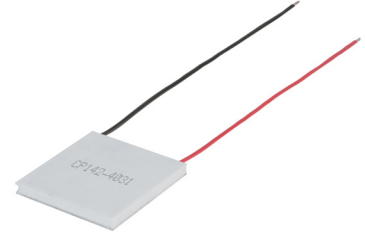


**MODEL:** CP142-4031 | **DESCRIPTION:** PELTIER MODULE**FEATURES**

- 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                               |     |      | 25.0  | V        |
|                                  | Th = 50°C                               |     |      | 26.9  | V        |
| input current <sup>2</sup>       |                                         |     |      | 14.2  | A        |
| internal resistance <sup>3</sup> | Th = 27°C                               |     | 1.35 |       | $\Omega$ |
|                                  | Th = 50°C                               |     | 1.45 |       | $\Omega$ |
| Qmax <sup>4</sup>                | Th = 27°C                               |     |      | 222.9 | W        |
|                                  | Th = 50°C                               |     |      | 243.5 | 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                                     |     |      |       |          |

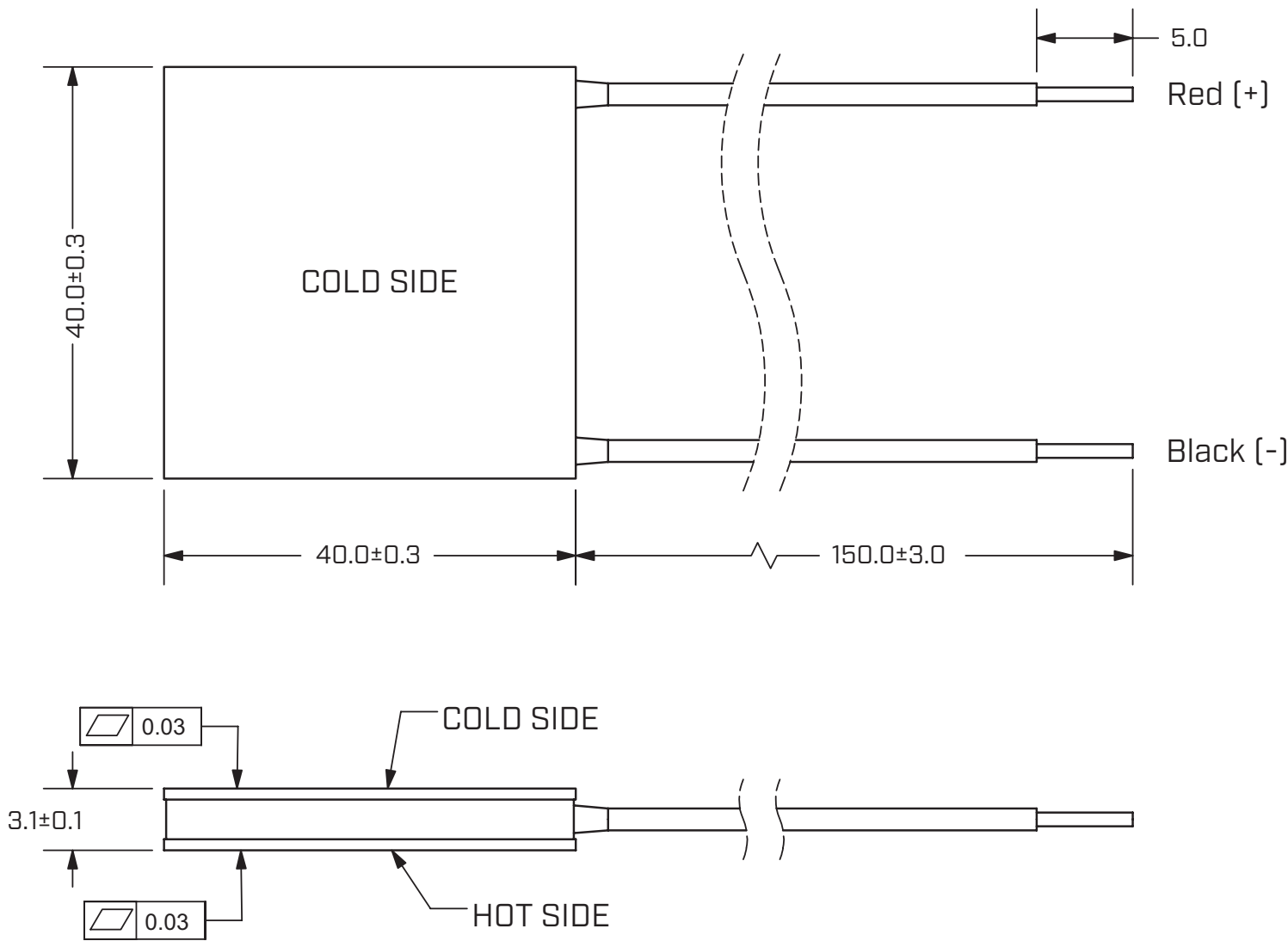
Notes:

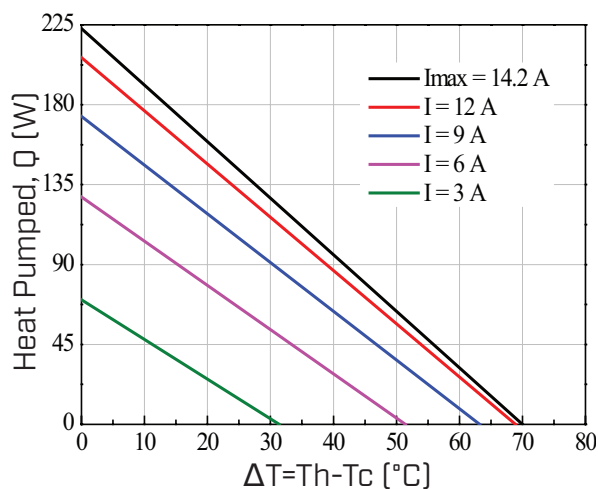
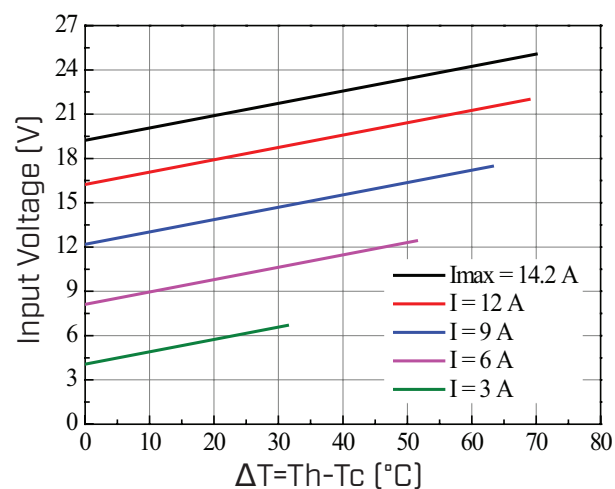
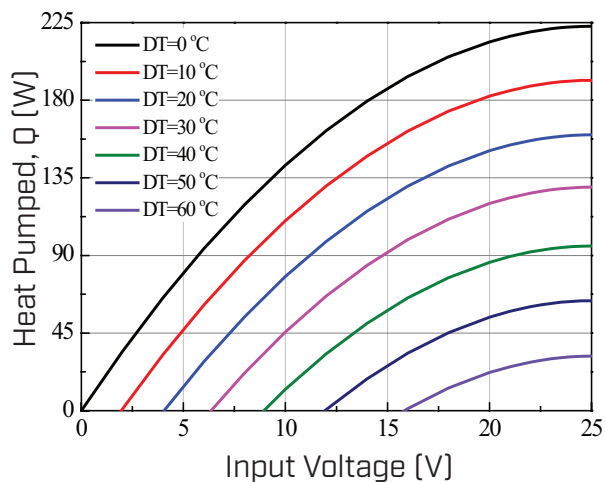
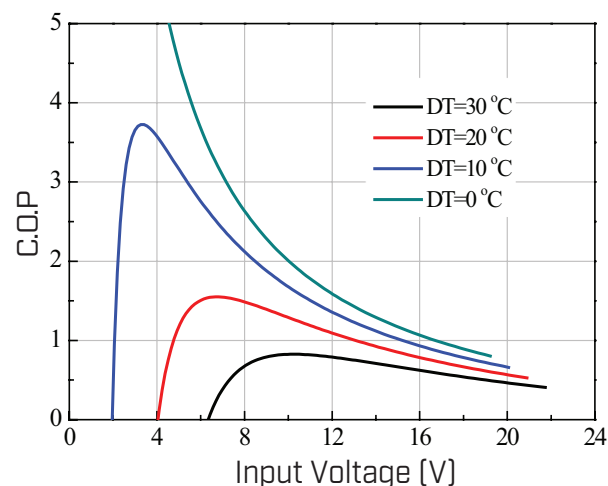
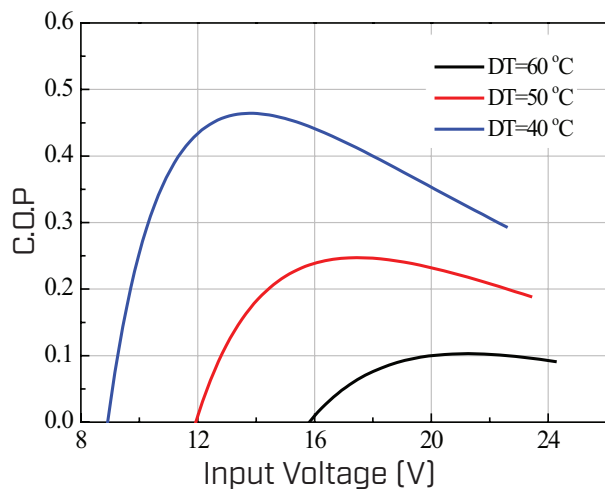
1. Maximum voltage at  $\Delta T$  max and  $T_h = 27^\circ\text{C}$
2. Maximum current to achieve  $\Delta T$  max
3. Measured by AC 4-terminal method at 25°C
4. Maximum heat absorbed at cold side occurs at  $I_{\text{max}}$ ,  $V_{\text{max}}$ , and  $\Delta T = 0^\circ\text{C}$
5. Maximum temperature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

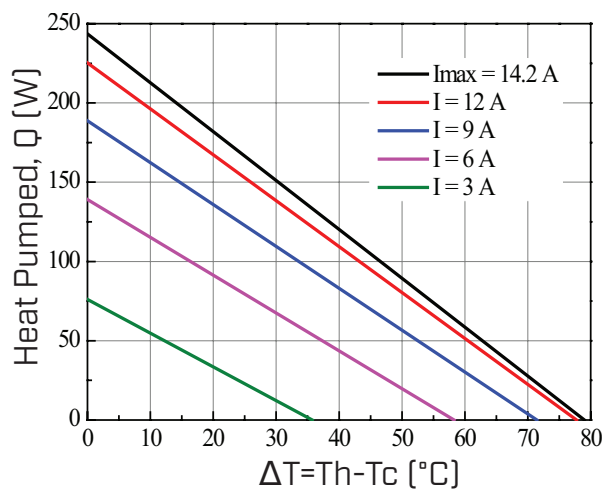
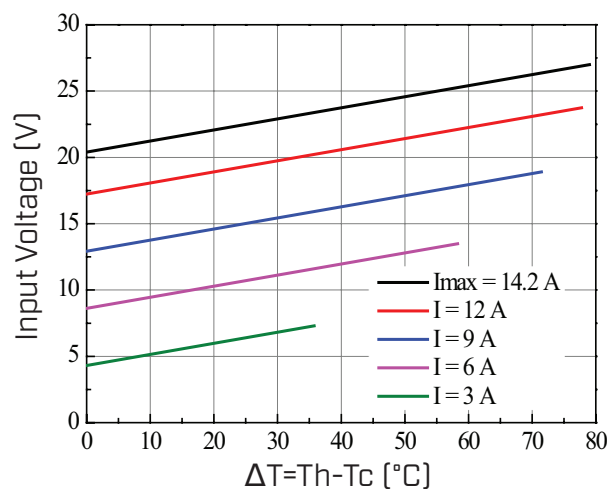
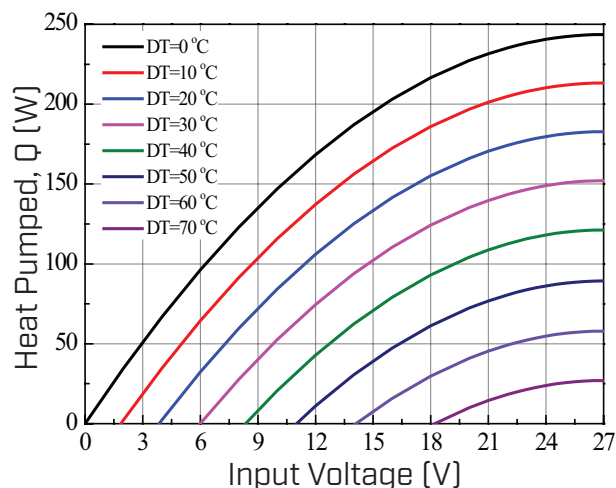
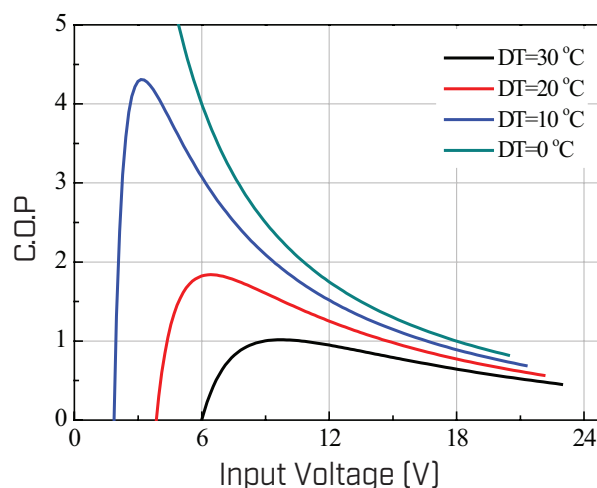
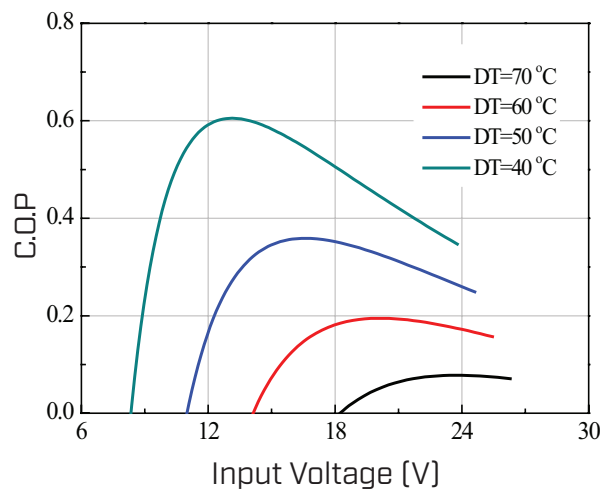
MECHANICAL DRAWING

units: mm

|               | MATERIAL                                                | PLATING |
|---------------|---------------------------------------------------------|---------|
| ceramic plate | 96% $\text{AL}_2\text{O}_3$                             |         |
| wire leads    | UL1726 18 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 ( $\Delta T = 0 \sim 30^\circ\text{C}$ )****COP Vs. Input Voltage, V ( $\Delta T = 40 \sim 60^\circ\text{C}$ )**

**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 ( $\Delta T = 0 \sim 30^\circ\text{C}$ )****COP Vs. Input Voltage, V ( $\Delta T = 40 \sim 70^\circ\text{C}$ )**

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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