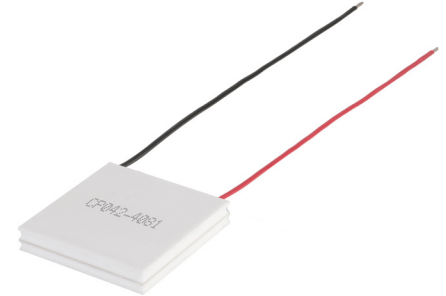




MODEL: CP042-4081 | **DESCRIPTION:** PELTIER MODULE

FEATURES

- 2-stage TEC module
- wide ΔT max
- precise temperature control
- silicone sealed
- solid state construction



SPECIFICATIONS

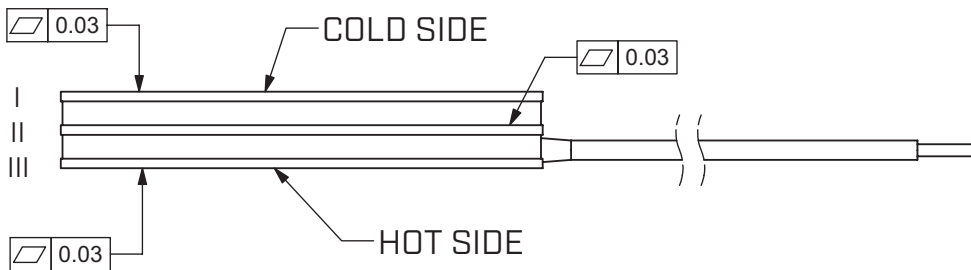
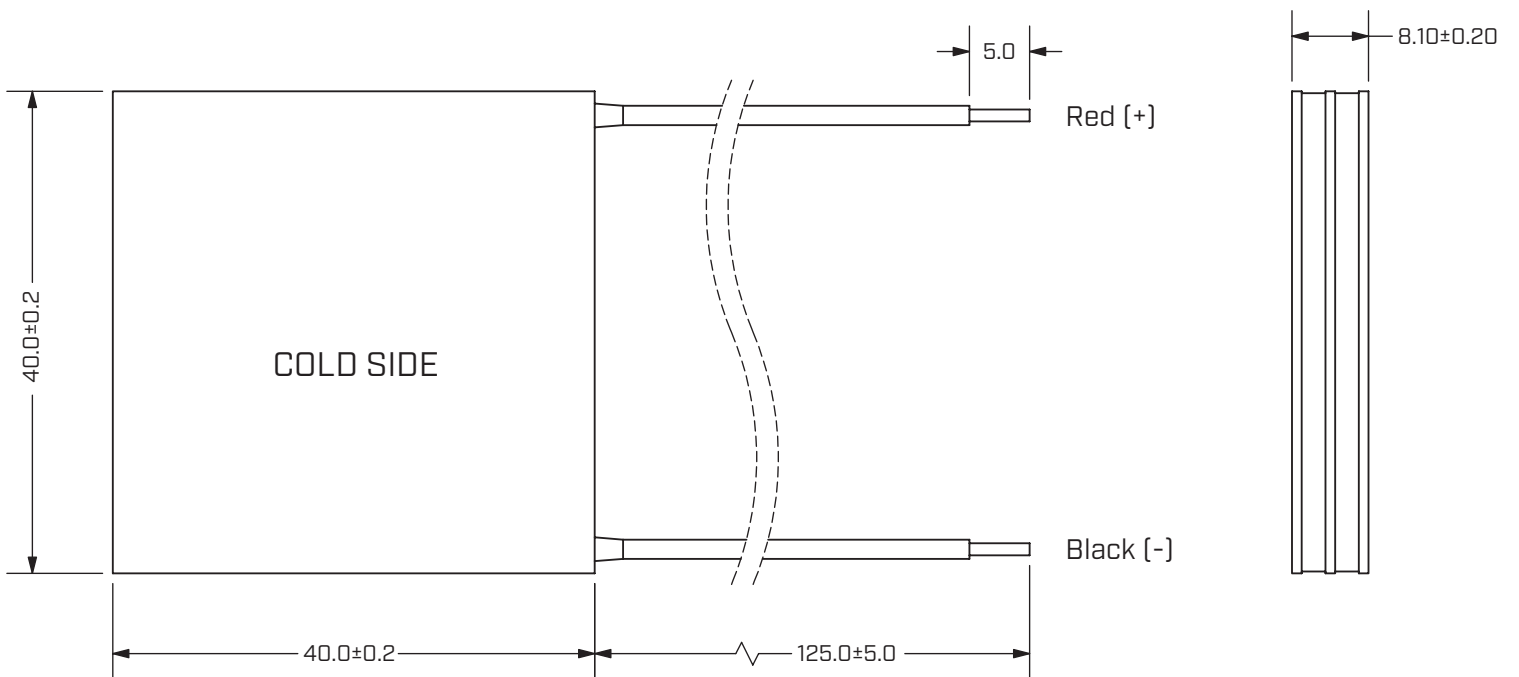
parameter	conditions/description	min	typ	max	units
input voltage ¹	Th = 27°C			14.4	V
	Th = 50°C			16.4	V
input current ²				4.2	A
internal resistance ³	Th = 27°C		3.25		Ω
	Th = 50°C		3.60		Ω
Qmax ⁴	Th = 27°C			27.7	W
	Th = 50°C			31.1	W
ΔT max ⁵	Th = 27°C			91	°C
	Th = 50°C			104	°C
solder melting temperature	connection between thermoelectric pairs	240			°C
hot side plate				195	°C
cold side plate		-60			°C
assembly compression				0.3	MPa
RoHS	yes				

- Notes:
1. Maximum voltage at ΔT max and $T_c=27^\circ\text{C}$
 2. Maximum current to achieve ΔT max
 3. Measured by AC 4-terminal method at 25°C
 4. Maximum heat absorbed at cold side occurs at I_{max} , V_{max} , and $\Delta T=0^\circ\text{C}$
 5. Maximum temperature difference occurs at I_{max} , V_{max} , and $Q=0\text{ W}$ (ΔT max measured in a vacuum at 1.3 Pa)
 6. Tolerance for all thermal and electrical parameters is $\pm 10\%$.

MECHANICAL DRAWING

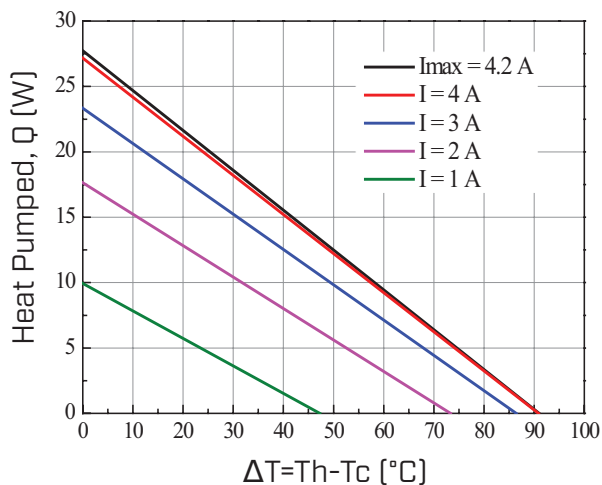
units: mm

	MATERIAL	PLATING
ceramic plate	96% Al_2O_3	
wire leads	UL3443 20 AWG	tin
sealer	704 silicone sealant (between cold and hot side plates)	
marking	P/N printed on cold side surface	

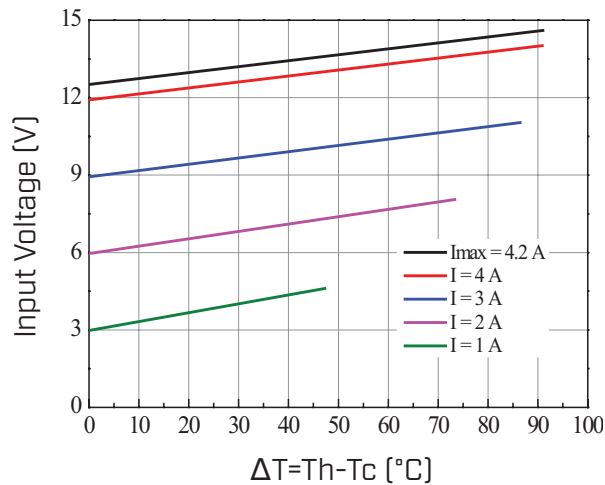


PERFORMANCE (Th=27°C)

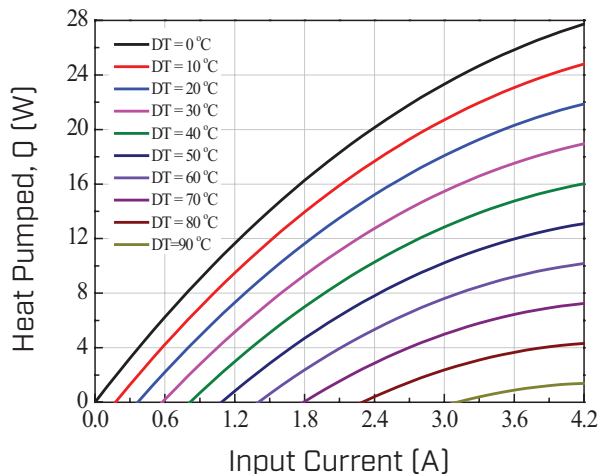
Heat Pumped, Q Vs. ΔT



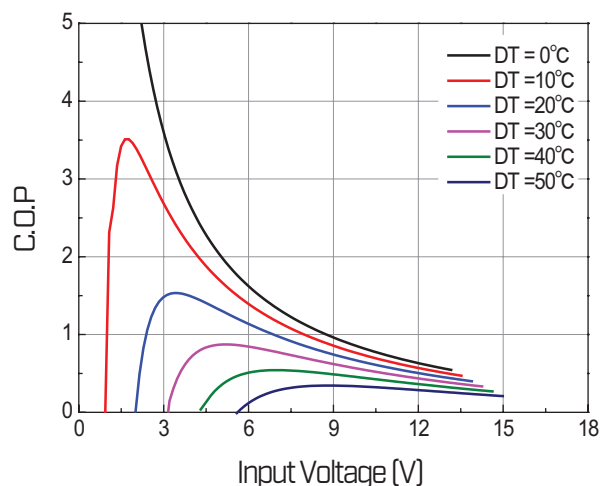
Input Voltage, V Vs. ΔT



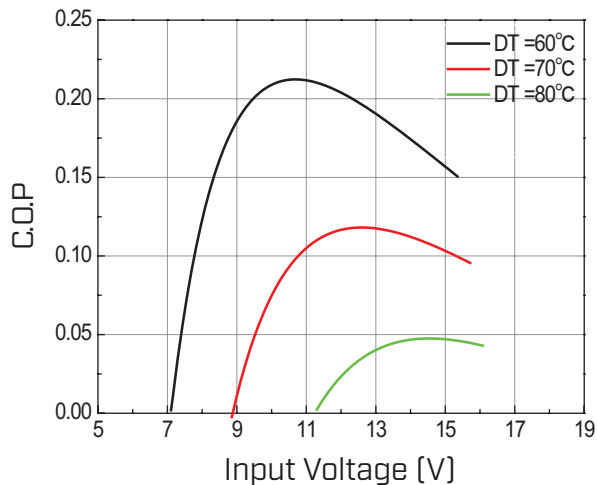
Heat Pumped, Q Vs. Input Current, I



COP Vs. Input Voltage, V (ΔT=0~50°C)

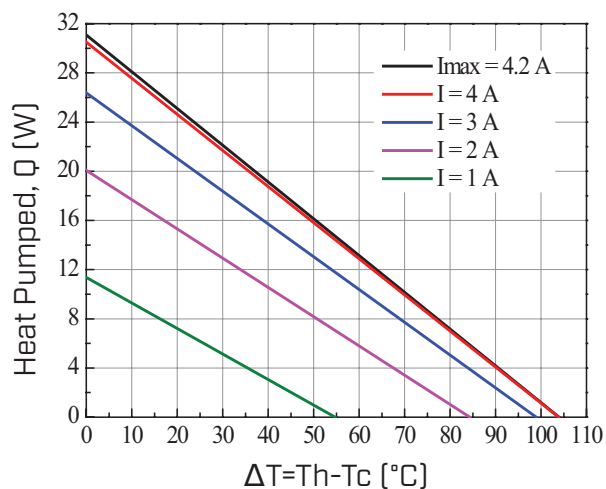


COP Vs. Input Voltage, V (ΔT=60~80°C)

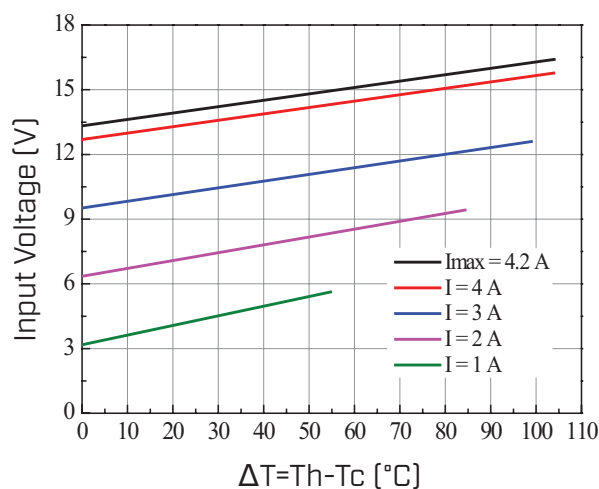


PERFORMANCE (Th=50°C)

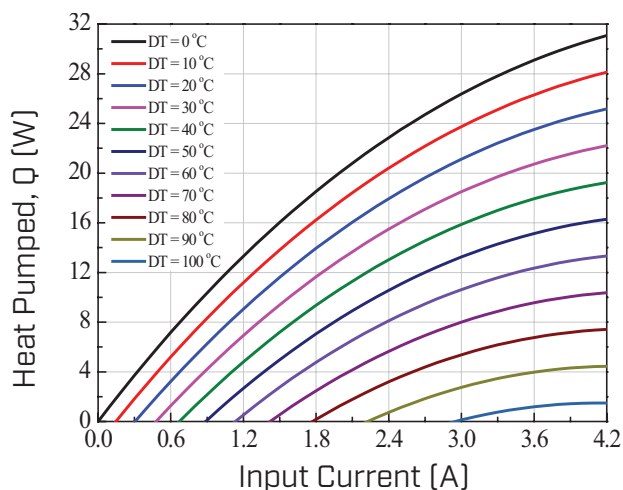
Heat Pumped, Q Vs. ΔT



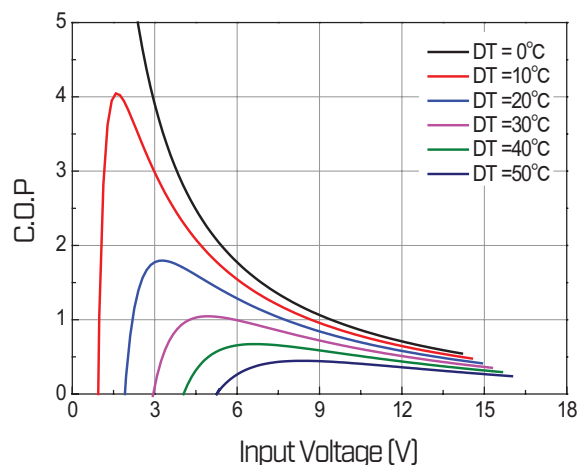
Input Voltage, V Vs. ΔT



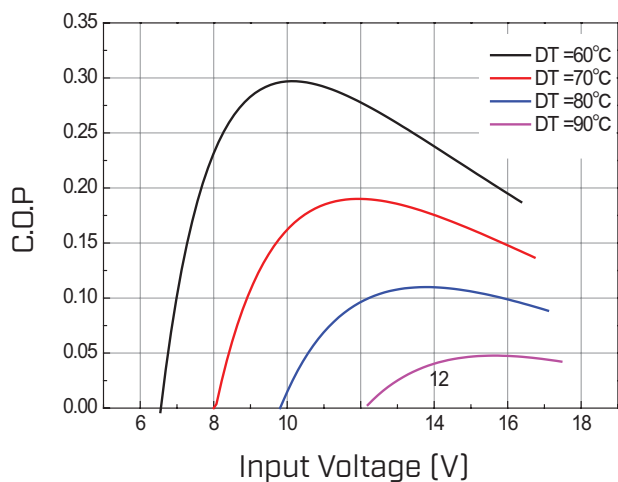
Heat Pumped, Q Vs. Input Current, I



COP Vs. Input Voltage, V [ΔT=0~50°C]



COP Vs. Input Voltage, V [ΔT=60~90°C]



REVISION HISTORY

rev.	description	date
1.0	initial release	12/09/2024

The revision history provided is for informational purposes only and is believed to be accurate.



Same Sky offers a one (1) year limited warranty. Complete warranty information is listed on our website.

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Same Sky products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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