

NEW!



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HIGH RELIABLE THERMOELECTRIC COOLING MODULES



- Information is given on the increased reliability Peltier modules Altec-028, Altec-029.
- The modules are intended for providing the necessary temperature modes in various-purpose cooling products.
- The modules are a refinement of the well-known and widely used module with the size of ceramic plates 40x40 mm
- The modules offer improved reliability as compared to conventional modules 40x40 mm owing to special electric connection of elements. The reliability increase is from 80 to 350 times.
- The modules have about the same price as the conventional modules 40x40 mm.
- The modules have been created on the basis of recent technological achievements of Institute of Thermoelectricity,
- The modules have been designed on the basis of up-to-date theory of thermoelectric modules reliability developed by Institute of Thermoelectricity.
- In the design of the modules use was made of the results of extensive reliability tests of modules carried out by Institute of thermoelectricity during recent 25 years.
- The technologies of Institute of thermoelectricity have been marked by the International Golden Prize "For Technology and Quality".
- The modules utilize high-quality ceramic plates made of Al_2O_3 .
- The modules utilize connecting copper plates with anti-diffusion coatings.
- The modules utilize high-quality home-made thermoelectric materials based on $Bi-Te-Se-Sb$, to provide a high thermoelectric figure of merit combined with increased mechanical strength of material.
- The modules utilize efficient multi-layer anti-diffusion barriers 25 μm thick, to provide high reliability and long service life,
- The modules utilize plastic connecting solders of controlled thickness, to provide high module resistance to cyclic temperature effects.
- The modules utilize highly efficient silicone sealants that were successfully tested under conditions of outer space, increased humidity, etc.

- The basic module parameters

Module type	Dimensions, mm			U_{max}, V	I_{max}, A	Q_0, W	$\Delta T_{max}, K$
	a	b	c				
Altec-028	40	40	3,8	7,4	12	54,5	72±2
Altec-029	40	40	3,8	3,6	24	53,7	72±2

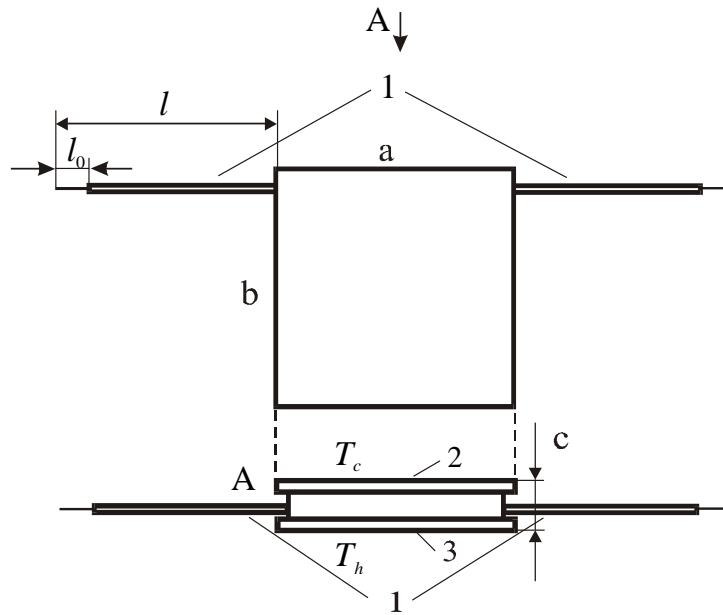


Fig.1. Diagram of thermoelectric module

1-electric conductors; 2-cold ceramics; 3-hot ceramics;

T_c -temperature of external surface of ceramic plate without conductors l ;

T_h – temperature of external surface of ceramic plate with conductors l ;

- U_{max} - maximum operating pressure,
 - I_{max} - maximum operating current,
 - Q_0 - maximum cooling power at 300 K,
 - ΔT_{max} – maximum temperature difference at hot ceramics surface temperature $T_h = 300 K$,
 - l - the length of conductors – 150mm,
 - l_0 - the length of the non-insulated part of conductors - 10 mm,
 - operating temperature range 200 - 420 K.
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- Additional module parameters and information on the reliability are sent at the customers' request.
 - The characteristics of modules are attached.
 - The prices for modules are sent at the customer's request.

Orders for modules and additional information:

E-mail: ite@cv.ukrtel.net

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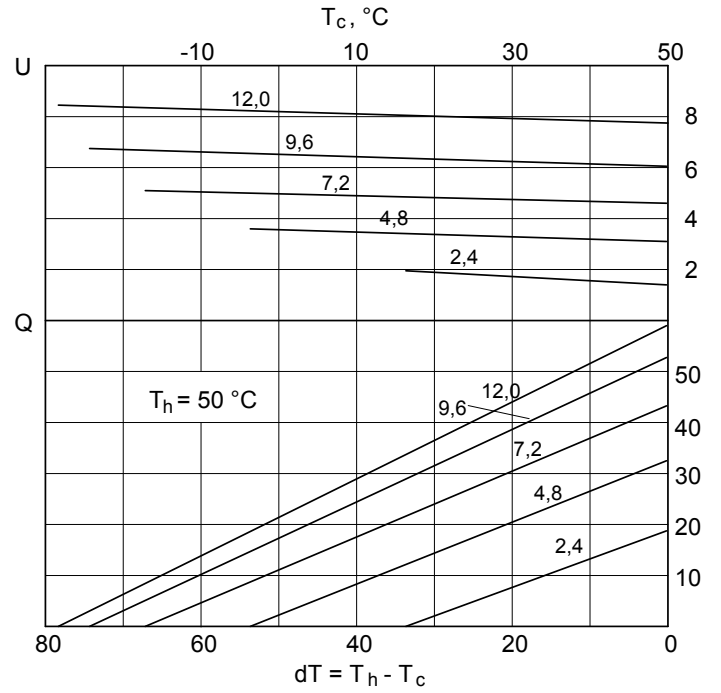
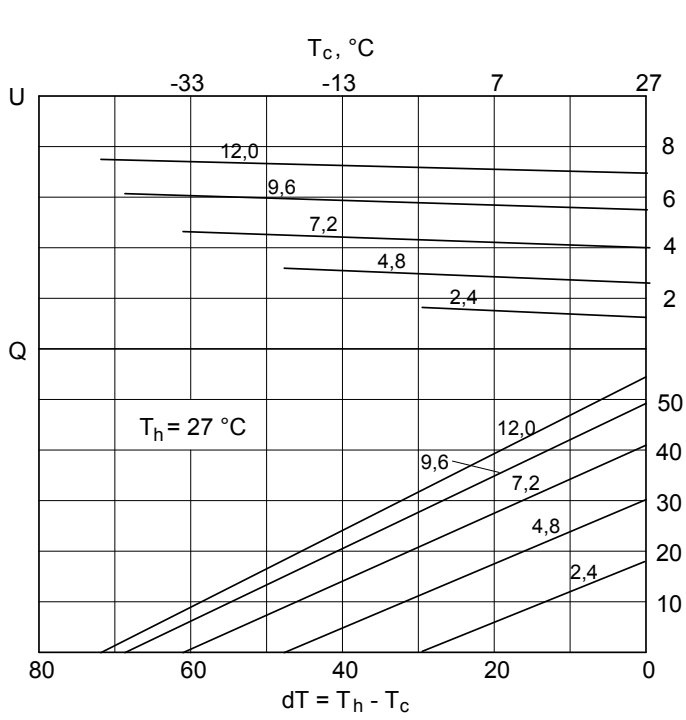
Additional information can be found on the page in Internet

<http://.ite.cv.ukrtel.net/altec>

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Characteristics of thermoelectric module Altec-028



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