



MODEL:

CP059-40635

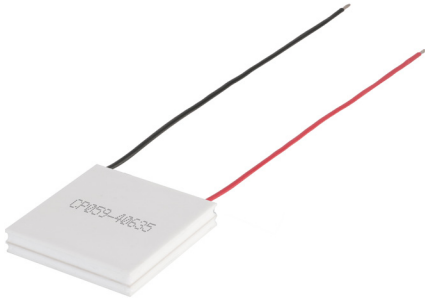
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DESCRIPTION:

PELTIER MODULE

FEATURES

- 2-stage TEC module
- wide  $\Delta T$  max
- precise temperature control
- silicone sealed
- solid state construction



SPECIFICATIONS

| parameter                        | conditions/description                  | min | typ  | max  | units    |
|----------------------------------|-----------------------------------------|-----|------|------|----------|
| input voltage <sup>1</sup>       | Th = 27°C                               |     |      | 14.6 | V        |
|                                  | Th = 50°C                               |     |      | 16.4 | V        |
| input current <sup>2</sup>       |                                         |     |      | 5.9  | A        |
| internal resistance <sup>3</sup> | Th = 27°C                               |     | 2.3  |      | $\Omega$ |
|                                  | Th = 50°C                               |     | 2.55 |      | $\Omega$ |
| Qmax <sup>4</sup>                | Th = 27°C                               |     |      | 36.0 | W        |
|                                  | Th = 50°C                               |     |      | 38.8 | W        |
| $\Delta T$ max <sup>5</sup>      | Th = 27°C                               |     |      | 90   | °C       |
|                                  | Th = 50°C                               |     |      | 100  | °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  $\Delta T$  max and  $T_h=27^\circ\text{C}$

2. Maximum current to achieve  $\Delta T$  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  $\Delta T=0^\circ\text{C}$

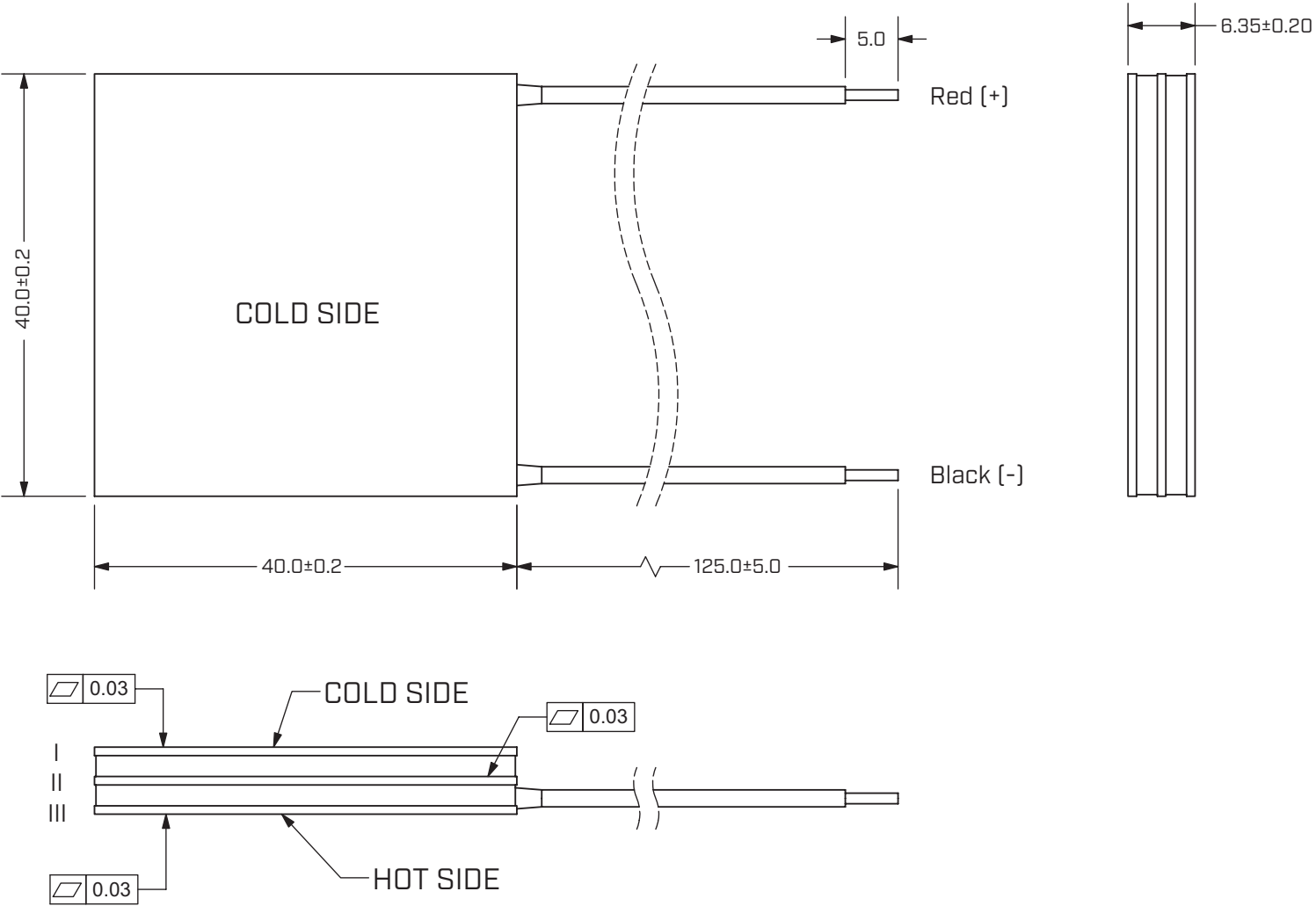
5. Maximum temperature difference occurs at  $I_{max}$ ,  $V_{max}$ , and  $Q=0$  W ( $\Delta T$  max measured in a vacuum at 1.3 Pa)

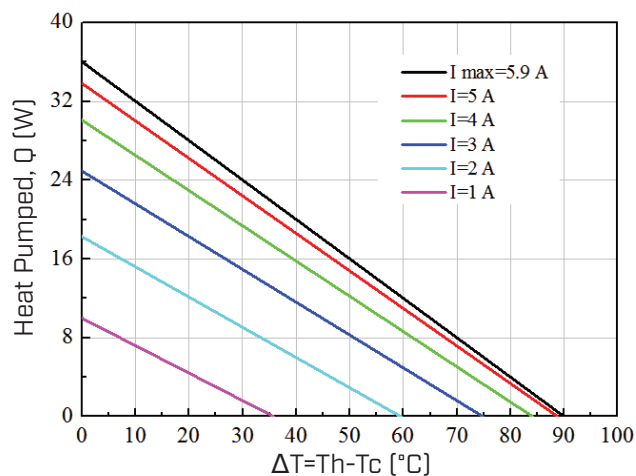
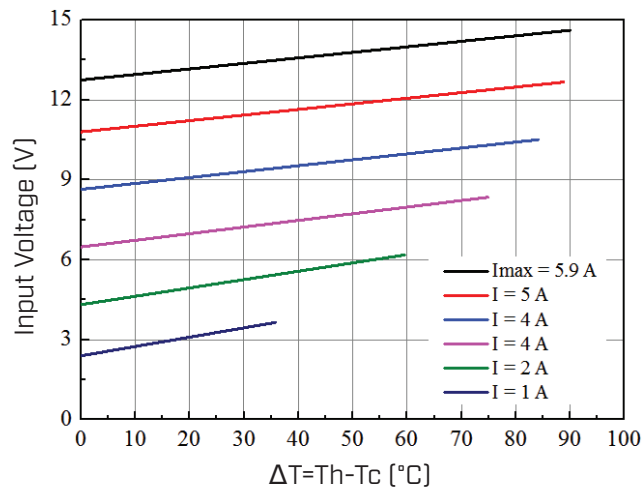
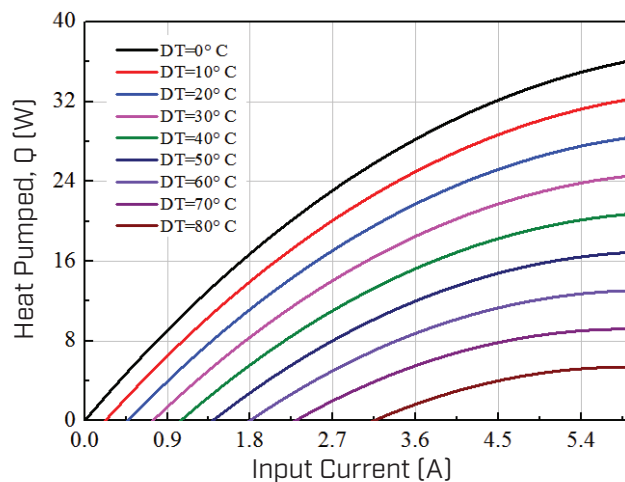
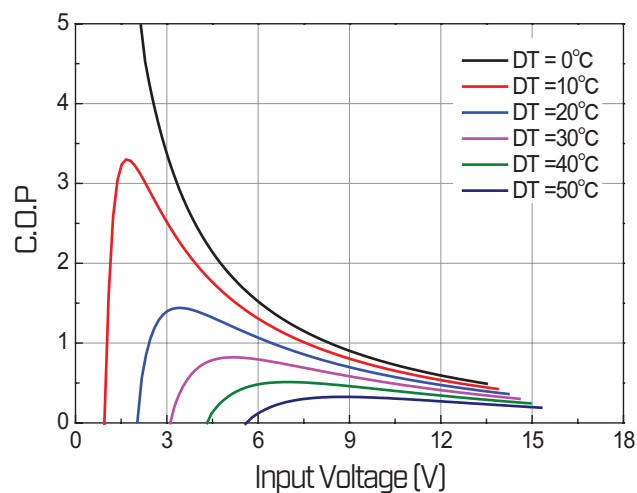
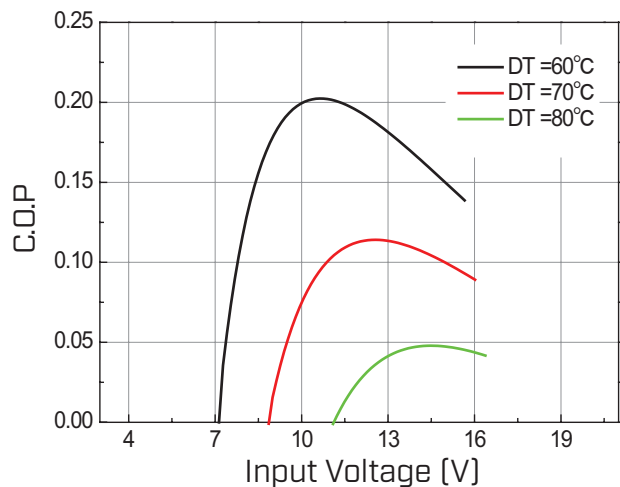
6. Tolerance for all thermal and electrical parameters is  $\pm 10\%$ .

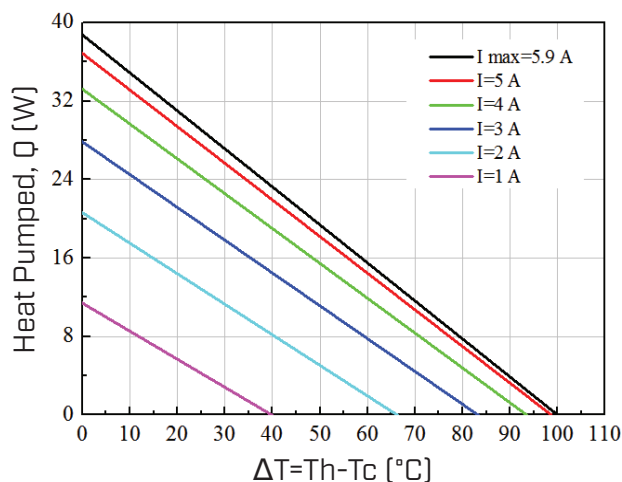
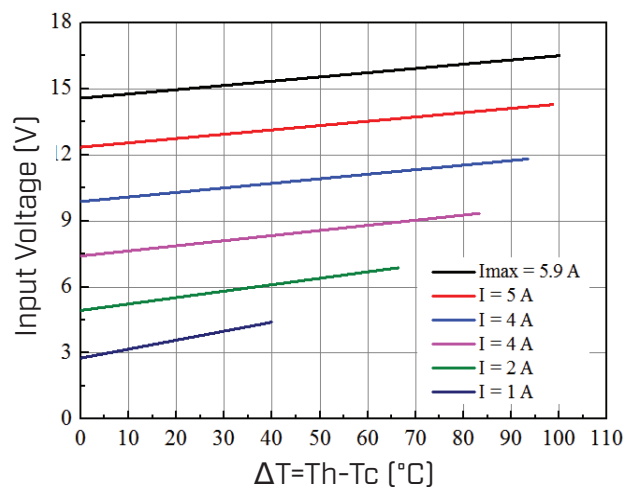
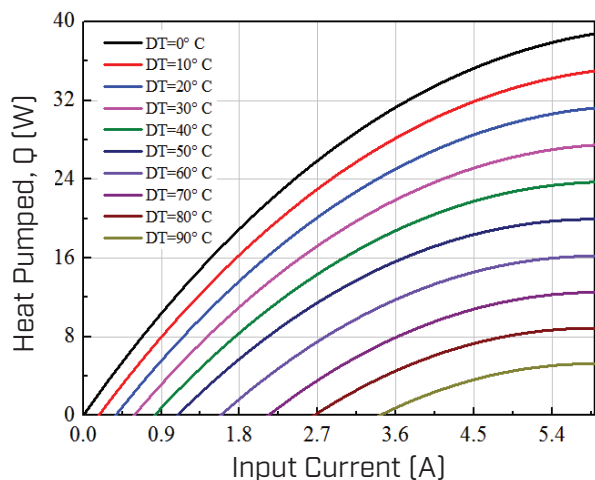
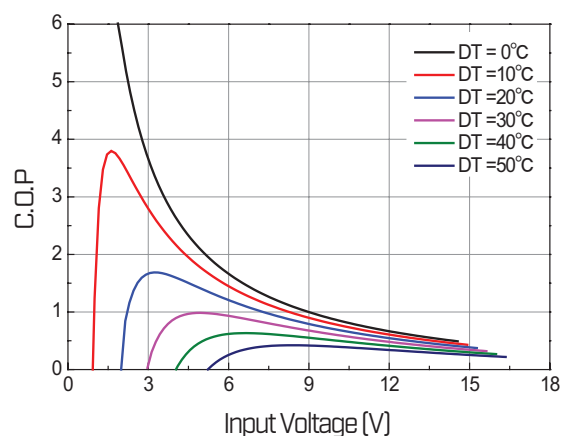
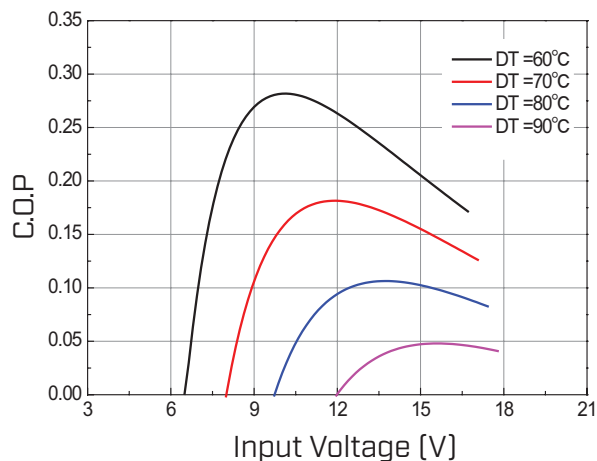
MECHANICAL DRAWING

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.  $\Delta T$** **Input Voltage, V Vs.  $\Delta T$** **Heat Pumped, Q Vs. Input Current, I****COP Vs. Input Voltage, V ( $\Delta T = 0 \sim 50^\circ\text{C}$ )****COP Vs. Input Voltage, V ( $\Delta T = 60 \sim 80^\circ\text{C}$ )**

**PERFORMANCE (Th=50°C)****Heat Pumped, Q Vs.  $\Delta T$** **Input Voltage, V Vs.  $\Delta T$** **Heat Pumped, Q Vs. Input Current, I****COP Vs. Input Voltage, V ( $\Delta T = 0 \sim 50^\circ$  C)****COP Vs. Input Voltage, V ( $\Delta T = 60 \sim 90^\circ$  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.



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