

SPECIFICATION

Product : Thermoelectric module

Part Number : HPE-200-14-11

1 . Scope

- 1—1 This specification is applied to Multicomp thermoelectric modules
 1—2 Revision of these specifications is carried out after consent.

2 . Specification

2 - 1 Parameters

Parameters			Remarks
Internal resistance	2.40 Ω $\pm$ 10%		Note-1
I _{max.}	8.5 A		Note-2
V _{max.}	24.6 V		Note-3
	Th=25°C		
Q _{max.}	127.5 W		Note-4
Δ T _{max.}	71°C		Note-5
solder melting point	138 °C		Note-6
Maximum. compress.	1MPa		Note-7

Note-1 Measured by AC 4-terminal method at 25°C.

Note-2 Maximum current at Δ T_{max.}

Note-3 Maximum voltage at Δ T_{max.}

Note-4 Maximum cooling capacity at I_{max.}, V_{max.} and Δ T = 0°C.

Note-5 Maximum temperature difference at I_{max.}, V_{max.} and Q = 0W.

(Maximum parameters are measured in a vacuum 1.3P)

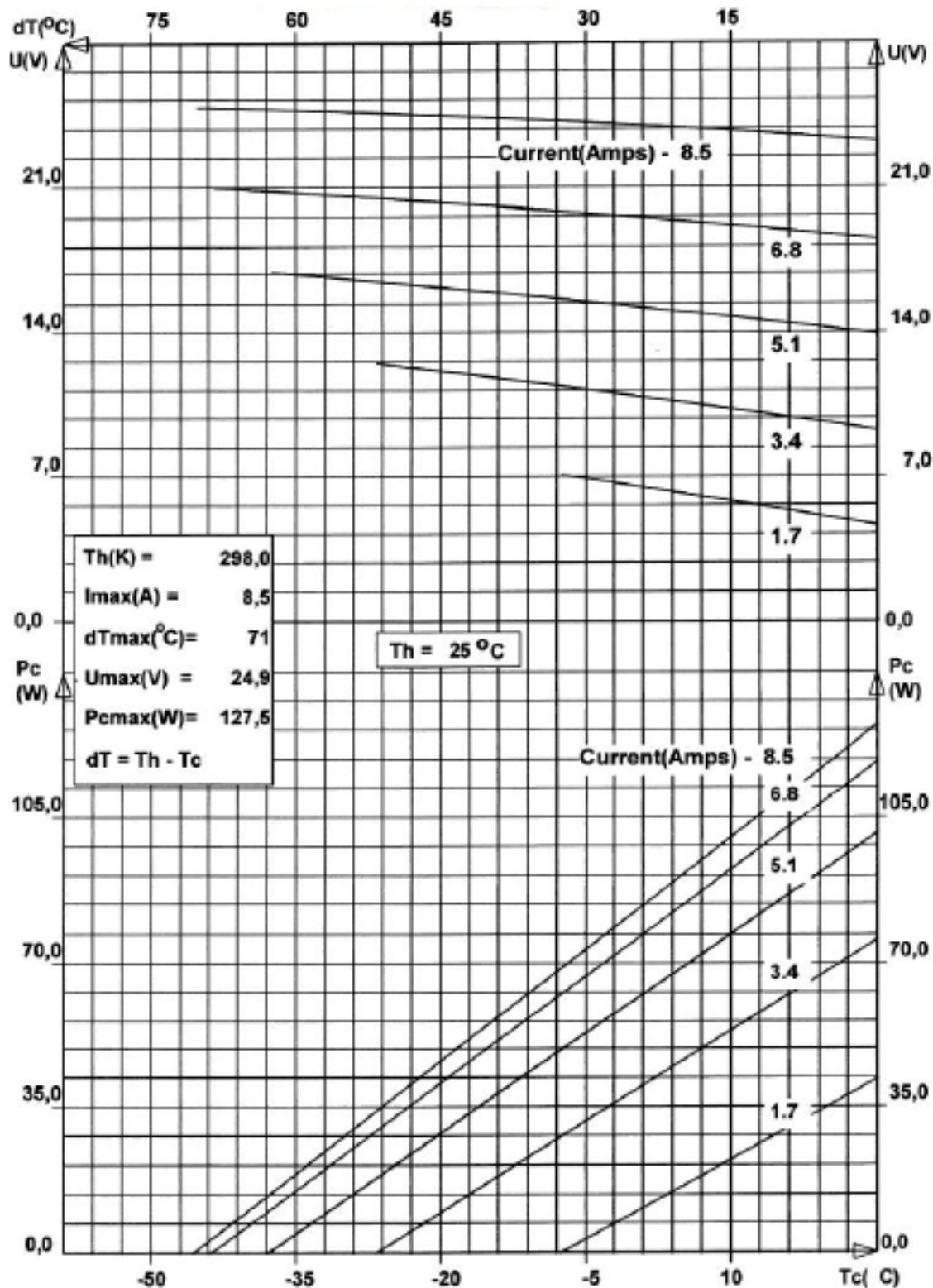
Note-6 The solder melting point of thermoelectric module

Note-7 Recommended maximum compression (not destruction limit)

2 -2 Recommendations:

- high cooling capacity from a small surface and long lifetime in power cycling applications with change of current polarity
- operation temperature up to 90°C for long lifetime; up to 110 degC for short periods
- with operation current close to 0.5 I_{max} extremely high COP (coefficient of performance possible)
- preferable application; high cooling capacity at high temperatures / cycling

2 - 3 Performance Graph (298K)



The figure consists of two vertically aligned graphs sharing a common x-axis representing the cold junction temperature T_c in $^{\circ}\text{C}$, ranging from -25 to 40.

Top Graph: The y-axis represents the temperature difference dT in $^{\circ}\text{C}$ (left scale, 0.0 to 37.5) and the voltage U in V (right scale, 0.0 to 37.5). It shows five curves for different currents: 1.7, 3.4, 5.1, 6.8, and 8.5 A. The curves show that dT and U decrease as the current increases. A box in the center indicates $T_h = 50^{\circ}\text{C}$.

Bottom Graph: The y-axis represents the power P_c in W (right scale, 0.0 to 180.0). It shows five curves for the same currents as the top graph. The power P_c increases with T_c and decreases with increasing current.

Parameters and Formulas:

- $T_h(\text{K}) = 323,0$
- $I_{\text{max}}(\text{A}) = 8,5$
- $dT_{\text{max}}(^{\circ}\text{C}) = 81$
- $U_{\text{max}}(\text{V}) = 40,9$
- $P_{c\text{max}}(\text{W}) = 200,3$
- $dT = T_h - T_c$