

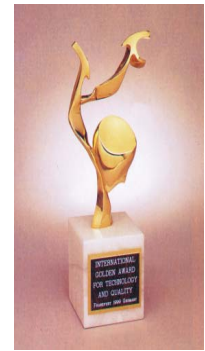
3-FOLD REDUCTION OF COLD COST!

NEW!



Box 86, General Post Office
Chernivtsi, 58002, Ukraine
Fax:(380-3722)-41917, 41909
Phone:(380-3722)-41909, 44422,
E-mail:altec@ite.cv.ua

THERMOELECTRIC COOLING MODULES OF INCREASED COOLING POWER 40 x 40 mm



- Information is given on Peltier modules of increased cooling power: Altec-027, Altec-031, Altec-033, Altec-035, Altec-036.
- The module is intended for creation of required temperature modes in different products with thermoelectric cooling, thermostating or conditioning.
- Commonly used module for development of household appliances, conditioners, medical equipment, measuring instruments, metrology, other goods and devices.
- The module is a modification of a known and widely used module with ceramic plates of 40x40 mm and with 127 couples of legs.
- Compared to standard modules 40x40mm, the modules offer increased cooling power. For example, in cooling power one Altec-031 module replaces two standard modules 40 x 40mm, and one Altec-035 module replaces three standard modules 40x40mm. In this case the price of Altec-035 module is nearly equal to the price of standard module 40x40mm. Therefore, using module Altec-035, the customer actually can have 3-fold reduction of module cost. The information on modules is given in the table.
- The module offers improved characteristics of reliability and stability to various effects.
- The module has been designed on the basis of the latest technological achievements of the Institute of Thermoelectricity, National Academy of Science, Ukraine.
- In designing the module use has been made of the latest theory of thermoelectric modules reliability developed in the Institute of Thermoelectricity National Academy of Science, Ukraine.
- In designing the module use has been made of the results of extensive reliability tests of modules conducted by the Institute of Thermoelectricity, National Academy of Science, Ukraine, during the recent 25 years.
- Technologies of the Institute of Thermoelectricity were marked with the "International Golden Award for Technology and Quality".
- The module utilizes connecting copper plates with anti-diffusion coatings Al_2O_3 .
- The module utilizes connecting copper plates with anti-diffusion coatings.
- The module utilizes high quality thermoelectric materials of own production based on *Bi-Te-Se-Sb*. The materials have small-angle controllable unit crystal disorientation, to provide high figure of merit combined with increased mechanical strength.
- The module utilizes multi-layer anti-diffusion barriers 25 μm thick, to provide high reliability and long service life.

- The modules utilize plastic connecting solders with controlled thickness, to provide high resistance to cyclic temperature effects.

- The modules utilize efficient technologies for leg material joining with anti-diffusion barriers. The engagement strength reaches the leg material strength.

- The modules utilize highly efficient silicone sealants which have undergone multi-year tests under conditions of outer space, elevated humidity, etc.

- According to customer's wish, the outside surfaces of ceramic plates may have metallization and be coated with solder. In this case the modules can be attached to cooled objects by soldering. With such attachment heat losses because of thermal resistances at points of modules attachment become negligible.

- Basic parameters of modules:

Modules type	Dimensions, mm			U_{max} , V	I_{max} , A	Q_o , W	ΔT_{max} , K
	a	b	c				
Altec-027	40	40	3.7	15	8.6	75	71 ± 2
Altec-031	40	40	4.3	15	11.6	100	70 ± 2
Altec-033	40	40	4.6	15	15.0	135	69 ± 2
Altec-035	40	40	4.4	15	16.6	150	68 ± 2
Altec-036	40	40	4.2	15	20.0	180	66 ± 2

- dimensions: a = 40 mm; b = 40 mm; c = 3.8 mm (See Fig. 1);
- max. operating voltage $U_{max}=15$ V;
- max. operating current $I_{max}=11.6$ A;
- operating temperature range 200-420 K;
- max. cooling power at 300 K $Q_o=100$ W;
- max. temperature difference at ceramic hot side temperature $T_h=300$ K is $\Delta T_{max} = 70 \pm 2$ K;
- input leads length $l = 150$ mm;
- length of leads without insulation $l_0 = 10$ mm

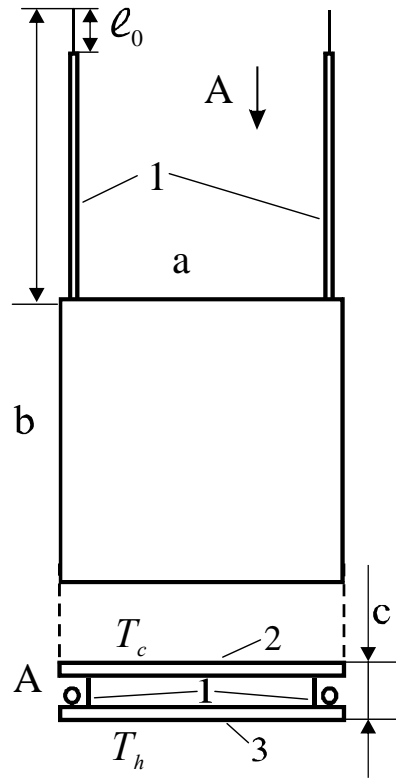


Fig.1. Diagram of a thermoelectric module

1 – electric leads; 2 – cold ceramics; 3 – hot ceramics; T_c – temperature of ceramic plate outside surface without leads 1; T_h - temperature of ceramic plate outside surface with leads 1.

- Additional module parameters and information about reabiliti is presented at customer's request.
- Prices for a module depending on the order volume are sent at customer's request.

Orders for modules and additional information:

E-mail: ite@cv.ukrtel.net,

Fax: (380-3722) - 41917,

Phone: (380-3722)-41909, 44422,

Mail: General Post Office, box 86, Chernivtsi, 58002, Ukraine.

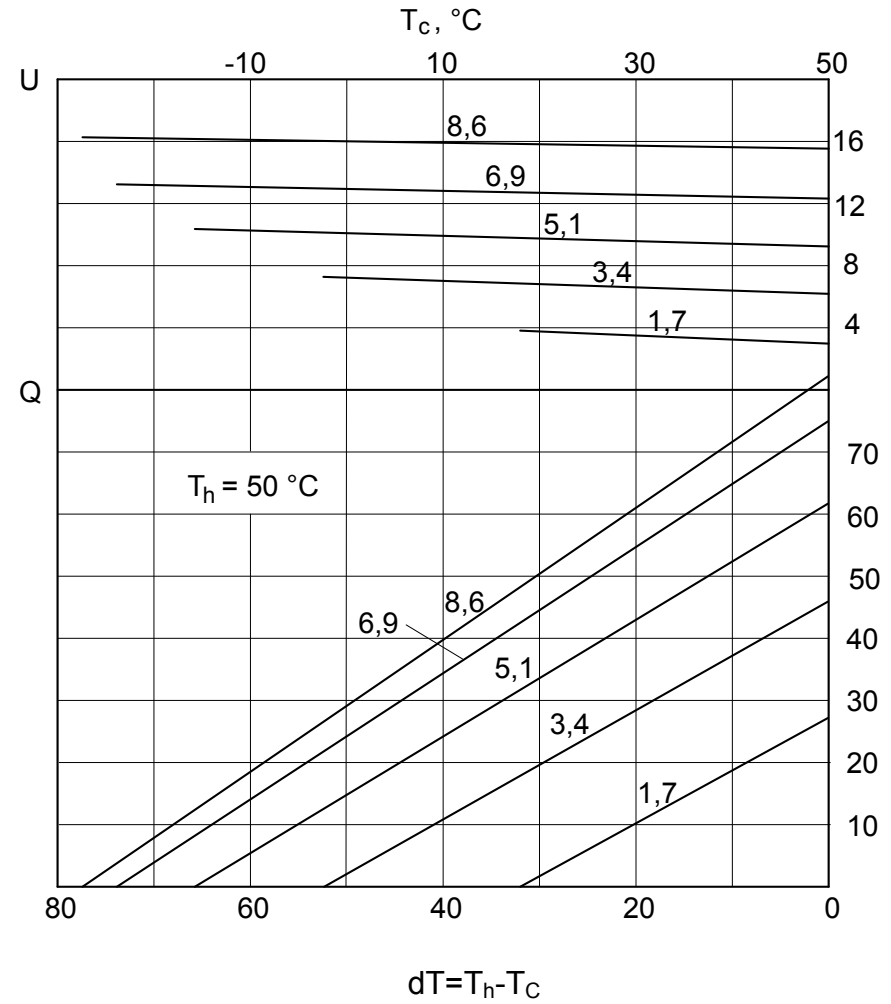
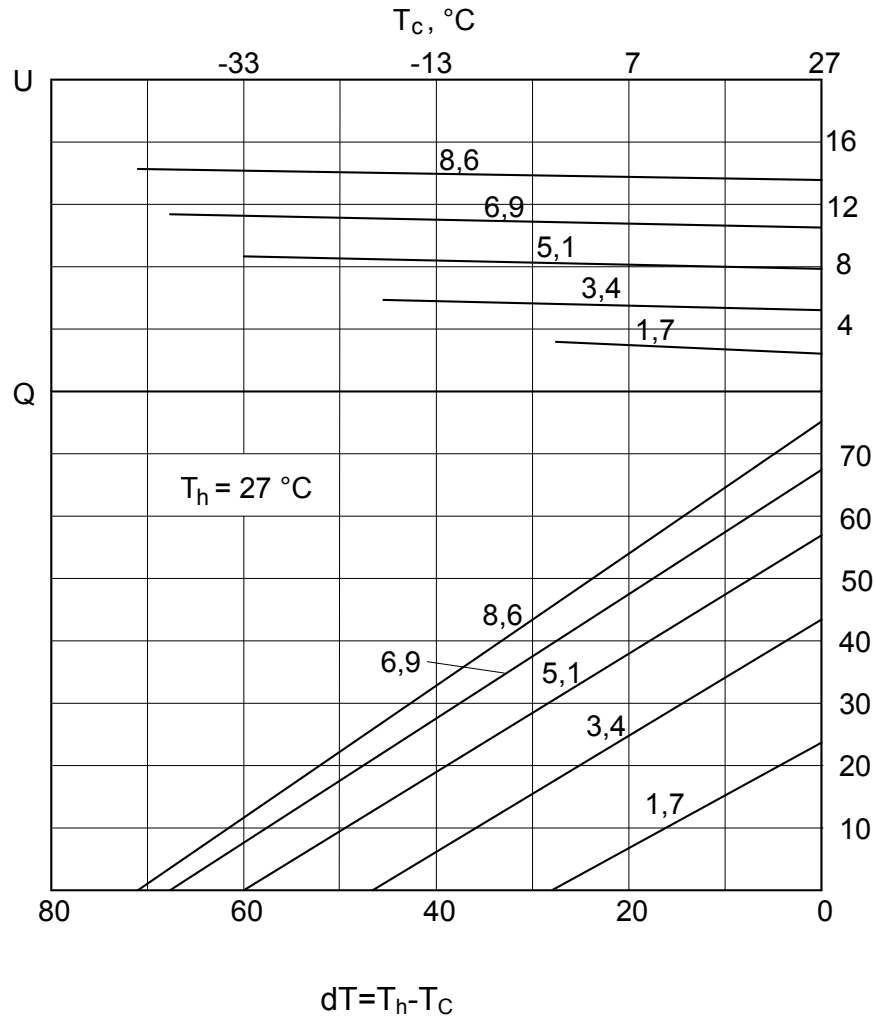
Additional information can be found on the page in Internet

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

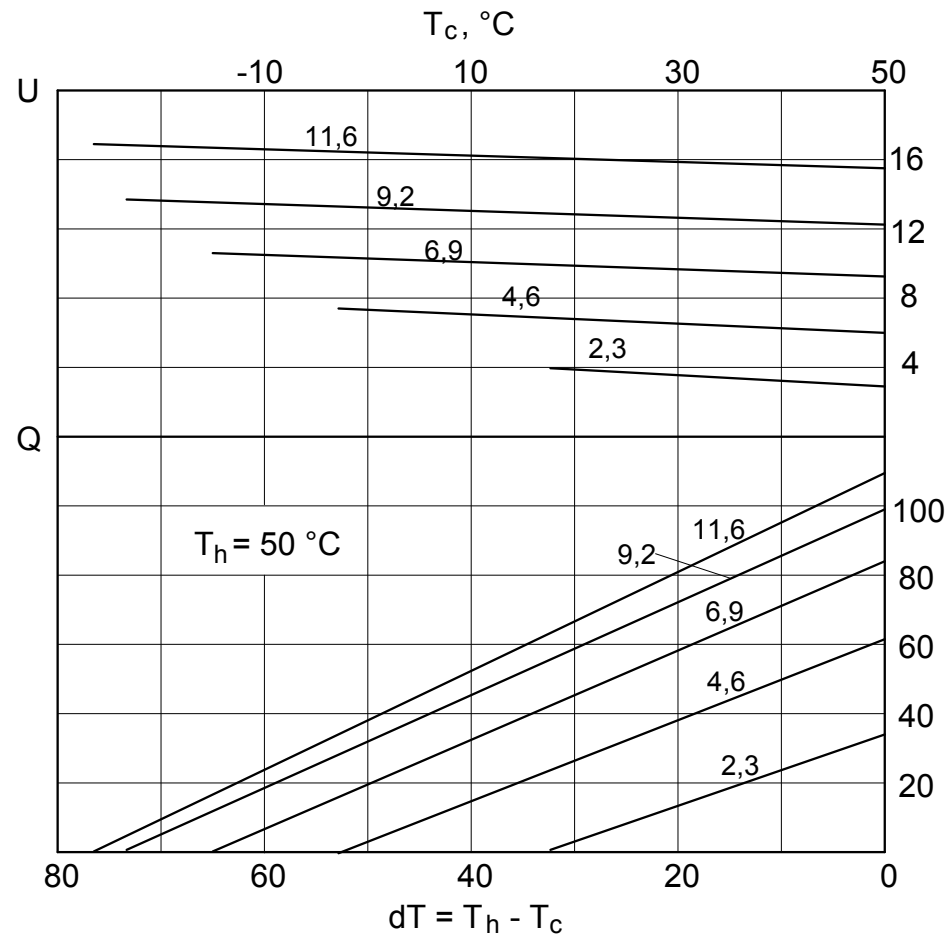
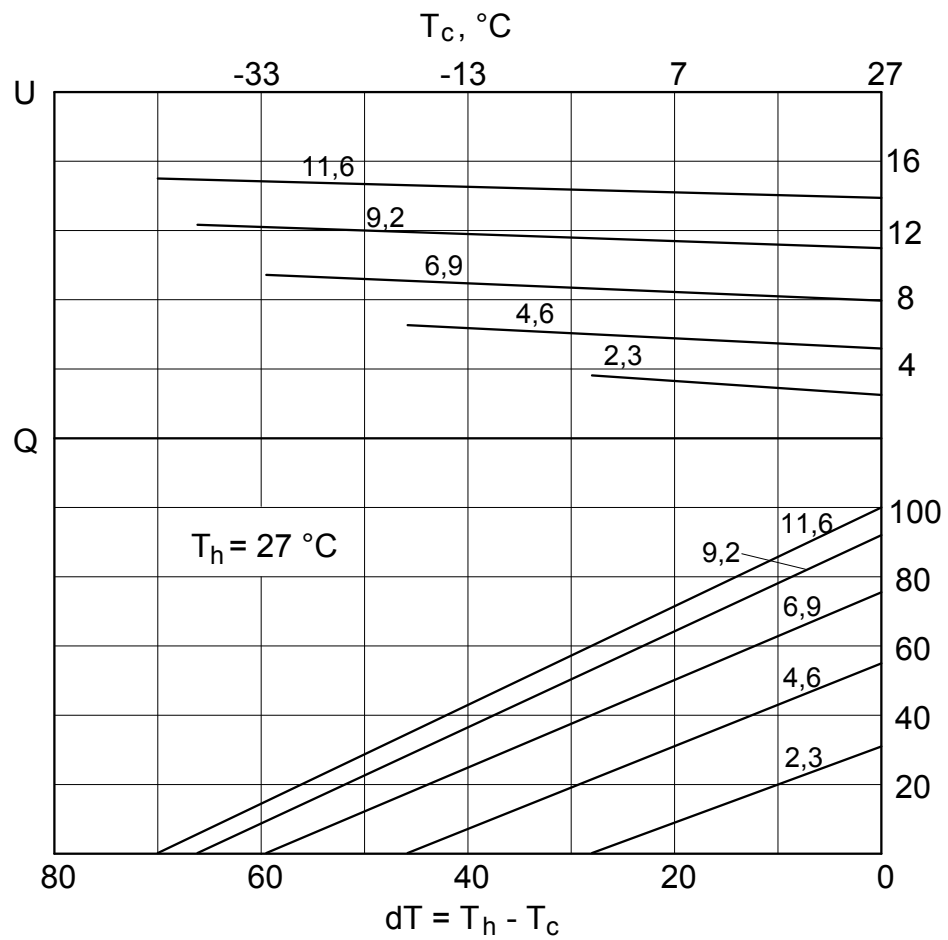
Contact Phone (380-3722)-41909

Contact person Valery Rasinkov

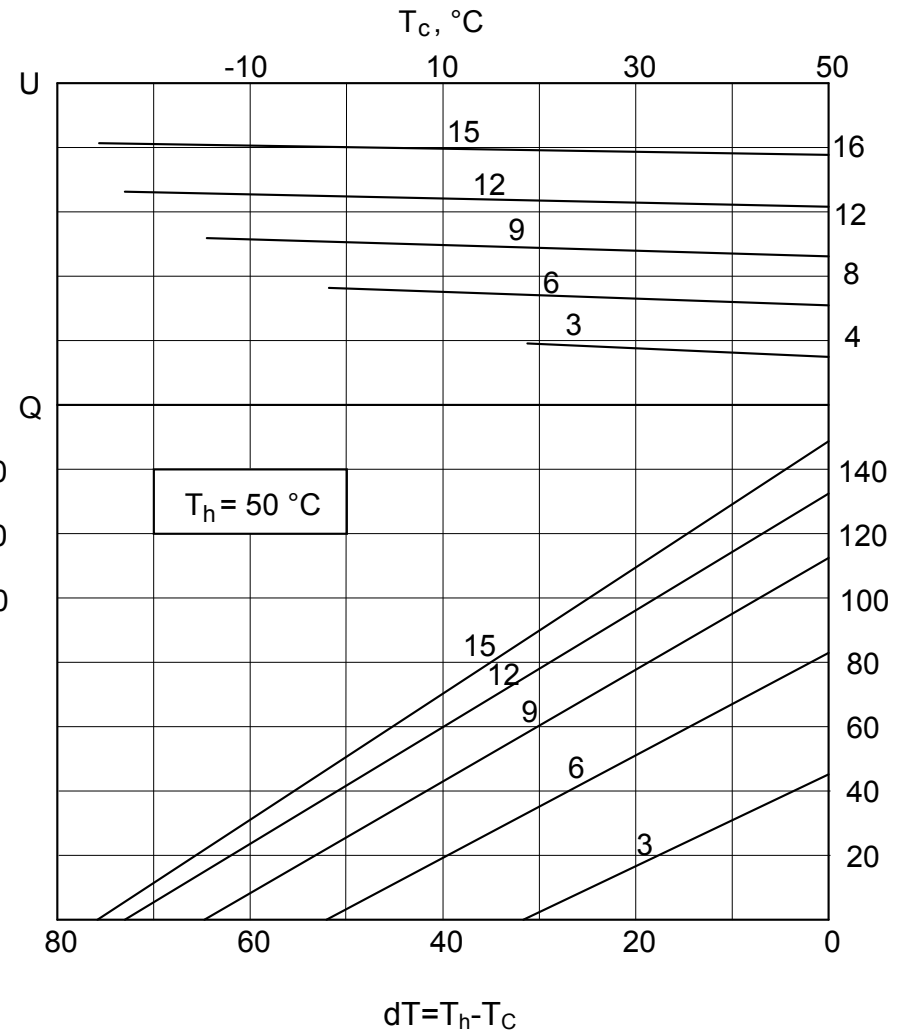
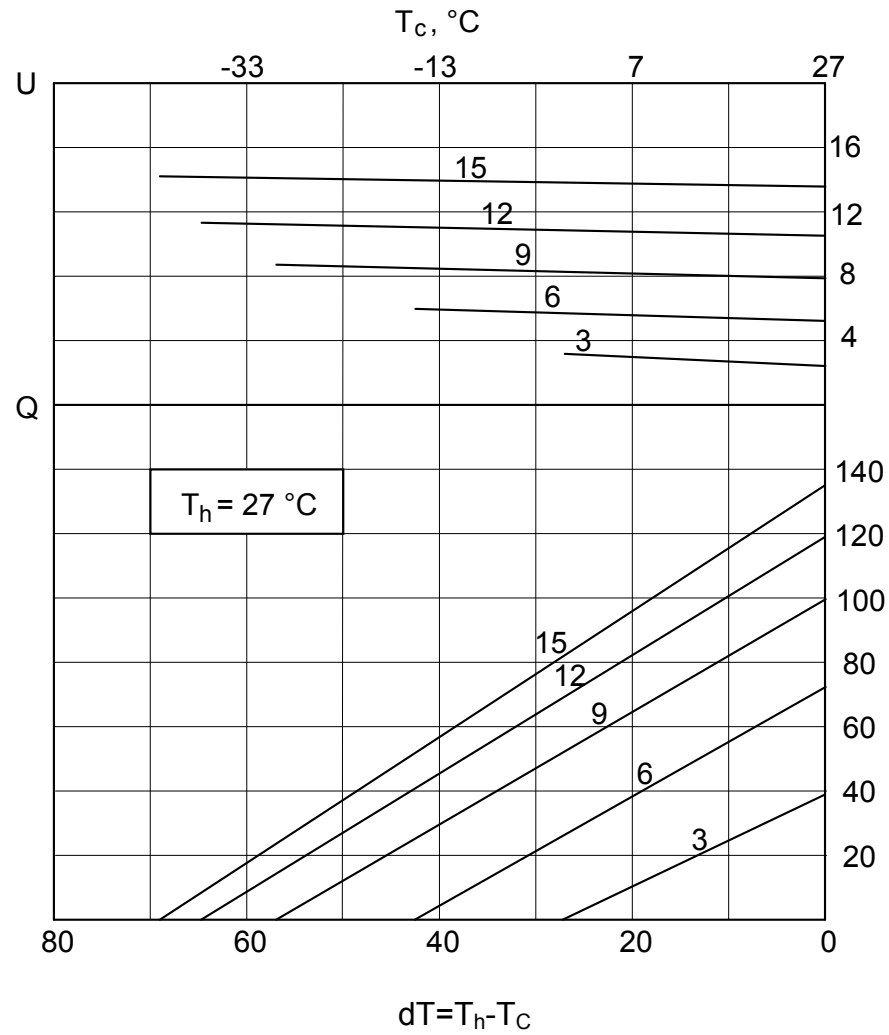
Characteristics of thermoelectric module Altec-027



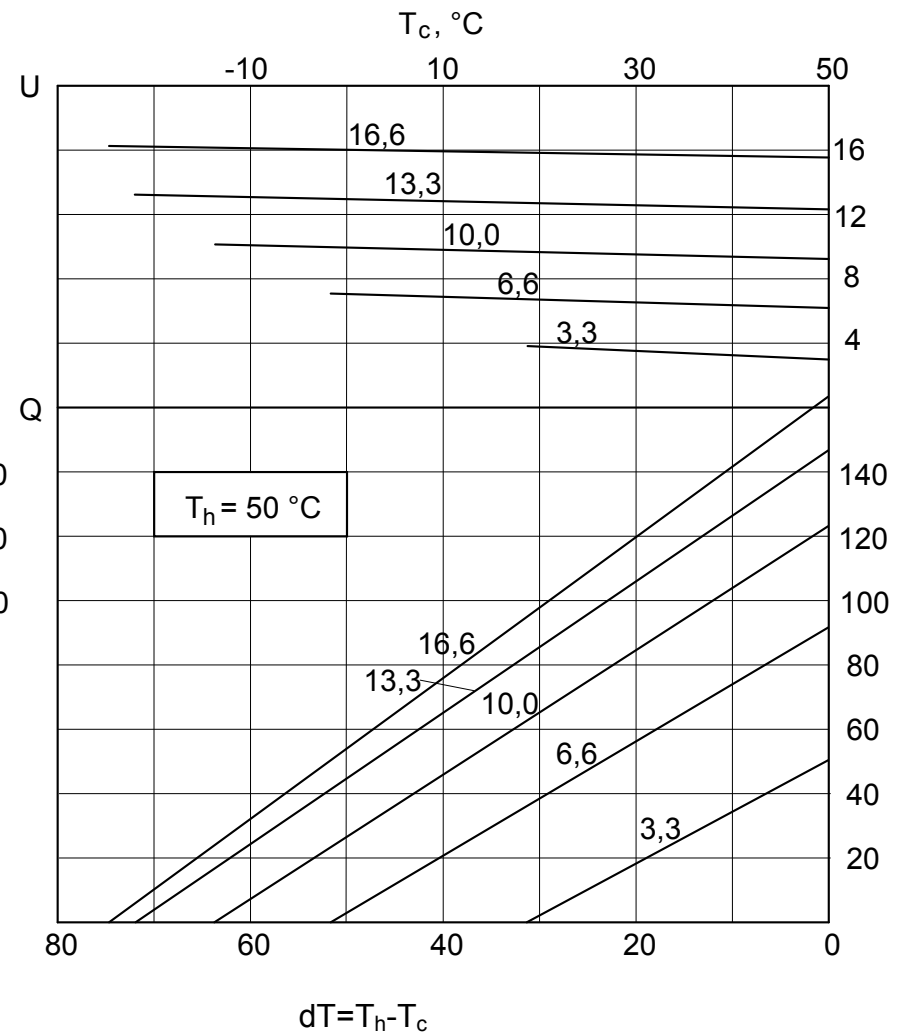
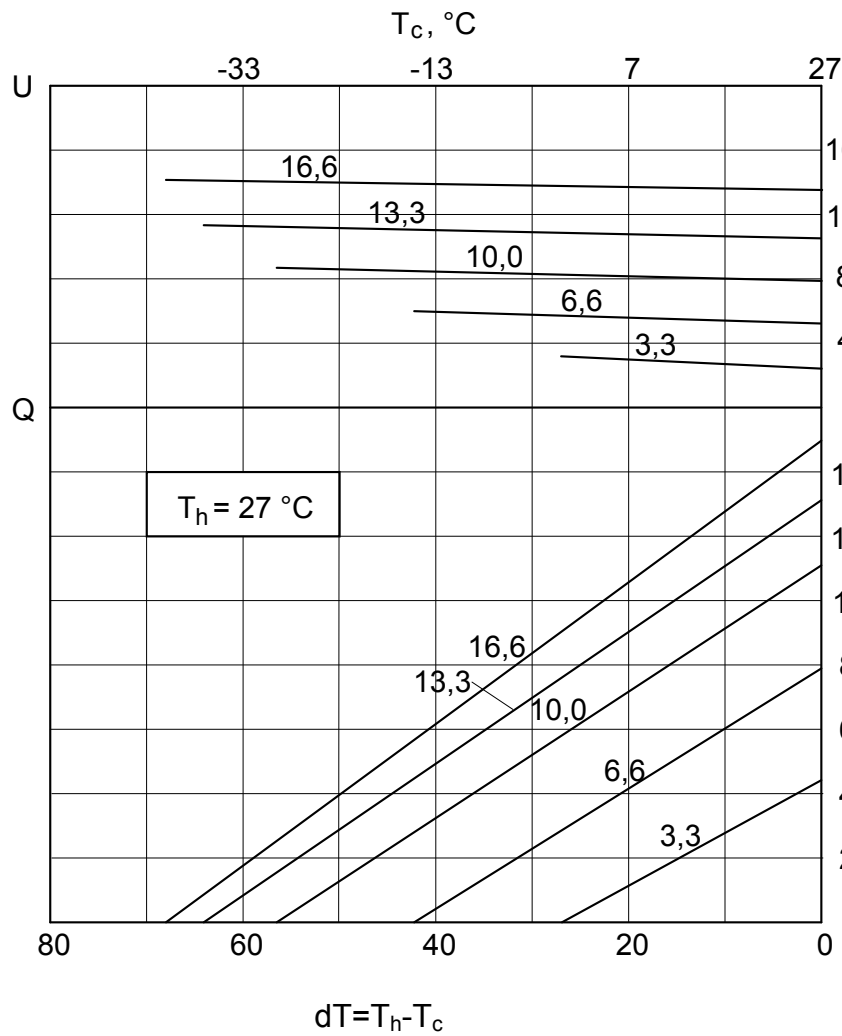
Characteristics of thermoelectric module Altec-031



Characteristics of thermoelectric module Altec-033



Characteristics of thermoelectric module Altec-035



Characteristics of thermoelectric module Altec-036

