

**MODEL:** CP018-25405 | **DESCRIPTION:** PELTIER MODULE**FEATURES**

- silicon sealed
- wide  $\Delta T$  max
- precise temperature control
- maximum hot side temperature of 195°C
- solid state construction

**SPECIFICATIONS**

| parameter                        | conditions/description                  | min | typ  | max  | units    |
|----------------------------------|-----------------------------------------|-----|------|------|----------|
| input voltage <sup>1</sup>       | Th = 27°C                               |     |      | 15.9 | V        |
|                                  | Th = 50°C                               |     |      | 17.2 | V        |
| input current <sup>2</sup>       |                                         |     |      | 1.8  | A        |
| internal resistance <sup>3</sup> | Th = 27°C                               |     | 6.75 |      | $\Omega$ |
|                                  | Th = 50°C                               |     | 7.27 |      | $\Omega$ |
| Qmax <sup>4</sup>                | Th = 27°C                               |     |      | 18.1 | W        |
|                                  | Th = 50°C                               |     |      | 19.5 | W        |
| $\Delta T$ max <sup>5</sup>      | Th = 27°C                               |     |      | 70   | °C       |
|                                  | Th = 50°C                               |     |      | 79   | °C       |
| solder melting temperature       | connection between thermoelectric pairs | 240 |      |      | °C       |
| hot side plate                   |                                         |     |      | 195  | °C       |
| cold side plate                  |                                         | -60 |      |      | °C       |
| assembly compression             |                                         |     | 0.49 |      | MPa      |
| RoHS                             | yes                                     |     |      |      |          |

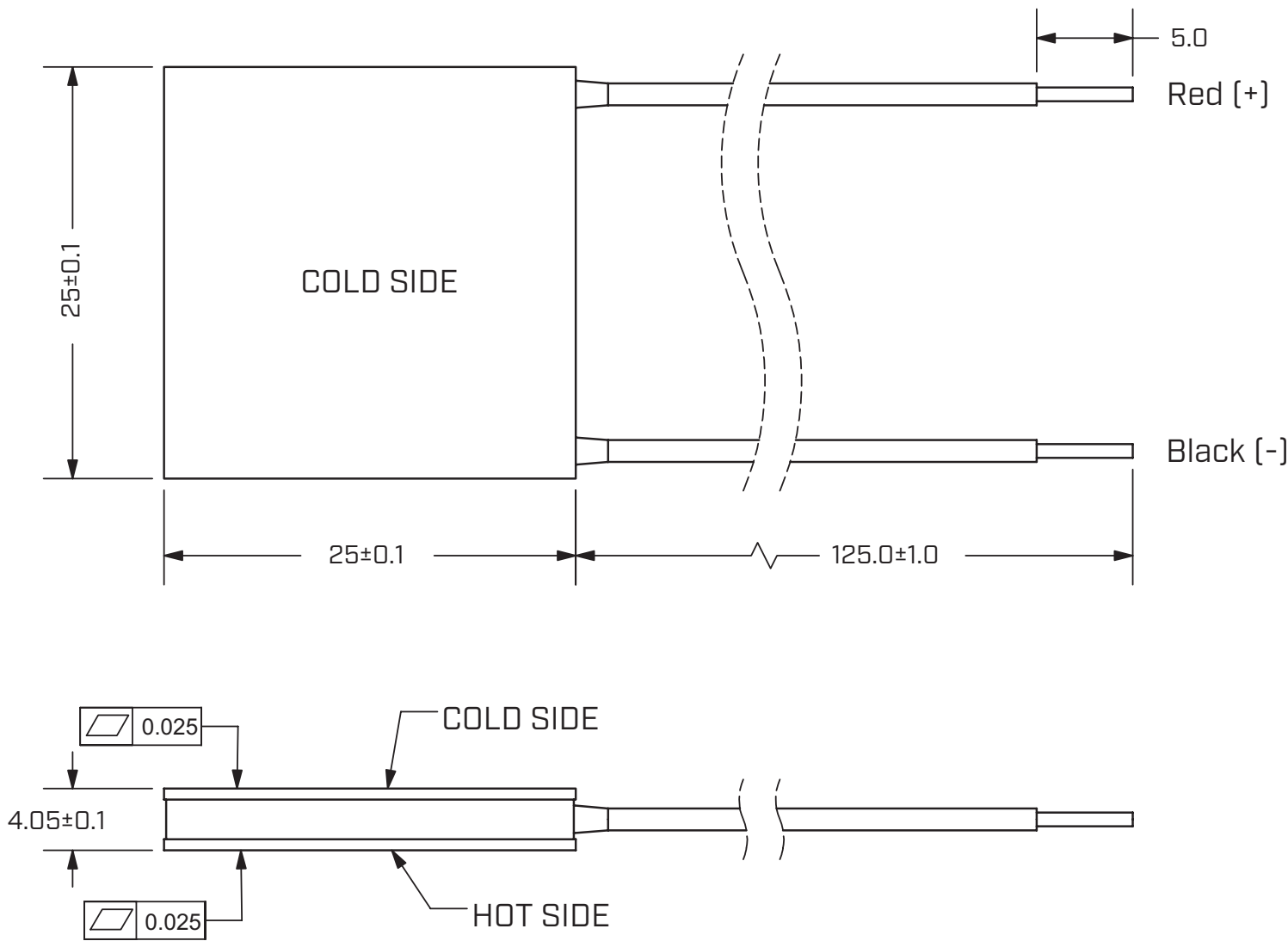
Notes:

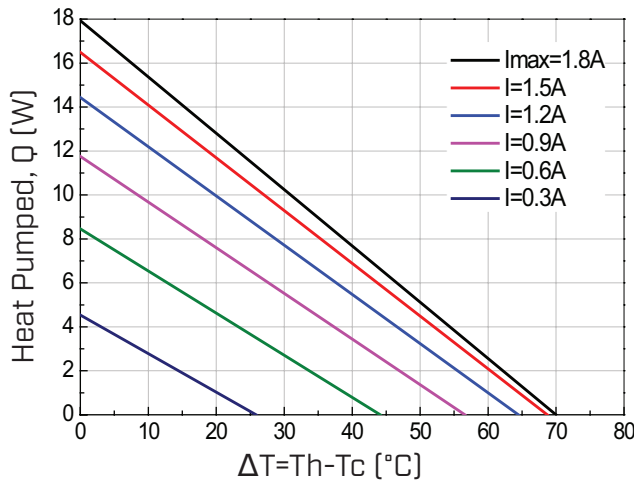
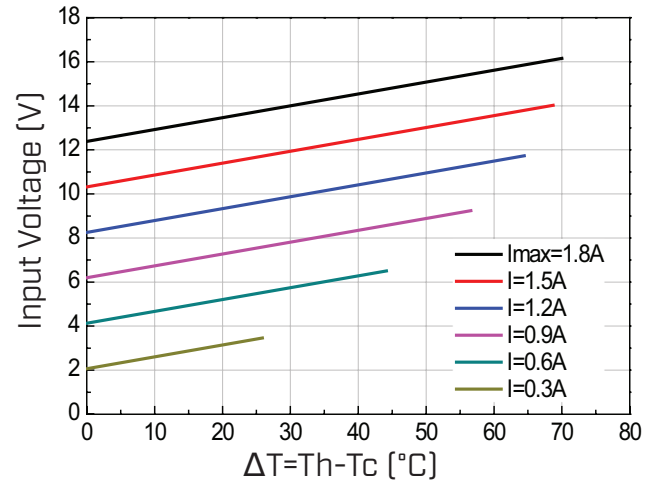
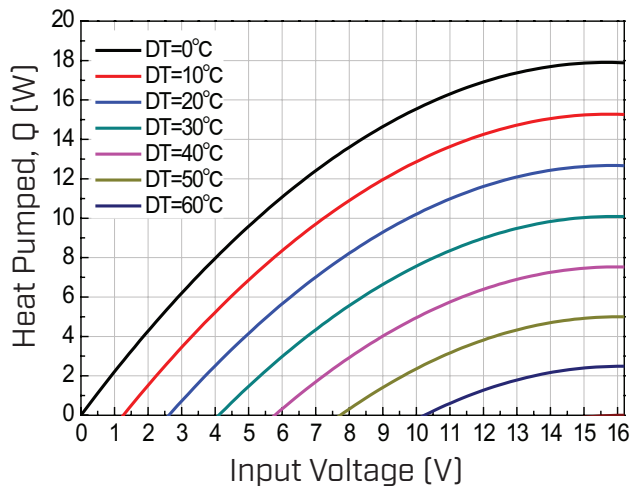
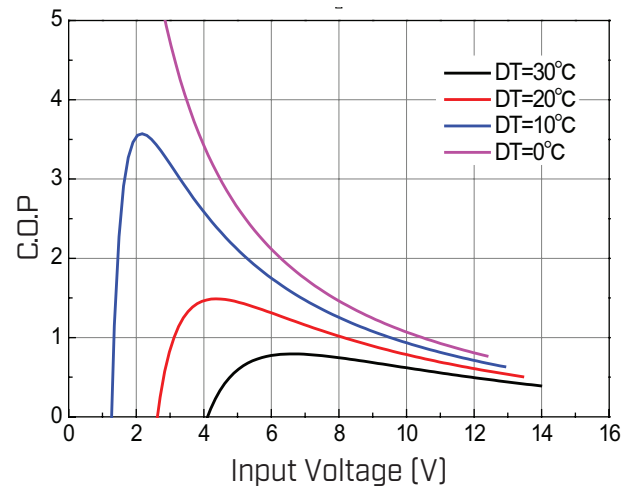
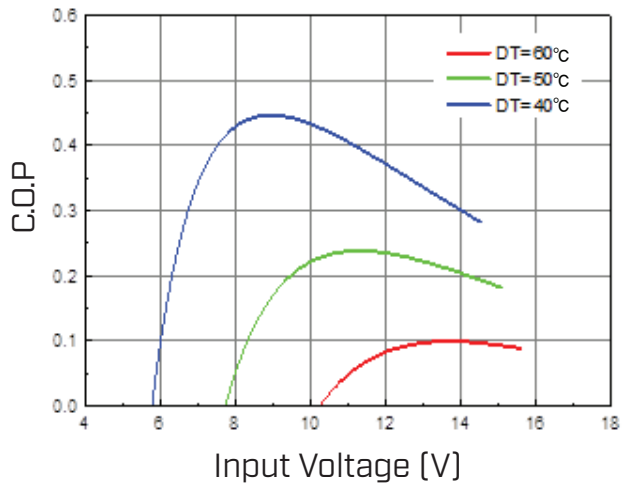
1. Maximum voltage at  $\Delta T$  max and  $T_h=27^\circ\text{C}$
2. Maximum current to achieve  $\Delta T$  max
3. Measured by AC 4-terminal method at 25°C
4. Maximum heat absorbed at cold side occurs at  $I_{\text{max}}$ ,  $V_{\text{max}}$ , and  $\Delta T=0^\circ\text{C}$
5. Maximum temperature difference occurs at  $I_{\text{max}}$ ,  $V_{\text{max}}$ , 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

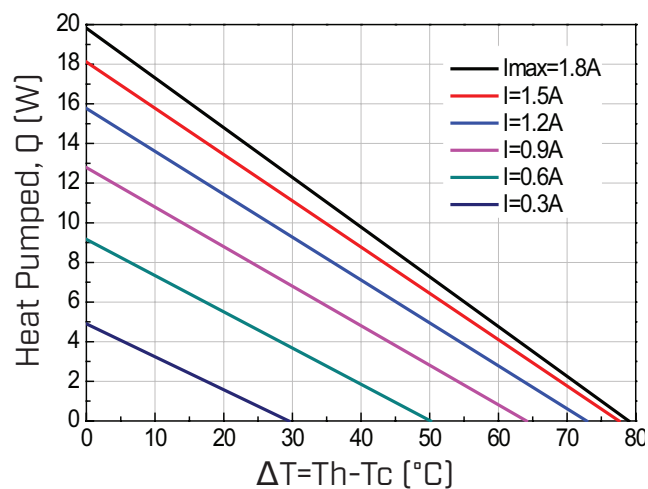
|               | MATERIAL                                                | PLATING |
|---------------|---------------------------------------------------------|---------|
| ceramic plate | 96% AL <sub>2</sub> O <sub>3</sub>                      |         |
| wire leads    | UL1726 24 AWG                                           | tin     |
| sealer        | 704 silicone sealant (between cold and hot side plates) |         |
| marking       | P/N printed on cold side surface                        |         |



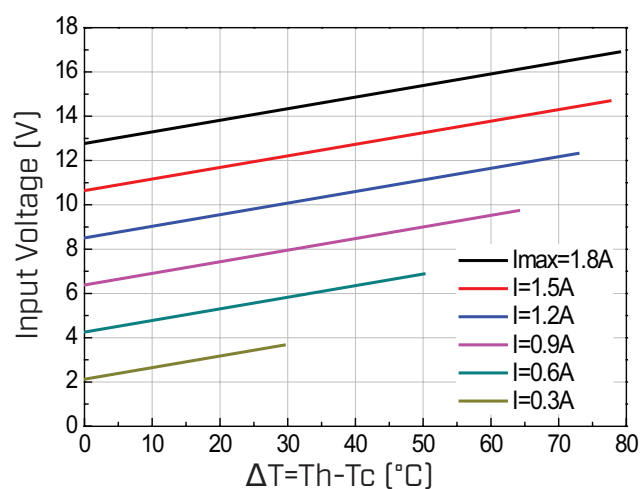
**PERFORMANCE (Th=27°C)****Heat Pumped, Q Vs.  $\Delta T$** **Input Voltage, V Vs.  $\Delta T$** **Heat Pumped, Q Vs. Input Voltage, V****COP Vs. Input Voltage, V ( $\Delta T=0\sim 30^\circ C$ )****COP Vs. Input Voltage, V ( $\Delta T=40\sim 60^\circ C$ )**

## PERFORMANCE (Th=50°C)

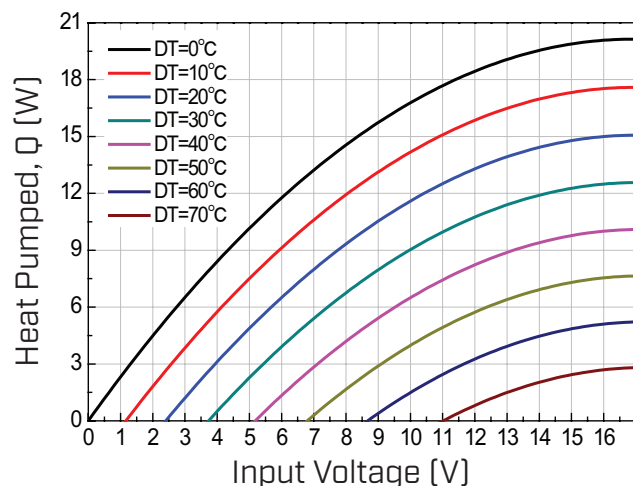
### Heat Pumped, Q Vs. $\Delta T$



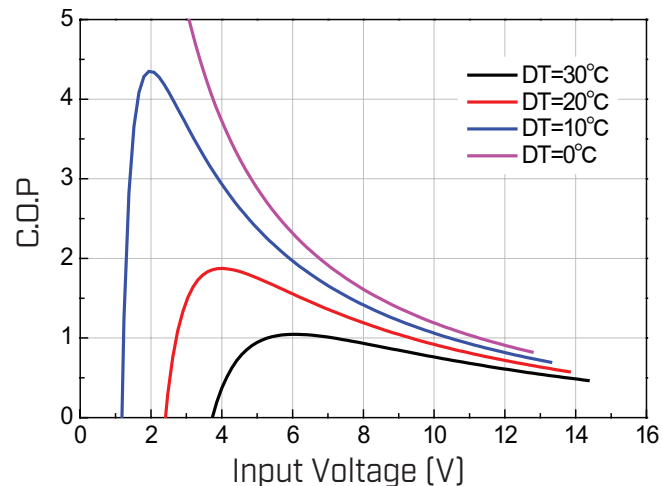
### Input Voltage, V Vs. $\Delta T$



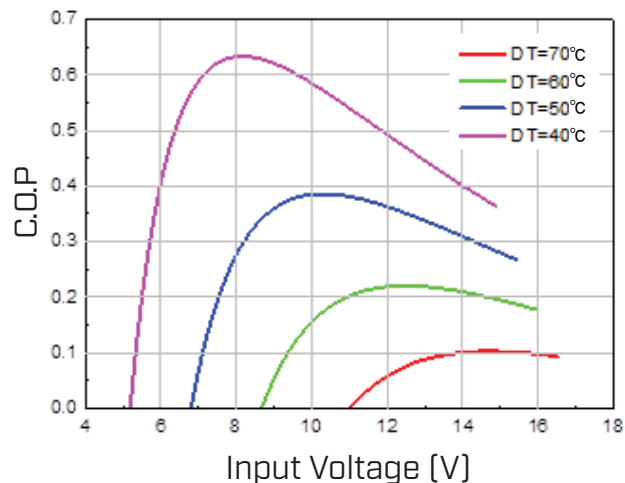
### Heat Pumped, Q Vs. Input Voltage, V



### COP Vs. Input Voltage, V ( $\Delta T=0\sim30^\circ C$ )



### COP Vs. Input Voltage, V ( $\Delta T=40\sim70^\circ C$ )



## REVISION HISTORY

| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 03/18/2025 |

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



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