

## Thermoelectric Cooling Modules



Thermoelectric (Peltier) modules package semiconductor pellets in a special ceramic substrate array, which is uniquely configured to pump heat. When direct current energizes the module, heat is absorbed on one ceramic surface, then is actively pumped through the semiconductor array to the ceramic substrate on the opposite side; here the heat is released. Typically, these devices are mounted with a thermal load on one side and some form of heat sink (and often a fan) on the other. When used in cooling mode, the thermoelectric device pulls heat from the thermal load and transfers it to the heat sink (where the energy can be dissipated into the ambient environment). Unlike passive approaches to thermal conditioning - which can only limit the rise above ambient -

thermoelectric technology can actively remove heat to bring the thermal load to a belowambient state. Furthermore, the device can shift from cooling to heating mode, simply by reversing the polarity of the applied DC voltage.

Z-Max<sup>®</sup> is a unique and patented thermoelectric device, pioneered by the Tellurex Corporation. Z-MAX high performance modules are the culmination of a unique "press and sinter" manufacturing process discovered by Tellurex. The patented metallurgical and inherently stronger than conventional devices, but offers unsurpassed performance.

Stock No.	Mfr.'s Type	Dimensions (mm)				Performance Specifications @ THOT = 50°C							
						$\Delta T$ Across Device in C°		Q (Thermal Load)		Electrical Characteristics*		EACH	
		A	В	с	D	∆T Max. @ Q=0	Typical Range of Operation†	Q Max. @ ∆T=0	Typical Range of Operation‡	Імах	Vmax	1-24	25-99
957-1000	CZ1-1.4-127-1.14	40.0	40.0	44.0	3.3	79°	30-50°	78.0 W	18-38 W	8.0 A	16.1 VDC	29.00	24.50
957-1002	CZ1-1.4-127-1.65	40.0	40.0	40.0	3.8	79°	30-50°	56.0 W	10-25 W	5.6 A	16.1 VDC	29.00	24.50
957-1004	CZ1-1.4-63-1.65	20.0	40.0	40.0	3.8	79°	30-50°	27.8 W	6-12 W	5.6 A	7.9 VDC	20.85	16.75
957-1006	CZ1-1.0-127-1.27	31.0	31.0	34.0	3.3	79°	30-50°	38.7 W	8-17 W	3.9 A	16.1 VDC	21.50	17.00

\*Values which will yield maximum  $\Delta$ T in a system. †Normal range of operation in a complete TE system with significant thermal load. ‡Normal range of operation in a complete TE system with significant  $\Delta T$ .

## **Prototype Starter Kit**

Fully integrated, compact, thermoelectric cooler assembly with cold plate, CZ-1.0-127-1.27 Z-MAX module, heat sink, and fan. This hands-on introduction to thermoelectrics is ready to use as an educational tool or prototype component. The Starter Kit requires a 12 volt DC power source and has built-in over temperature protection (85°C).



957-1008. Prototype Starter Kit......EACH 150.00

Questions? For more detailed product characteristics, visit the Tellurex website at www.tellurex.com

Call Your Nearest Allied Location (1-800-433-5700) For Quick Service