

Figure 1.1. The Photo of TEG

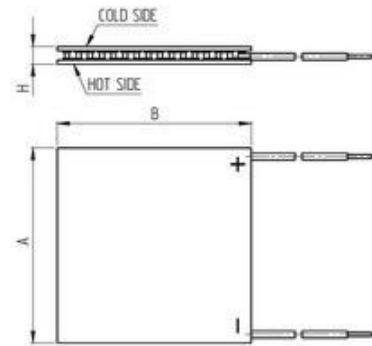


Figure 1.2. The Photo of TEG

### System of Notation

A universal abbreviation is used to notate generating modules: ATEG-N-C-H, where:

ATEG — product abbreviation — thermoelectric generating module;

N — number of thermocouples in the module;

C — length of the rib of the thermoelectric element basis (mm);

H — height of the thermoelectric element (mm)

For example, in the ATEG-127-1-2R5: 127 pairs of thermocouples (254 thermoelectric elements); every element has the cross-section of 1.0×1.0mm and the height of 2.5mm.

Table 1. Characteristics

$T_{\text{Cold Side}} = 50\text{ }^{\circ}\text{C}; T_{\text{Hot Side}} = 150\text{ }^{\circ}\text{C}$									
Part number	A (mm)	B (mm)	H (mm)	$R_{\text{internal}}$ ( $\Omega$ )	$R_{\text{heat}}$ (K/W)	U (V)	I (A)	W (W)	Efficiency (%)
ATEG-127-1-R8	30	30	3.10	2.41	1.40	1.83	0.76	1.38	2.3
ATEG-127-1-1R3	30	30	3.60	3.92	2.27	2.18	0.56	1.21	2.7
ATEG-127-1-2R5	30	30	4.80	7.53	4.36	2.55	0.34	0.86	3.2
ATEG-127-1R4-1R5	40	40	3.90	2.46	1.43	2.25	0.91	2.05	2.8
ATEG-127-1R4-2R5	40	40	4.80	3.84	2.23	2.50	0.65	1.63	3.2
ATEG-199-1R4-R8	40	40	3.20	1.93	0.45	2.19	1.14	2.49	1.8
ATEG-199-1R4-1R2	40	40	3.60	2.89	0.68	2.69	0.93	2.50	2.2
ATEG-199-1R4-1R5	40	40	3.90	3.85	0.91	3.03	0.79	2.39	2.4
ATEG-287-1-1R3	40	40	3.60	8.85	1.00	4.54	0.51	2.33	2.5
ATEG-287-1-1R5	40	40	3.80	10.20	1.16	4.77	0.47	2.23	2.7
ATEG-287-1-2R5	40	40	4.80	17.00	1.93	5.49	0.32	1.77	3.1

### Application Recommendations:

1. Generating modules (ATEG) must be installed on flat surface. This requirement is especially vital for the cold side of ATEG. The purity of surface processing on which ATEG is installed must be better than 20 microns.
2. The pressing force must be not less than 12-15 kg/cm<sup>2</sup>
3. Temperature of the hot seam shall not exceed 200 °C.

**Attention!** During the exploitation of ATEG with the decrease of electric load an increase of the hot seam temperature up to 5% off the difference between hot and cold sides of the module can follow.



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