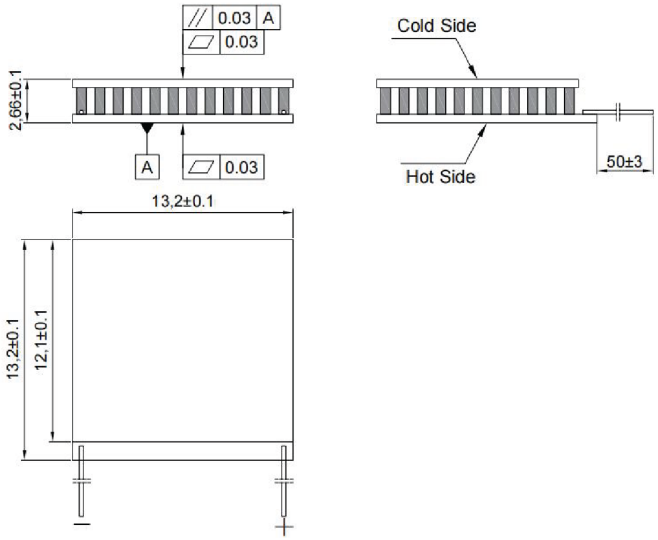
TEC-13X13X2.7-65

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
1.2	84	5.8	8.48	6.38	12.1x13.2	13.2x13.2	2.66

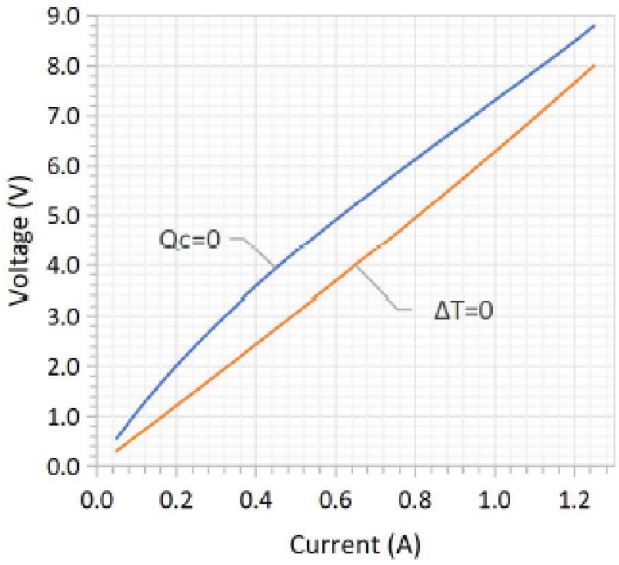
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: none

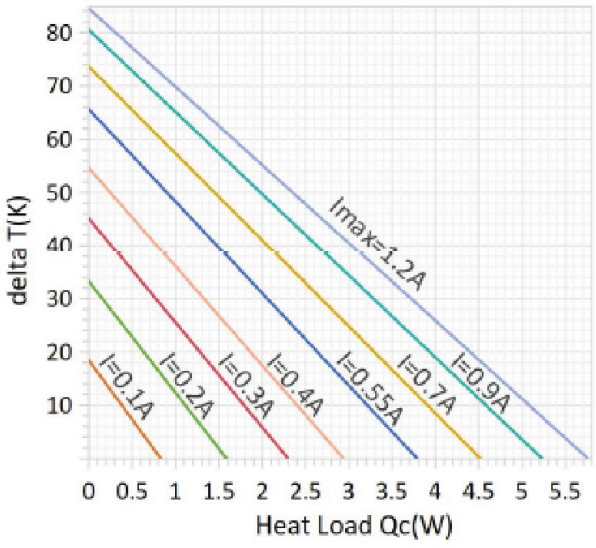




Voltage vs. Current



ΔT vs. Heat Load



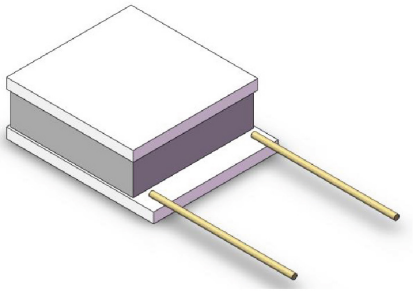
Th=50 °C

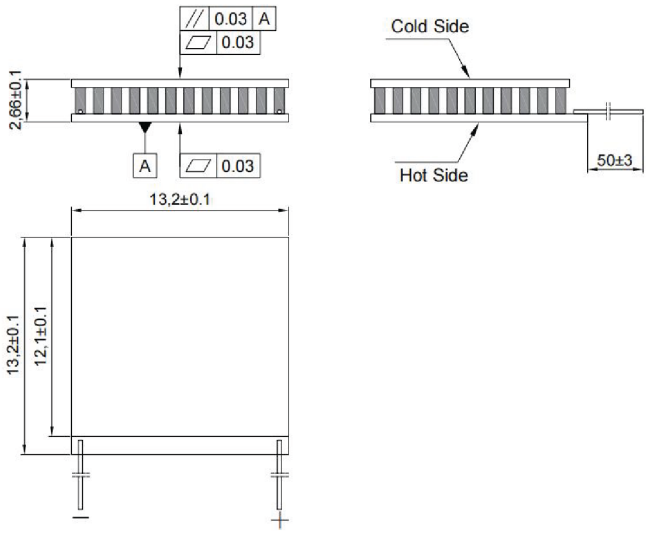
TEC-13X13X2.7-65S

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
1.2	84	5.8	8.48	6.38	12.1x13.2	13.2x13.2	2.66

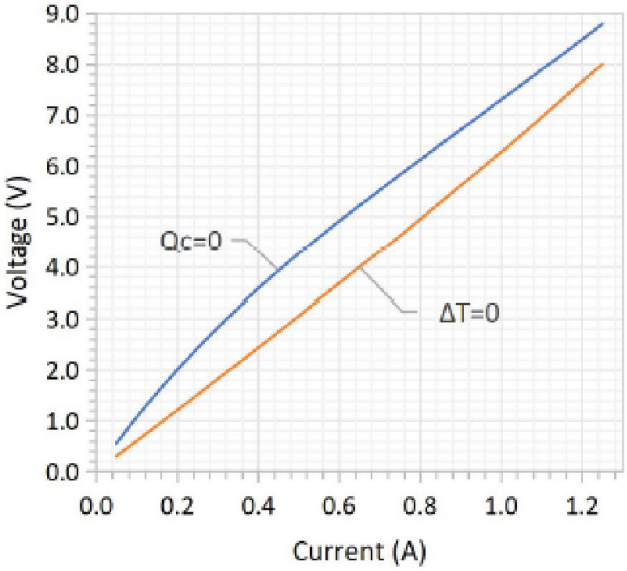
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: RTV

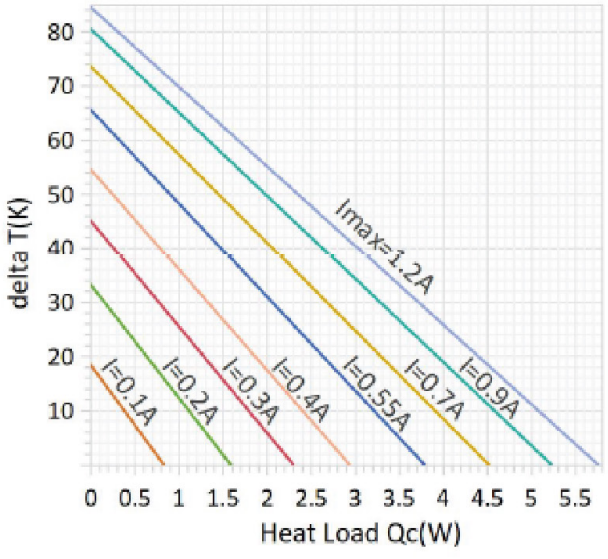




Voltage vs. Current



ΔT vs. Heat Load



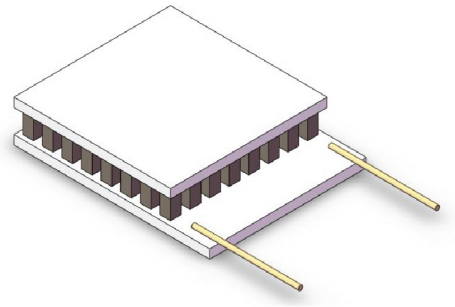
Th=50 °C

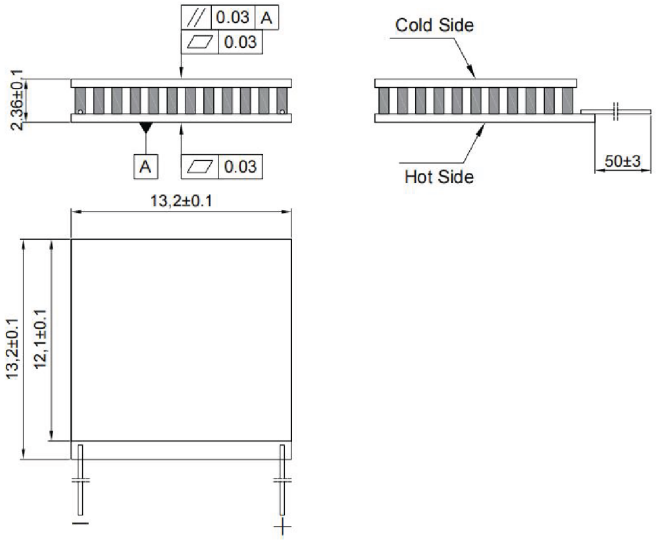
TEC-12X13X2.4-65

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
1.5	84	7.3	8.80	5.03	12.1x13.2	13.2x13.2	2.36

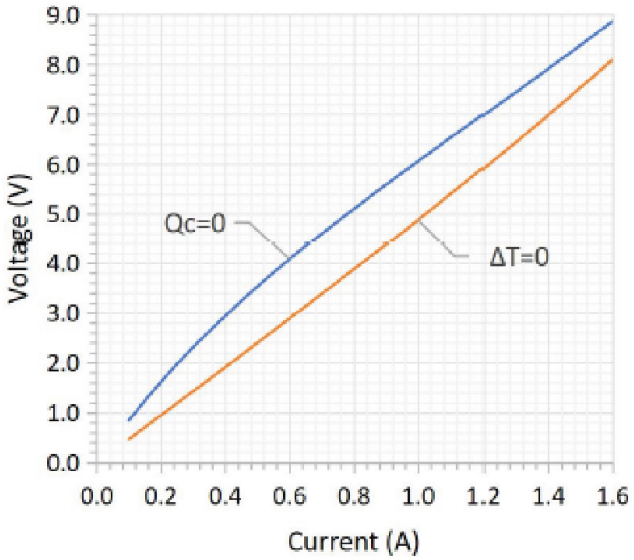
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: none

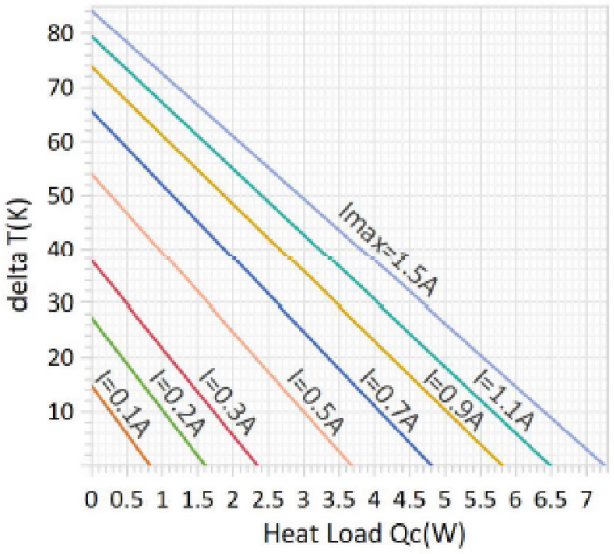




Voltage vs. Current



ΔT vs. Heat Load



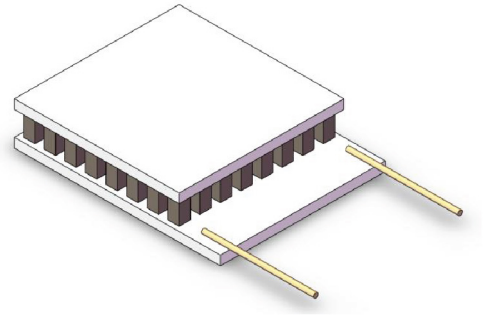
Th=50 °C

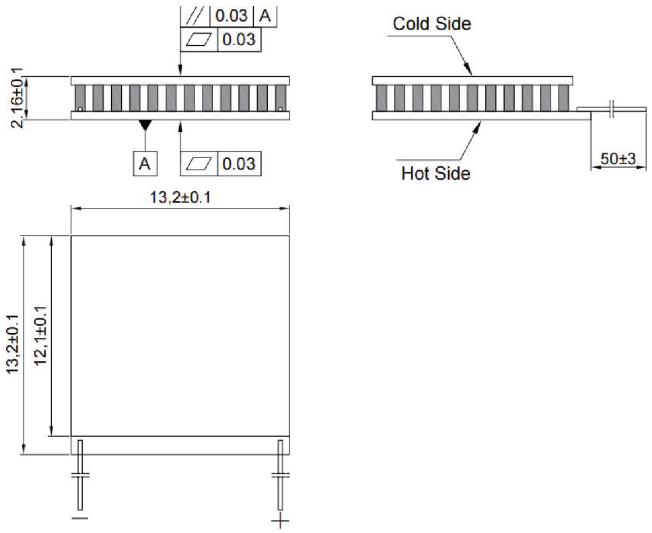
TEC-12X13X2.2-65

I_{max} (A)	ΔT_{max} (°C)	QC_{max} (W)	U_{max} (V)	ACR (ohm)	Top (mm)	Bottom (mm)	Height (mm)
2.0	84	9.7	8.70	3.77	12.1x13.2	13.2x13.2	2.16

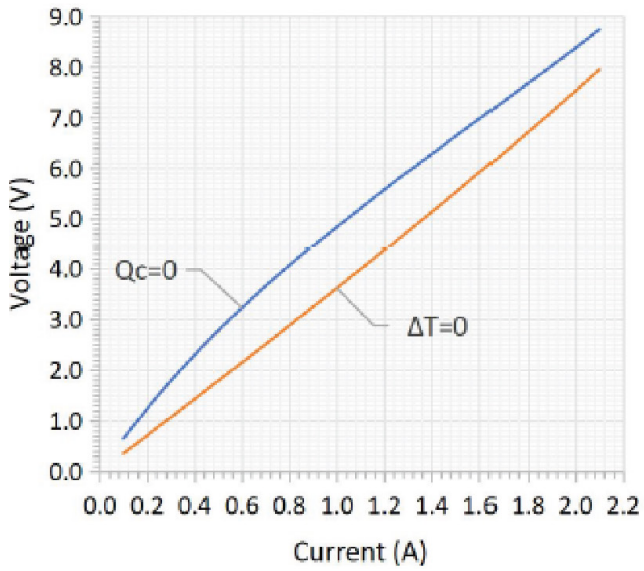
SPECIFICATIONS:

- Cold side finishing: none
- Hot side finishing: none
- Sealing: none

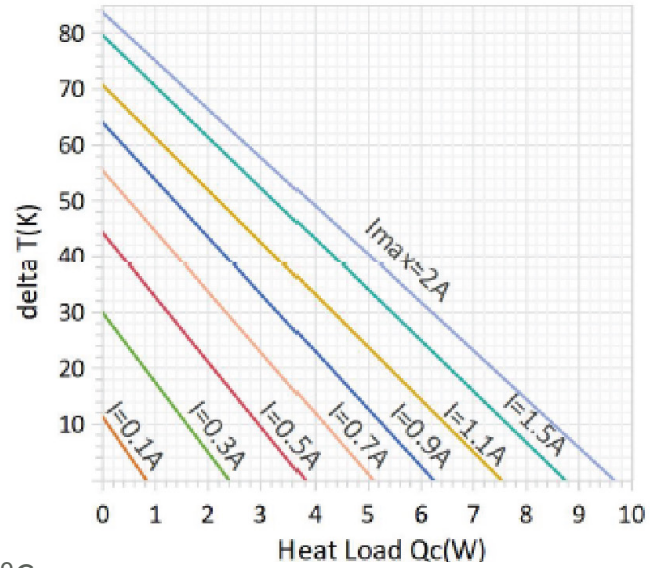




Voltage vs. Current

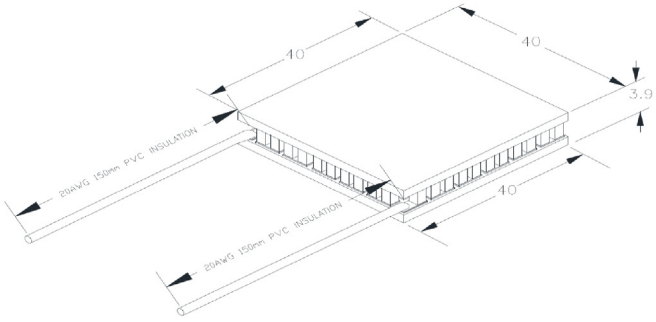


ΔT vs. Heat Load



Th=50 °C

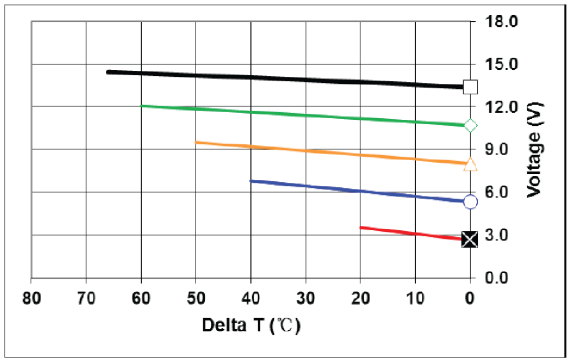
TEC-40-39-127

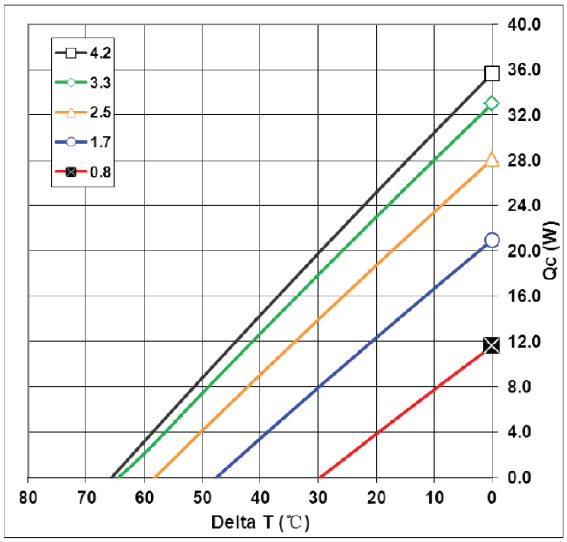


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	33.4	68	4.0	15.4	3.22
50°C	39	75	4.0	16.4	3.63

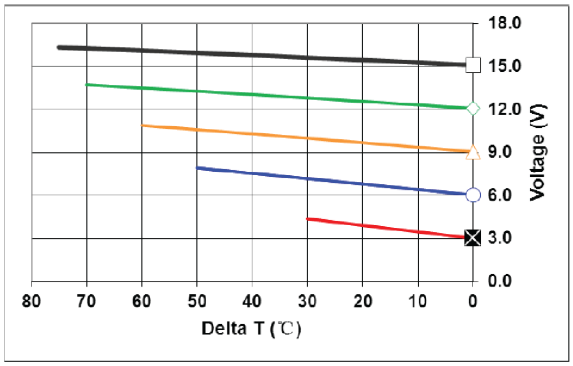
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

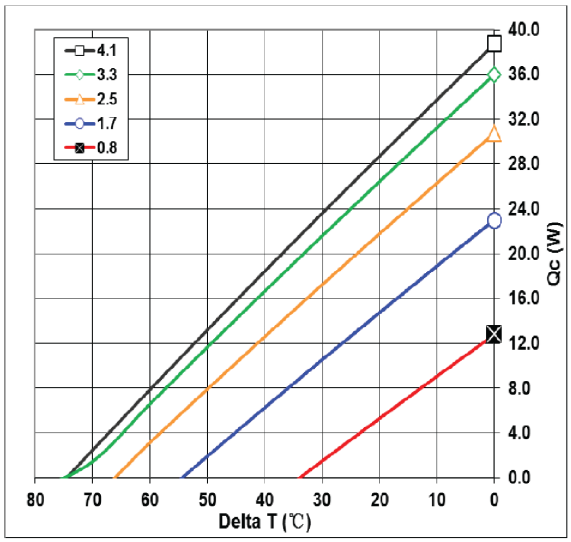
Performance Curves Th=25 °C



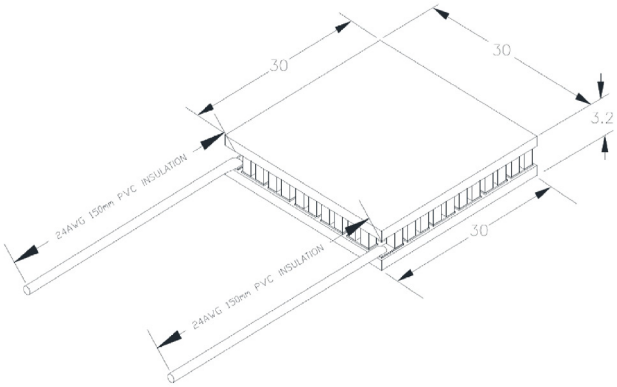


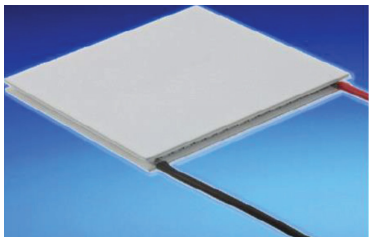
Performance Curves Th=50 °C





TEC-30-32-127

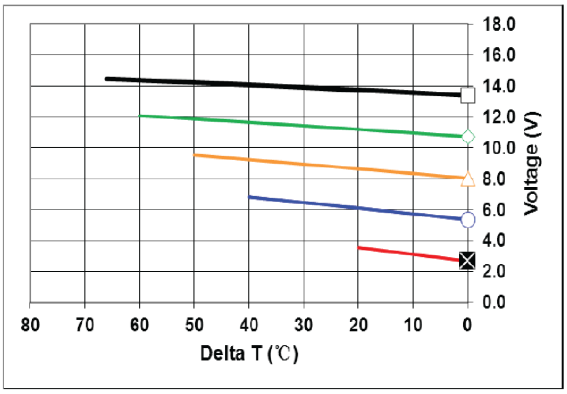


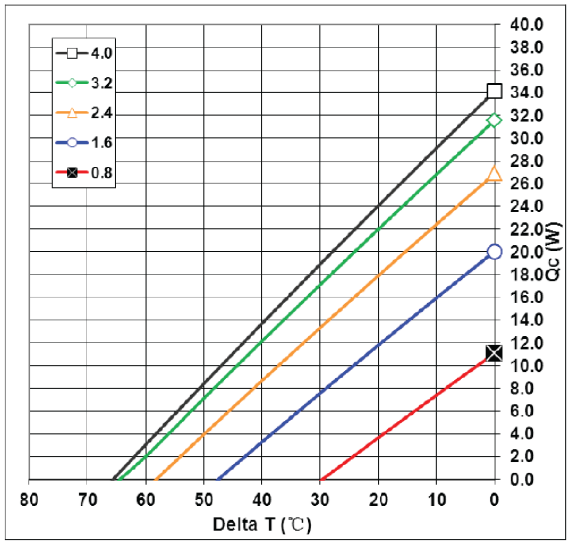


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	33.4	68	4.0	15.4	3.38
50°C	36.6	75	4.0	16.4	3.8

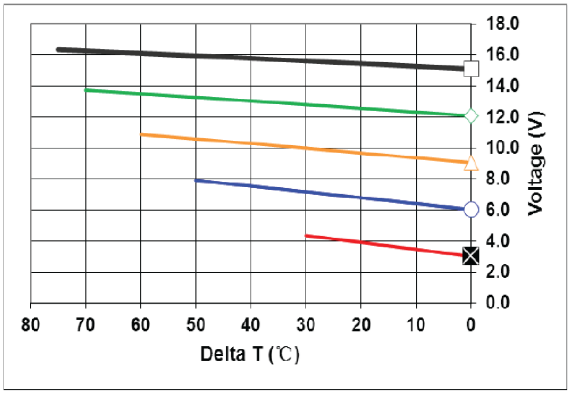
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

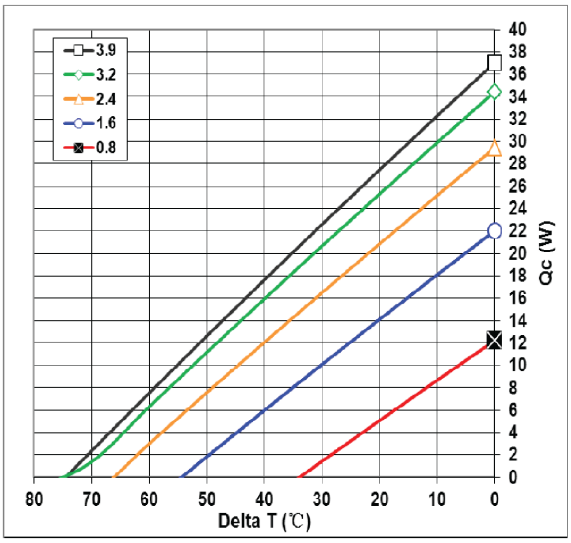
Performance Curves Th=25 °C



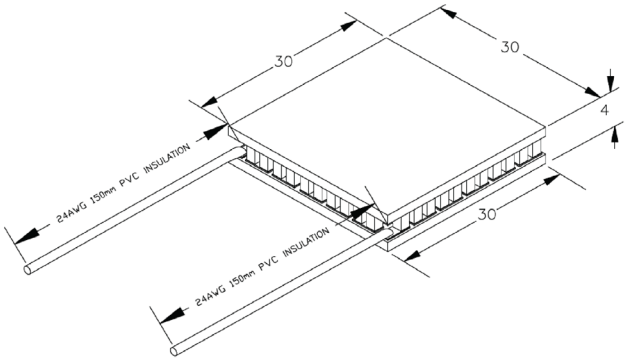


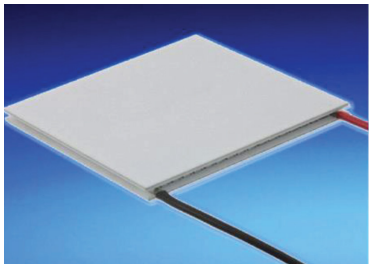
Performance Curves Th=50 °C





TEC-30-40-127

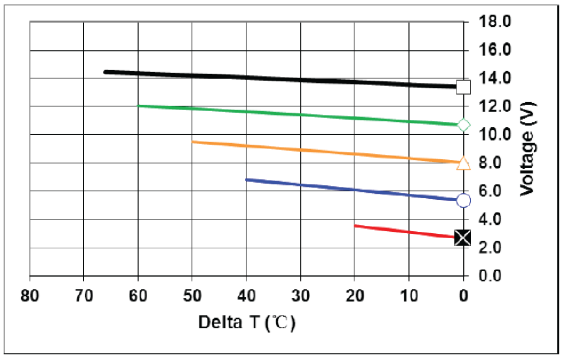


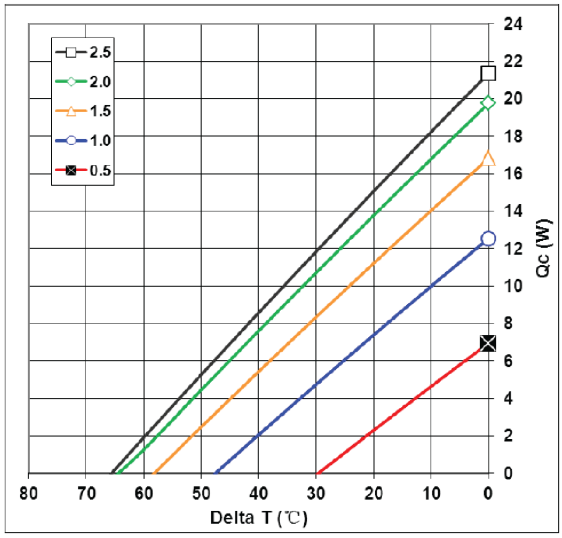


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	21.4	68	2.5	15.4	5.30
50°C	23.6	75	2.5	16.4	6.07

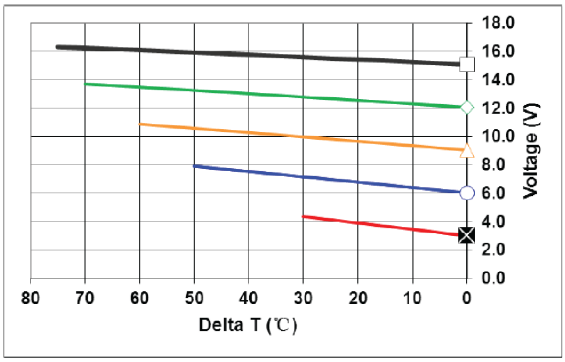
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

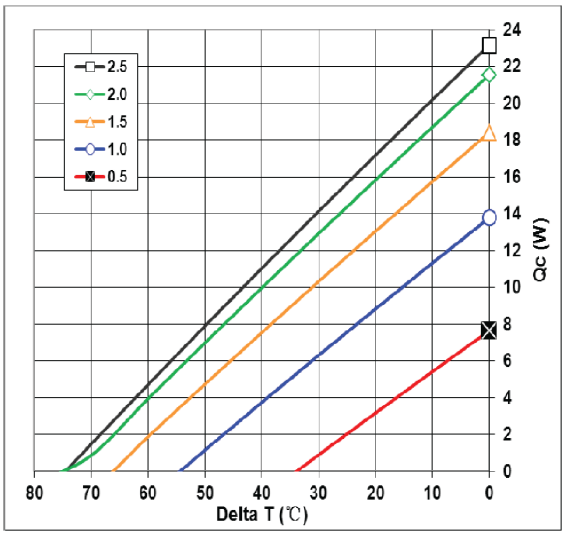
Performance Curves Th=25 °C



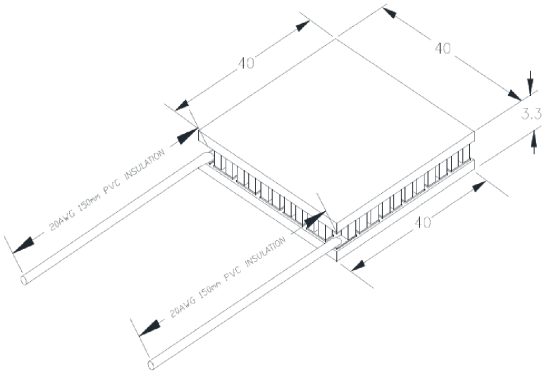


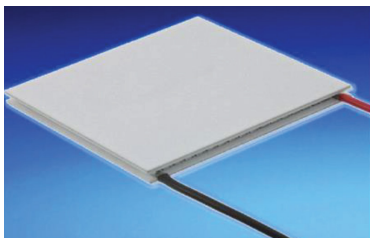
Performance Curves Th=50 °C





TEC-40-33-127

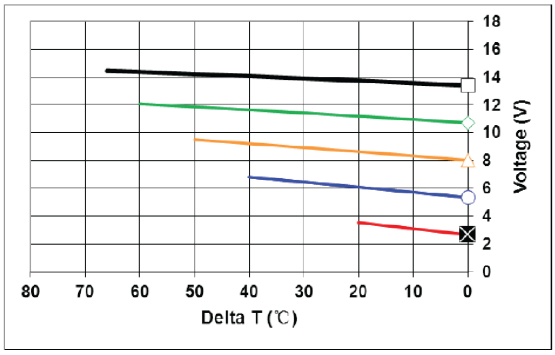


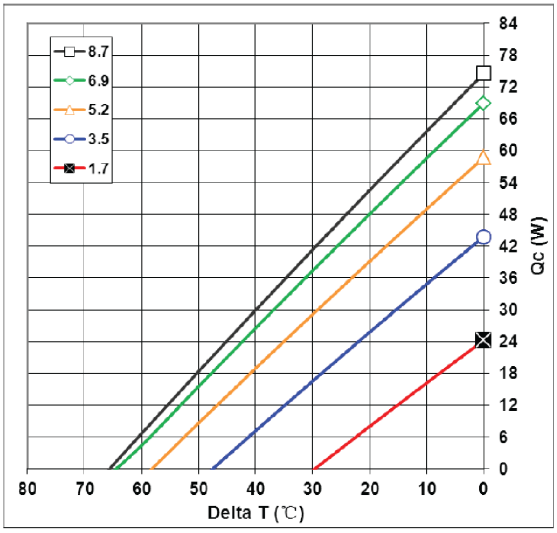


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	72	68	8.5	15.4	1.66
50°C	82	75	8.5	16.4	1.74

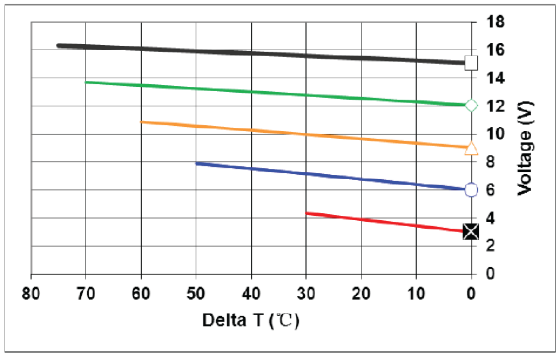
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

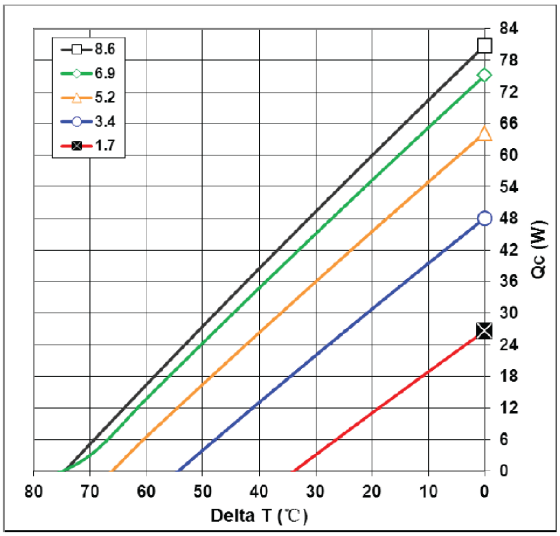
Performance Curves Th=25 °C



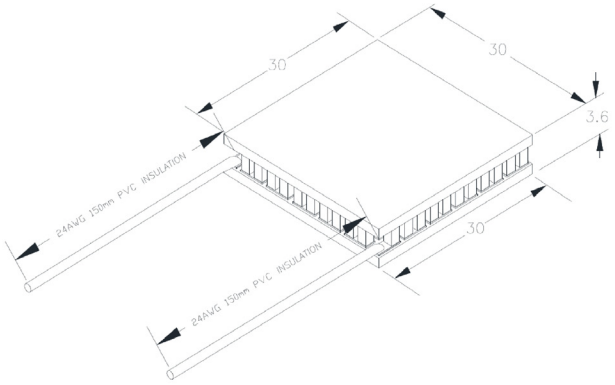


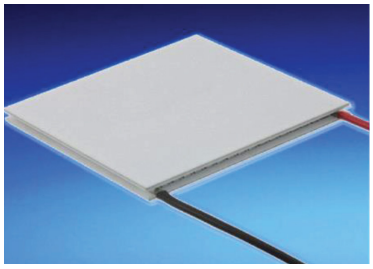
Performance Curves Th=50 °C





TEC-30-36-127

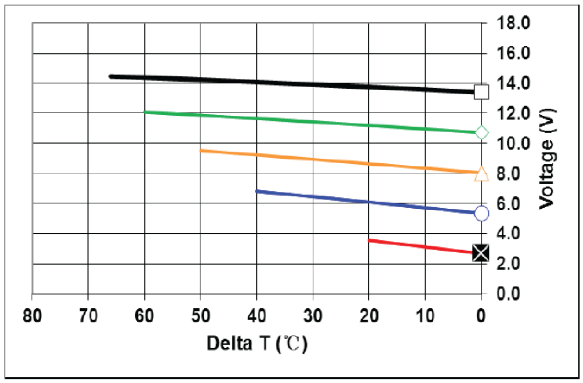


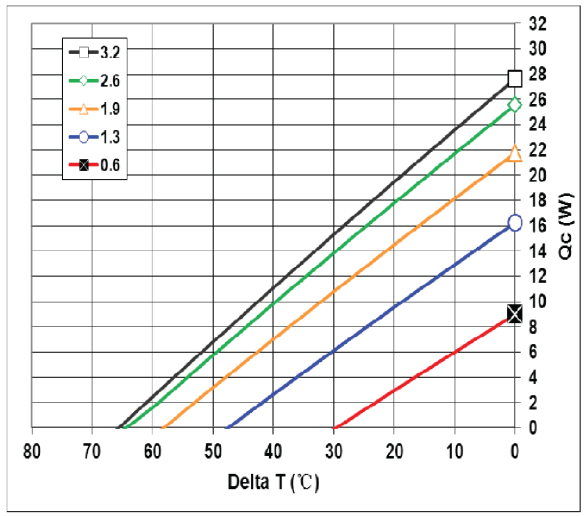


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	25.7	68	3.0	15.4	4.13
50°C	29.8	75	3.0	16.4	4.69

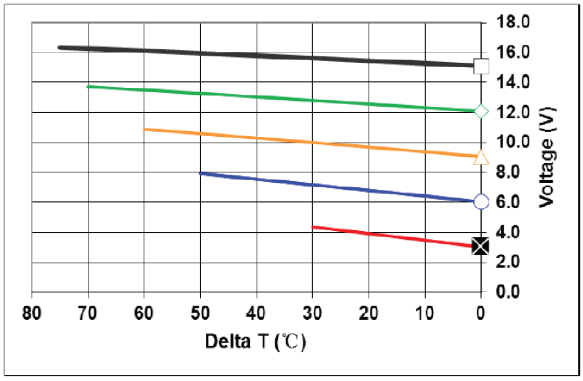
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

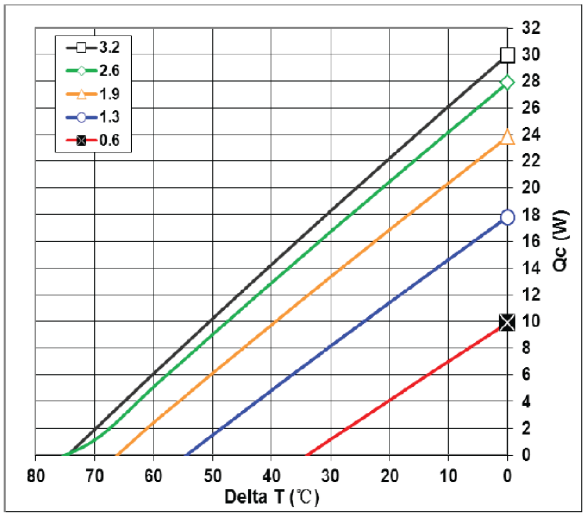
Performance Curves Th=25 °C



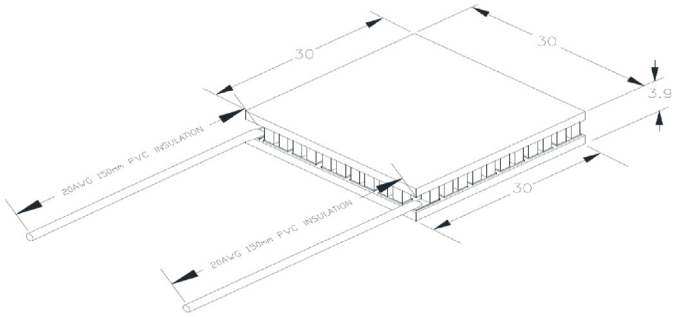


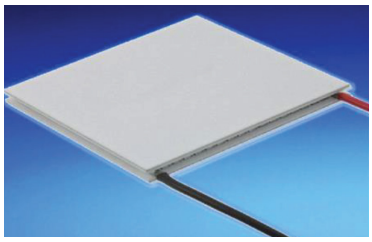
Performance Curves Th=50 °C





TEC-30-39-71

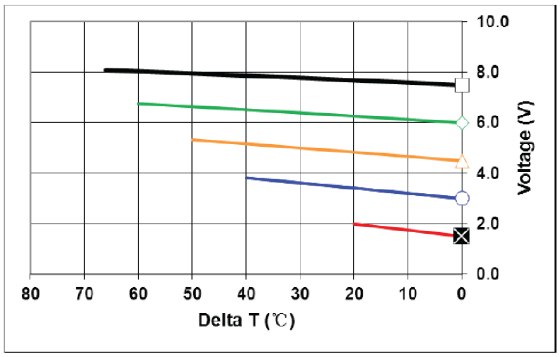


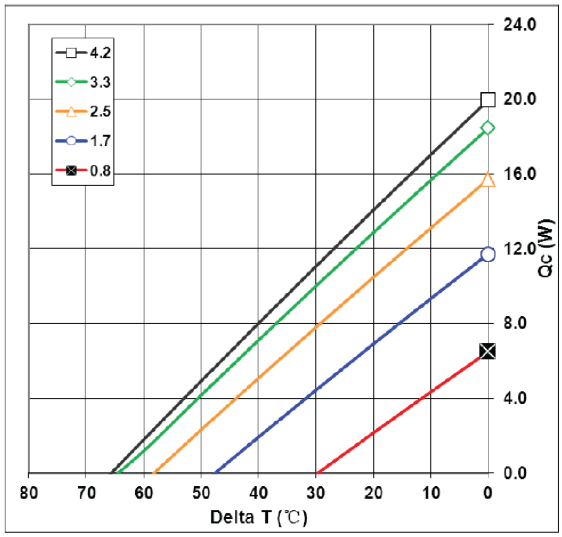


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	18.7	68	4.0	8.6	1.86
50°C	21.9	75	4.0	9.6	2.1

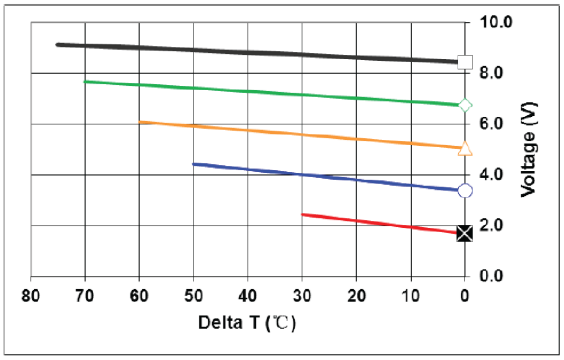
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

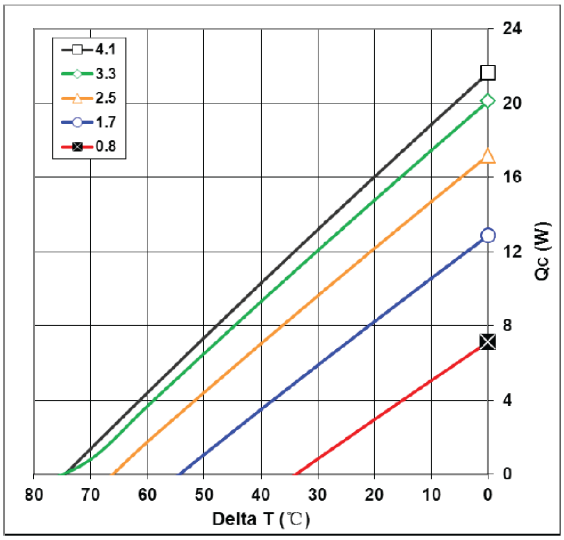
Performance Curves Th=25 °C



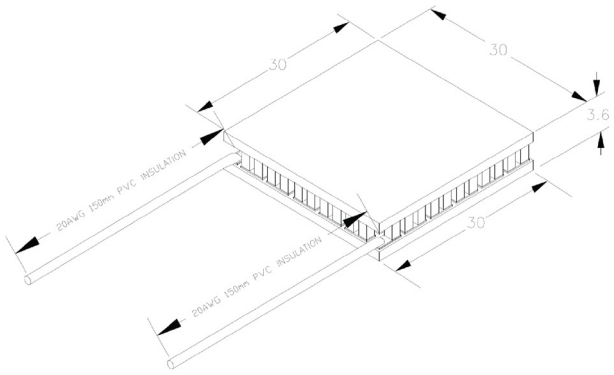


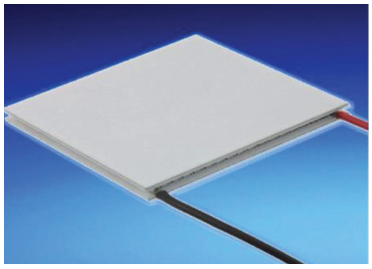
Performance Curves Th=50 °C





TEC-30-36-71

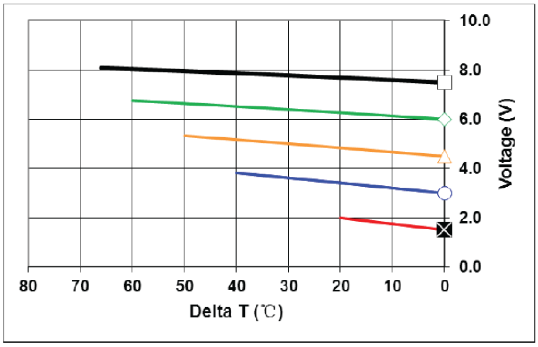


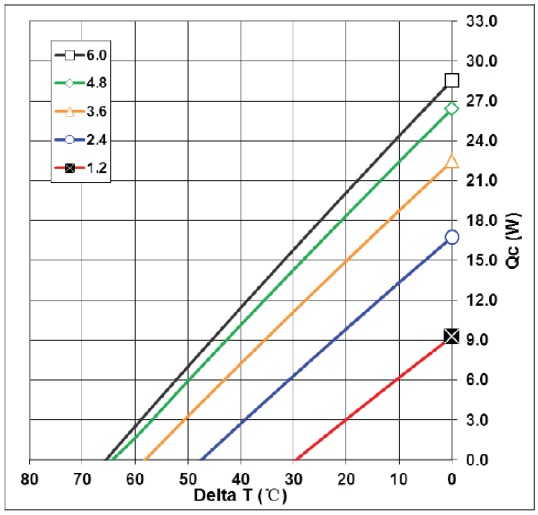


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	28.7	68	6.0	8.6	1.24
50°C	31.2	75	6.0	9.5	1.41

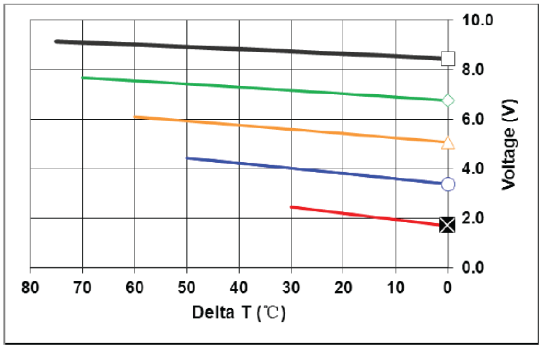
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

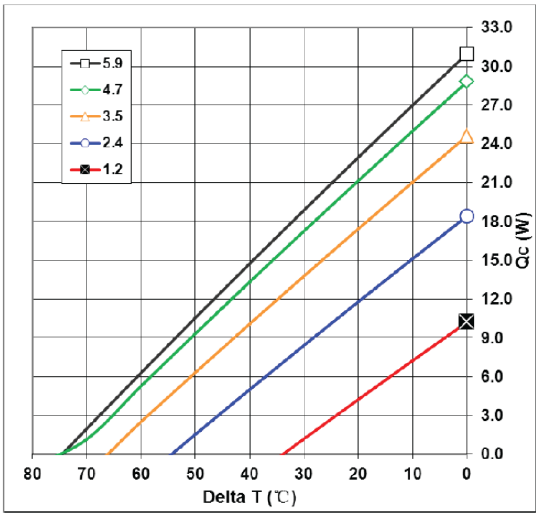
Performance Curves Th=25 °C



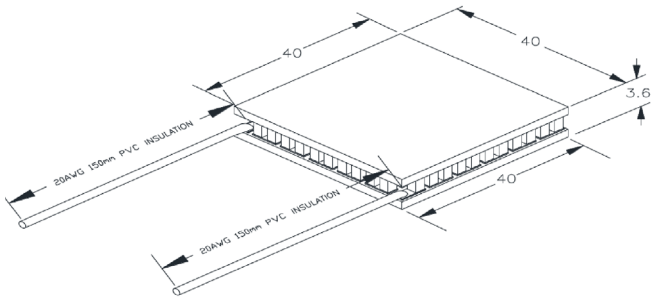


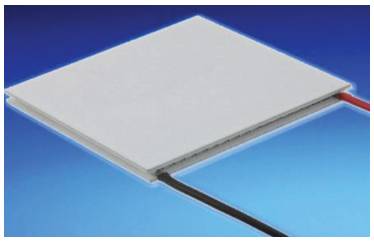
Performance Curves Th=50 °C





TEC-40-36-127

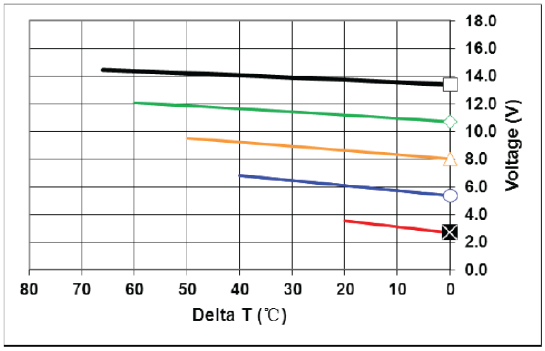


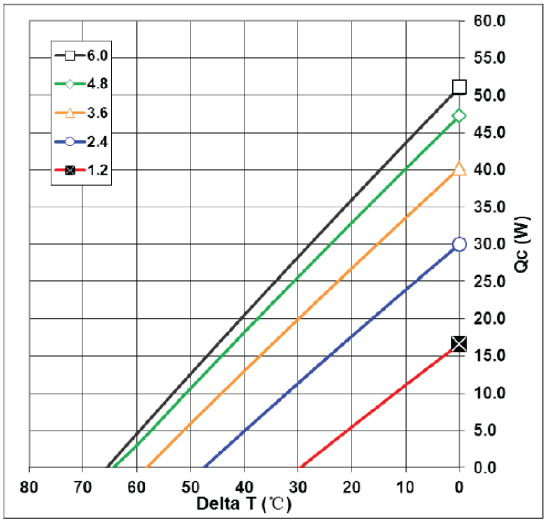


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	51.4	68	6.0	15.4	2.17
50°C	55	75	6.0	16.4	2.54

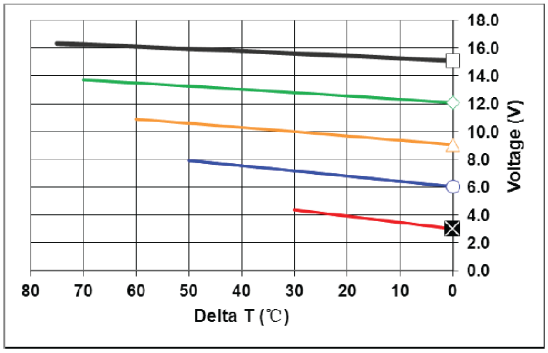
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

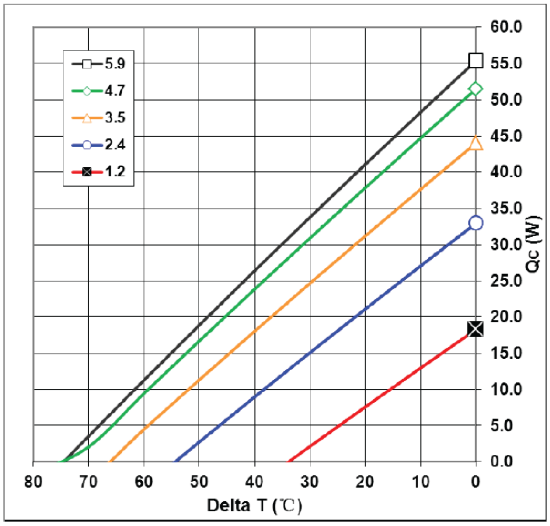
Performance Curves Th=25 °C



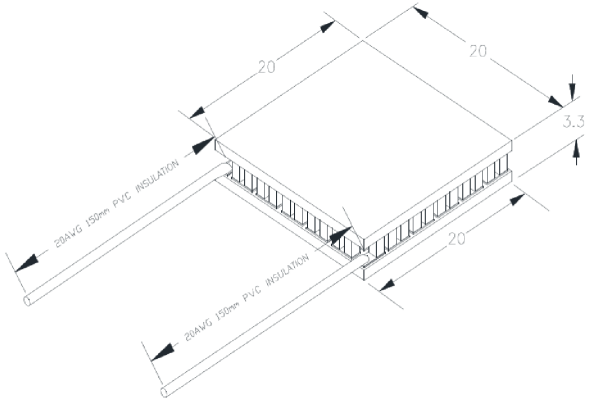


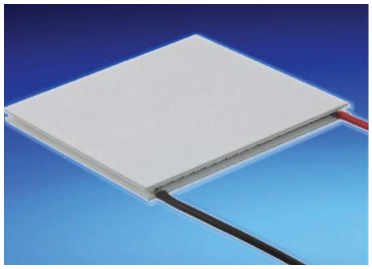
Performance Curves Th=50 °C





TEC-20-33-31

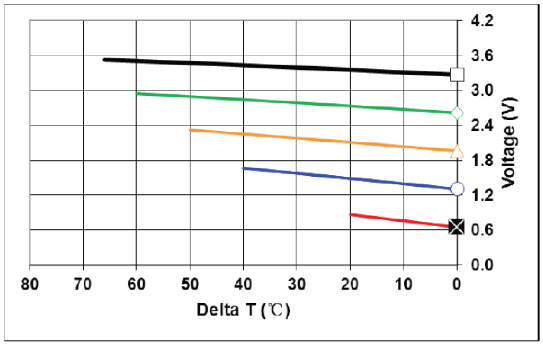


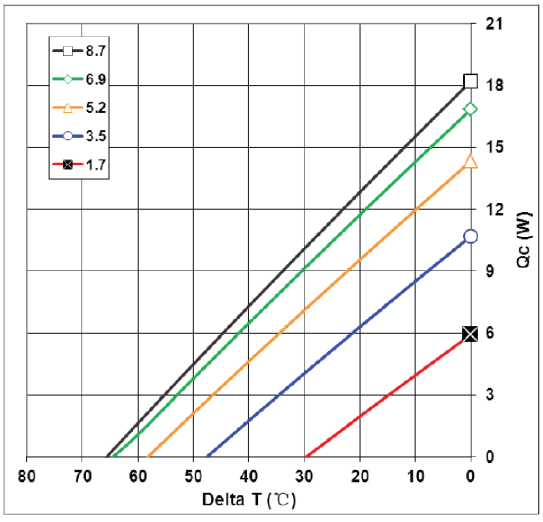


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	16.8	68	8.5	3.75	0.38
50°C	20.3	75	8.5	4.1	0.42

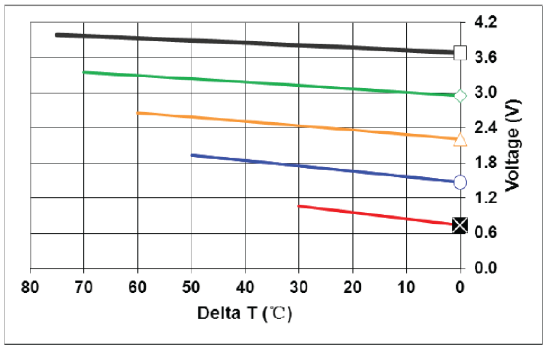
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

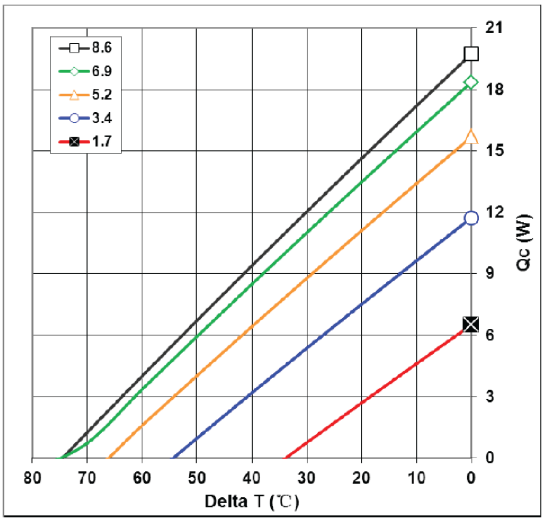
Performance Curves Th=25 °C



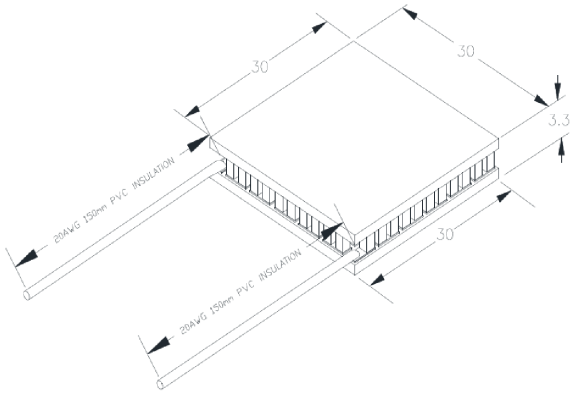


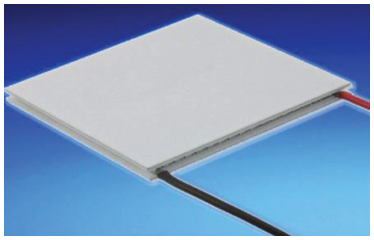
Performance Curves Th=50 °C





TEC-30-33-71

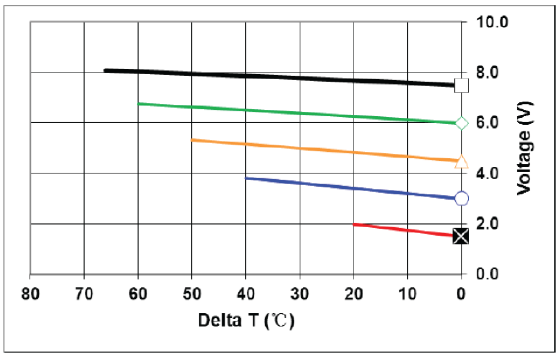


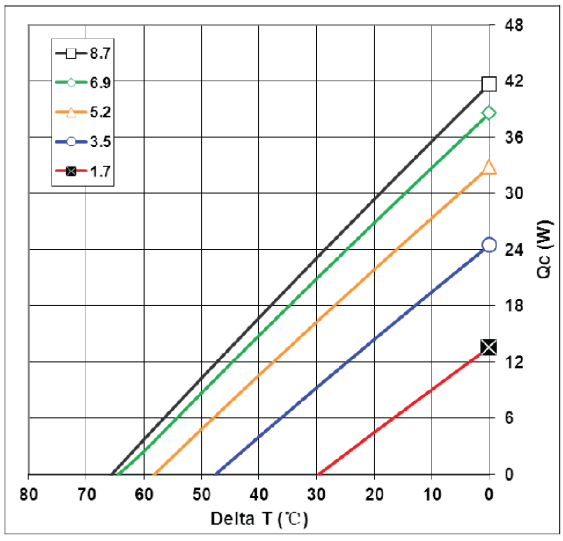


Hot Side Temperature(°C)	Qmax (Watts)	Delta Tmax(°C)	Imax (Amps)	Vmax (Volts)	ModuleResistance (Ohms)
27°C	35.5	68	8.5	8.6	0.86
50°C	46	75	8.5	9.6	0.97

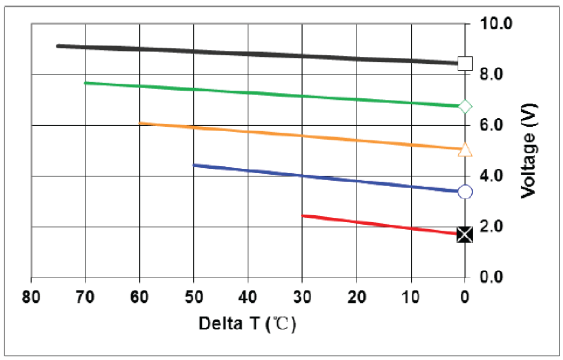
**TOLERANCES FOR THERMAL AND ELECTRICAL PARAMETERS +- 10%.

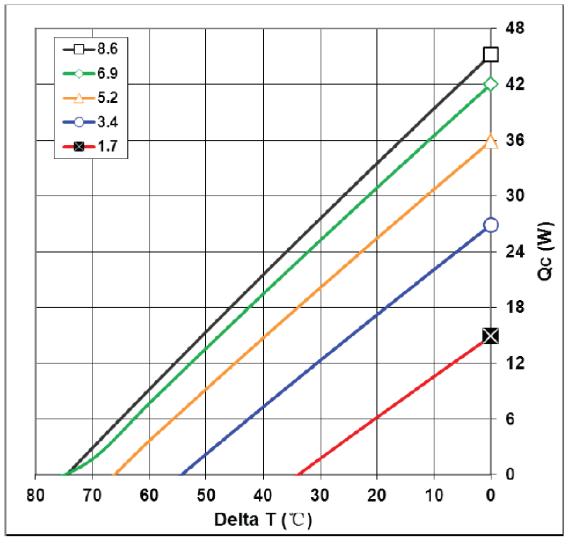
Performance Curves Th=25 °C





Performance Curves Th=50 °C





NOTES

NOTES

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