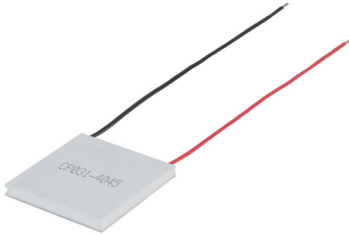




MODEL: CP031-4045 | DESCRIPTION: PELTIER MODULE

FEATURES

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



SPECIFICATIONS

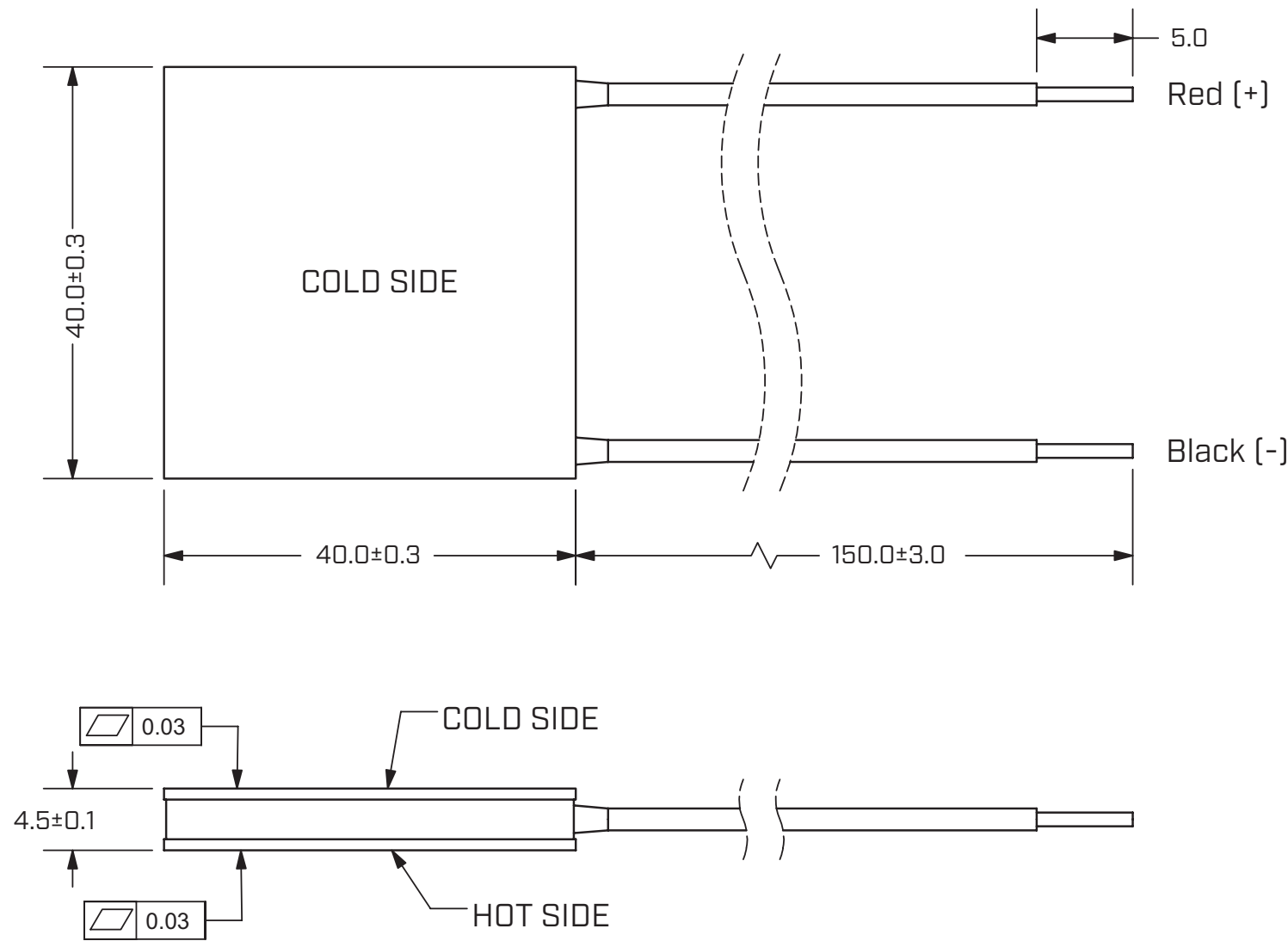
| parameter                        | conditions/description                  | min | typ  | max  | units |
|----------------------------------|-----------------------------------------|-----|------|------|-------|
| input voltage <sup>1</sup>       | Th = 27°C                               |     |      | 16   | V     |
|                                  | Th = 50°C                               |     |      | 16.6 | V     |
| input current <sup>2</sup>       |                                         |     |      | 3.1  | A     |
| internal resistance <sup>3</sup> | Th = 27°C                               |     | 4.05 |      | Ω     |
|                                  | Th = 50°C                               |     | 4.45 |      | Ω     |
| Qmax <sup>4</sup>                | Th = 27°C                               |     |      | 32.3 | W     |
|                                  | Th = 50°C                               |     |      | 36.5 | 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                                     |     |      |      |       |

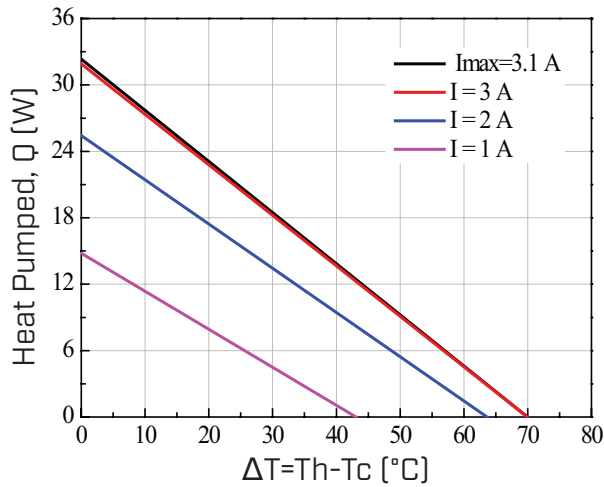
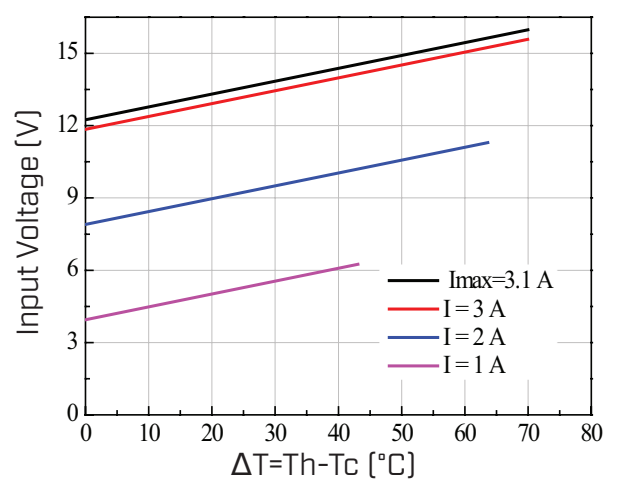
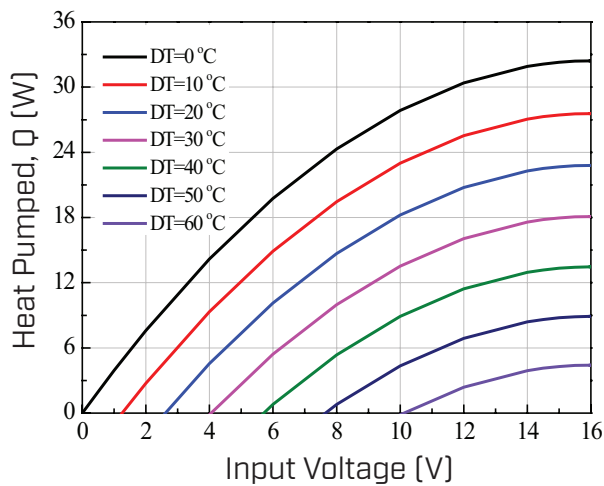
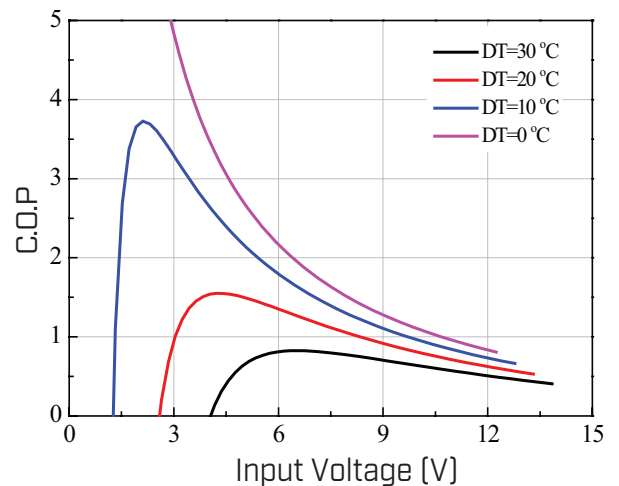
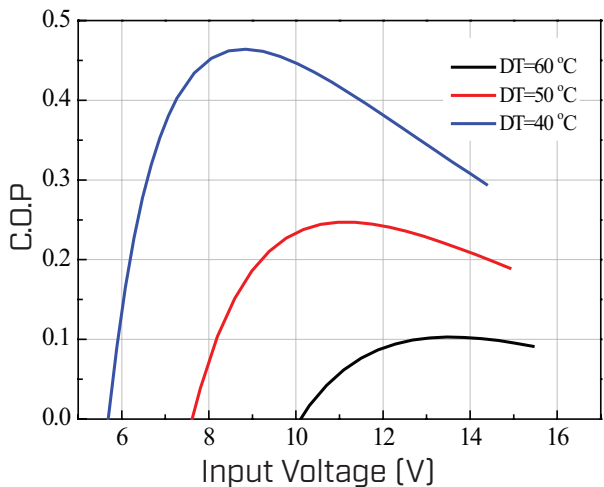
Notes: 1. Maximum voltage at  $\Delta T$  max and  $T_h=27^{\circ}\text{C}$   
2. Maximum current to achieve  $\Delta T$  max  
3. Measured by AC 4-terminal method at 25°C  
4. Maximum heat absorbed at cold side occurs at  $I_{max}$ ,  $V_{max}$ , and  $\Delta T=0^{\circ}\text{C}$   
5. Maximum temperature 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  $\pm 10\%$ .

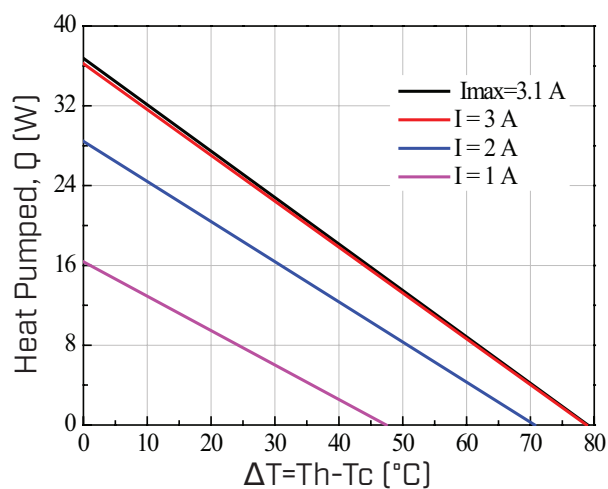
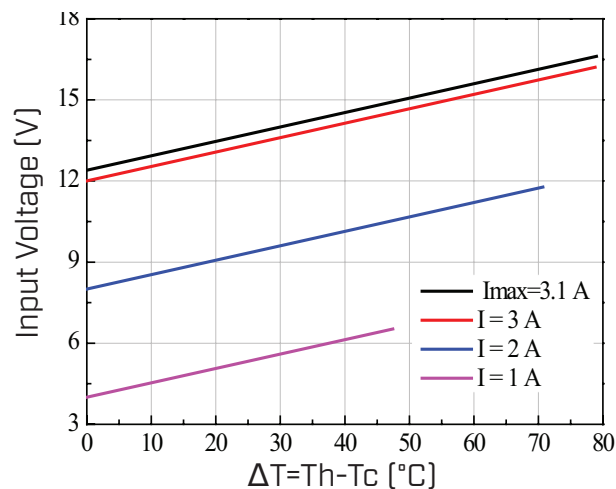
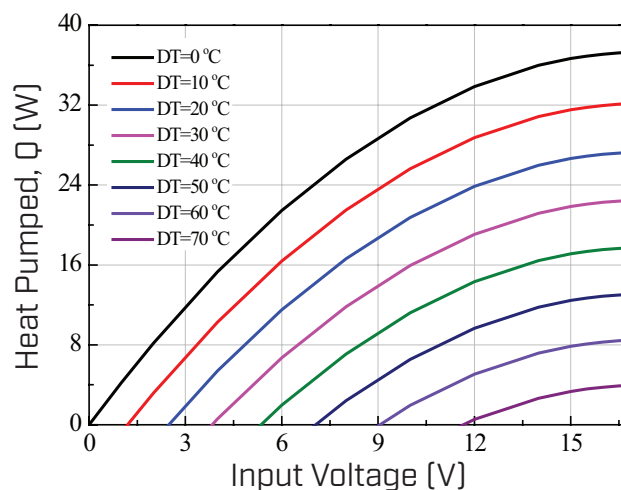
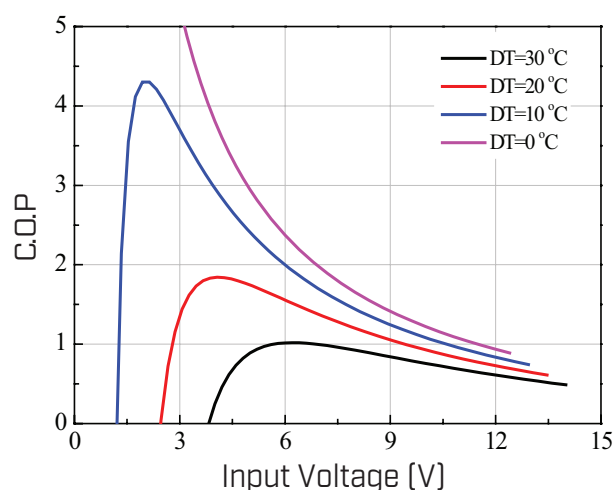
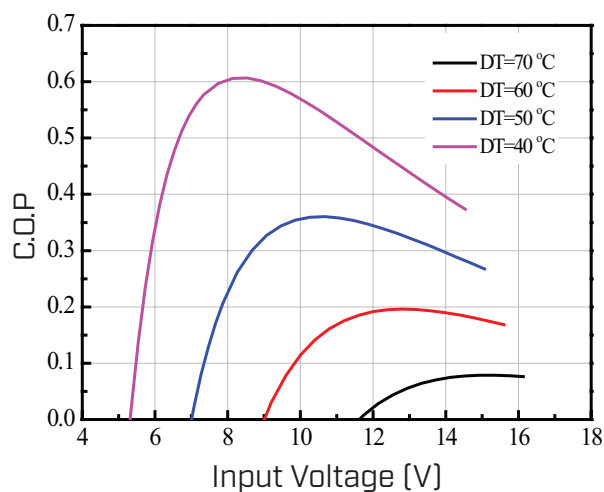
MECHANICAL DRAWING

units: mm

|               | MATERIAL                                                | PLATING |
|---------------|---------------------------------------------------------|---------|
| ceramic plate | 96% $\text{Al}_2\text{O}_3$                             |         |
| wire leads    | UL1726 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 Voltage, V****COP Vs. Input Voltage, V ( $\Delta T=0\sim30^\circ\text{C}$ )****COP Vs. Input Voltage, V ( $\Delta T=40\sim60^\circ\text{C}$ )**

**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 ( $\Delta T=0\sim30^\circ\text{C}$ )****COP Vs. Input Voltage, V ( $\Delta T=40\sim70^\circ\text{C}$ )**

REVISION HISTORY

| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 03/28/2025 |

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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