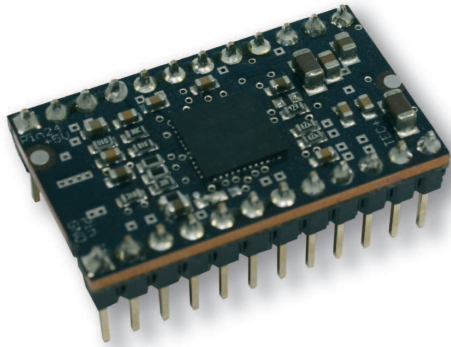


PL-TEC 1-0305-PWM

Driver for TEC-Modules



Product Description:

The PL-TEC 1-0305-PWM is a very small, safe, and most accurate temperature controller for Peltier thermoelectric cooler (TEC) modules. An ultra low-drift chopper amplifier maintains $\pm 0.001^\circ\text{C}$ temperature stability. Output current, rather than voltage, is directly controlled to eliminate current surges. Individual heating and cooling current limits and voltage limits provide the highest level of TEC protection.

The PL-TEC 1-0305-PWM operates from a single supply and provides bipolar $\pm 3\text{A}$ output by biasing the TEC between the outputs of two synchronous buck regulators. True bipolar operation controls temperature without "dead zones" or other nonlinearities at low load currents. The control system does not hunt when the set point is very close to the natural operating point, where only a small amount of heating or cooling is needed.

An analog control signal precisely sets the TEC temperature. The actual TEC temperature and current can be monitored via analog outputs. In addition, separate over- and under-temperature outputs indicate when the TEC temperature is out of range. An on-chip voltage reference provides bias for a thermistor bridge.

Through the new efficient design, the PL-TEC 1-0305-PWM itself requires no heat sink or other cooling method to reach its full output power.

- Bipolar $\pm 3\text{A}$ output
- Temperature stability up to 0.001°C
- Adjustable TEC current and voltage limiting to protect TEC-module
- Direct TEC temperature control
- No additional heat sink required
- Low-ripple and low-noise design
- Multiple monitoring outputs

Technical Data:*

Output current	Bipolar 2,5 A, 3A peak**
Output current limiting range	Heating: 0 .. 3 A Cooling 0 .. 3 A Independently limitable by external resistor
Max. output voltage (referred to the supply)	- 4.3 .. + 4.3 V (@ +5V) - 2.3 .. + 2.3 V (@ +3V)
Output voltage limiting range	0 .. 4.3 V by external resistor
TEC Temperature monitor	0 .. 1.5 V**
Supply voltage	+3 .. +5 V single supply
Temperature stability	0.001 K**
Monitor outputs	- TEC temperature monitor - Over- and under-temperature output (open collector) - TEC current monitor
Control inputs	- TEC temperature set point - enable (TTL level)
Power Dissipation	< 2.5 W
Dimensions in mm	30x18x7,5 mm DIP 24-6 package
Weight	8 g
Operating temperature	-20 to + 55 ° C

* Technical data is subject to change without further notice.

** See manual for detailed information.

Optional Accessories: PL-TEC-BOB

