

ATC Series XFP-33-11-11-CP

Active Transceiver Cooler



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XFP transceivers are used in communication's equipment to transmit data over fiber up to 1 km for outdoor applications. The upcoming 5G deployment requires faster data communications, which is driving higher temperatures due to increased heat flux densities. This has become a real challenge for optical transceivers where high temperature environments can exceed their maximum operating condition. The conventional passive thermal solution of heat sink with interface material is not capable of reducing the temperature below ambient, so an active cooling solution is required.

The Active Transceiver Cooler (ATC) is specifically designed for small form-factor pluggable (SFP) transceivers. The ATC thermoelectric assembly consists of a custom thermoelectric module (TEM), an aluminum base, Tflex thermal gap fillers, an NTC thermistor, fastener clips and connector.

Featuring a Coefficient of Performance (COP) rating above 1.0 without forced airflow, the customizable thermoelectric modules offer a highly reliable thermal solution built to operate in high temperature environments.

Laird Part number: 387001007

FEATURES

- Operation in high temperature environment
- High COP TEM
- Compact form factor
- Reliable solid-state operation
- RoHS compliant
- Telcordia GR-486 Core compliant

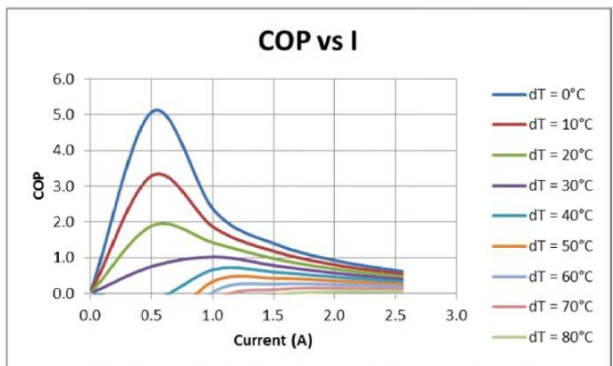
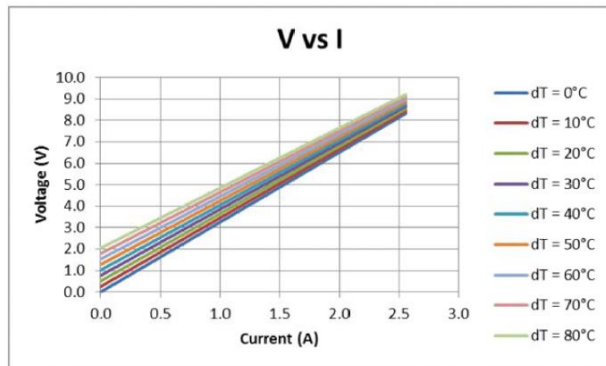
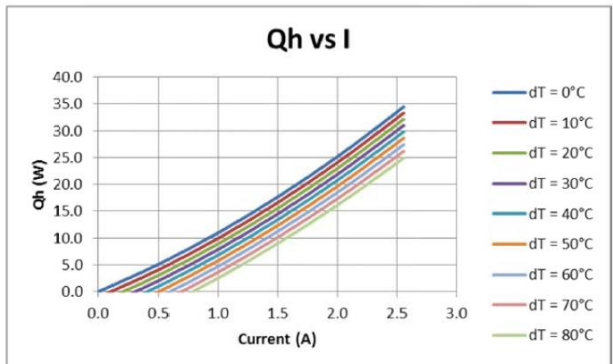
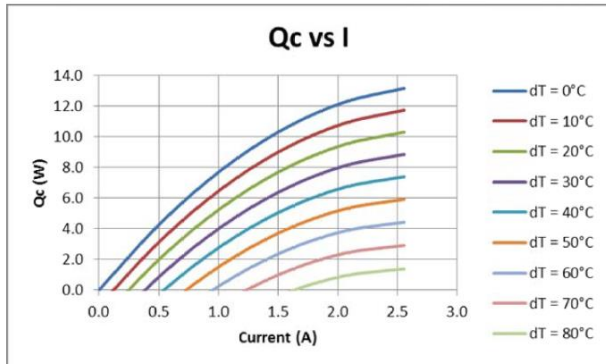
APPLICATIONS

- Telecom Infrastructure

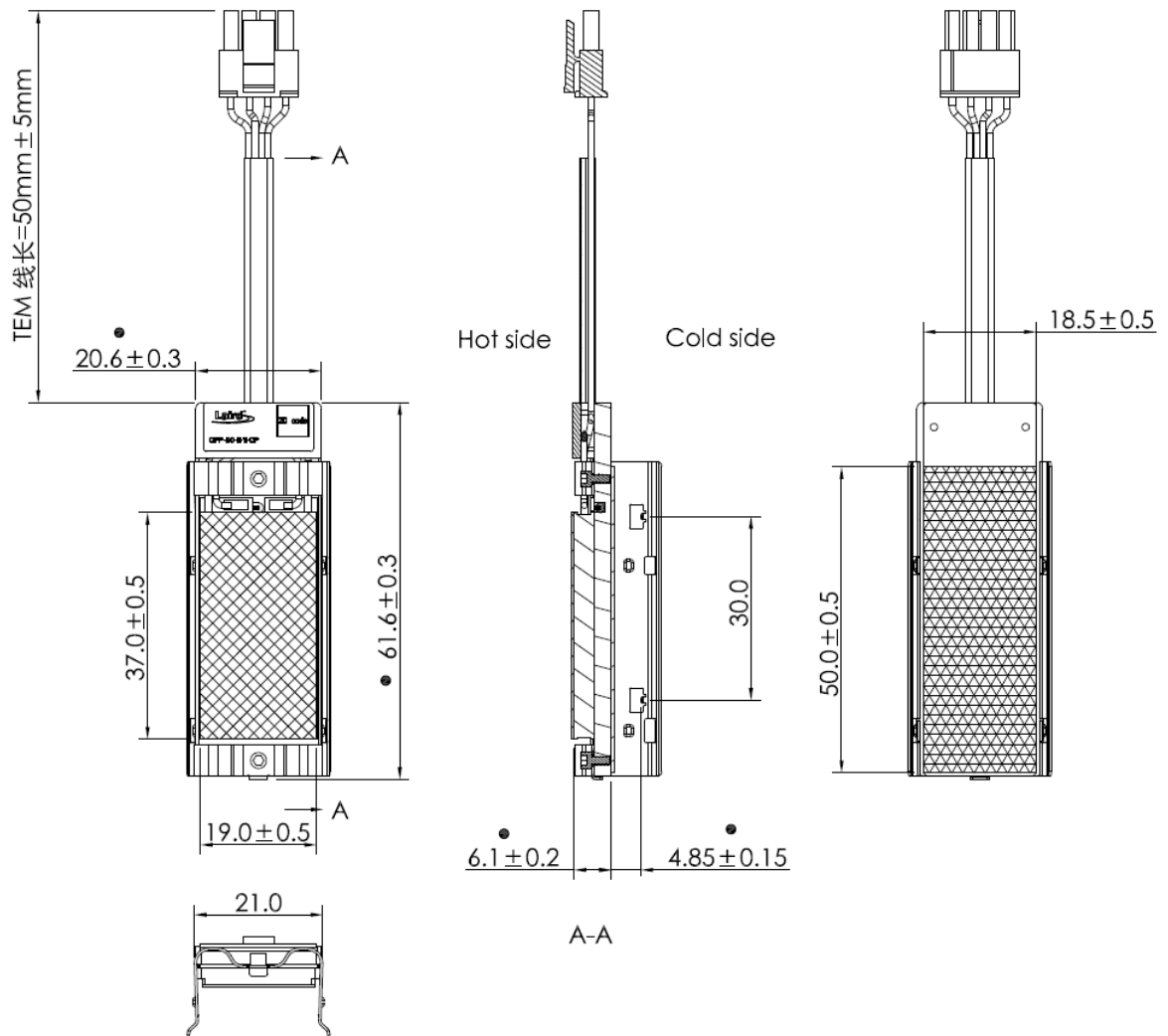
| SPECIFICATIONS | |
|----------------------------|--|
| TEM Dimension (mm) | 20 x 40 x 2.9 |
| Clips | N |
| Height limitation (mm) | 8 |
| Max Voltage (V) | 3.3 |
| Power of SFP (W) | 3.5 |
| Quantity of SFP | 4 |
| Total Active Heat Load (W) | 14 |
| Temp of Hot Side (°C) | 85 |
| Delta T (°C) | 30 |
| Temp of Cold Side (°C) | 55 |
| COP | 1 |
| Size of EMI Cage (mm) | 59 x 19 |
| Cooling Power (W) | 15 Watts @ $\Delta T=0^{\circ}\text{C}$, $T_a=95^{\circ}\text{C}$ |
| Voltage Nominal (VDC) | 3.30 VDC |
| TEM Voltage (VDC) Nominal | 3.3 VDC, Max 8.0 VDC |
| TEM Current (A) Nominal | 1.8A @ $\Delta T=0^{\circ}\text{C}$ |
| Sensor Type | Thermistor, NTC nxft15xh103fa2b110 |
| Connector Type | Crimp, Molex, Housing: 43645-0400, Terminal: 43030-0001 |
| Weight | 23.2 grams |
| Operating Temperature | -40 C to 95°C |

PERFORMANCE CURVES

TEM module performance at $T_h=95^\circ\text{C}$



ISOMETRIC DRAWINGS



ATC CONNECTIONS

| OBJECT | WIRE TYPE | COLOR | TERMINAL | RECEPTICLE HOUSING | POLE | PLUG HOUSING |
|--------|-----------|-------|---------------------|--------------------|------|---------------------|
| TEM - | AWG #22 | Red | Molex 43010-0001 | Molex 43645-040 | 1 | Molex 43640-0400 |
| TEM + | | Black | | | 2 | |
| NTC - | | Black | | | 3 | |
| NTC - | | Black | | | 4 | |

INSTALLATION INSTRUCTIONS

To mount the ATC assembly to the EMI cage:

1. Remove the TIM protective liner from underside of assembly.
2. Align the fixed holes on the ATC with the fixed points on the cage (see figure 1)
3. Place fingers at pressed positions as indicated in figure 2
4. Firmly press ATC into place making sure ATC holes and cage points are latched

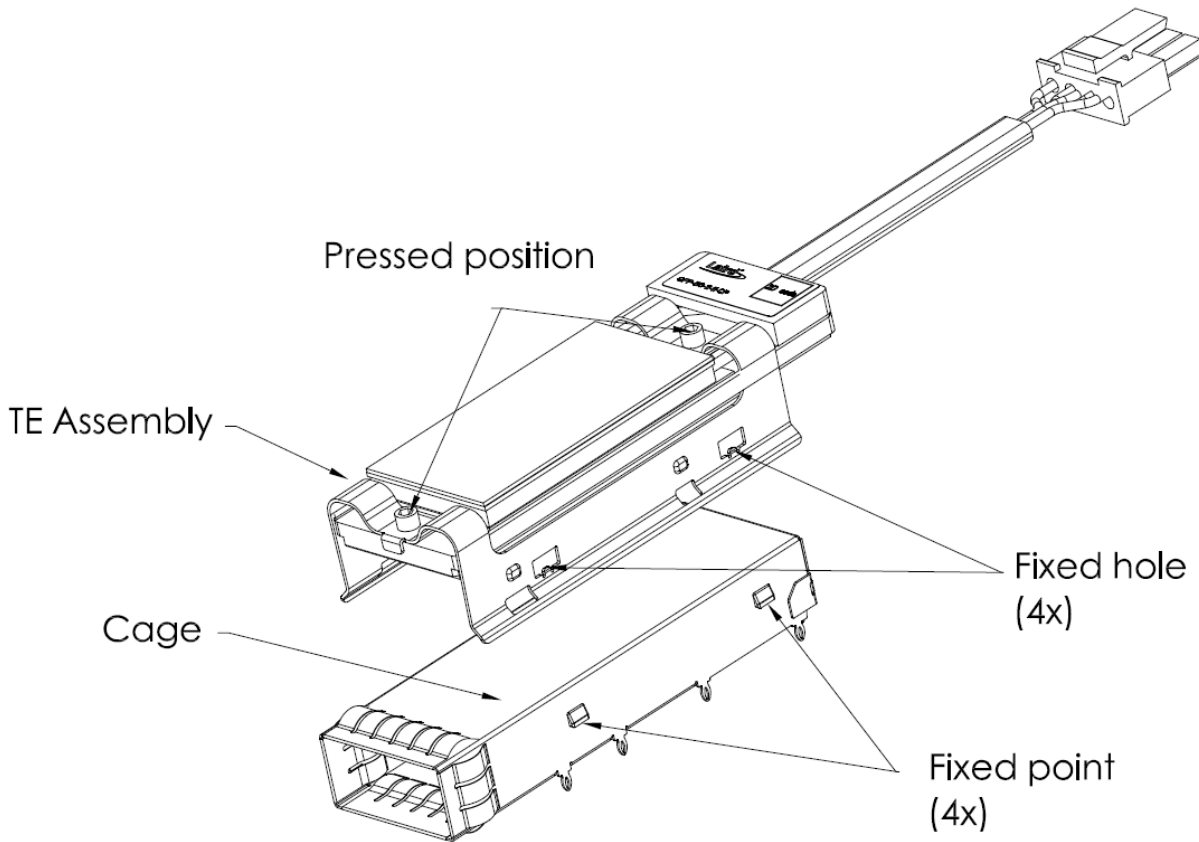


Figure 1: Alignment holes and points

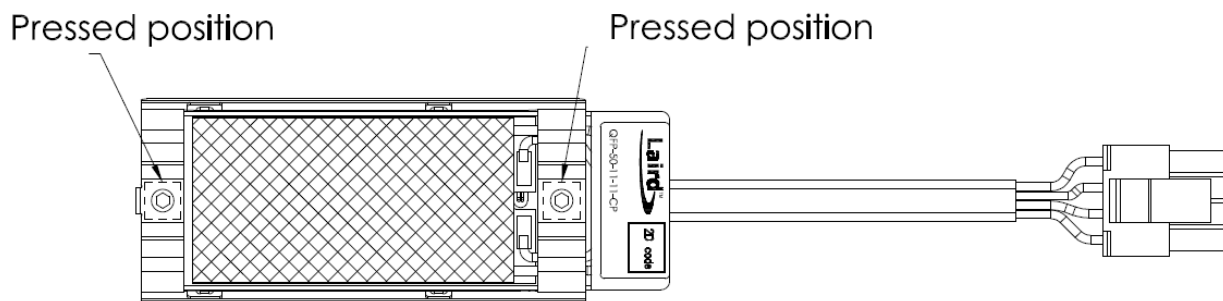


Figure 2: Press positions

NOTES

- Isolate the assembly from high humidity to minimize risk of condensation
- Avoid switching the power to TEMs at frequencies between 0.01 Hz to 5k Hz, which can cause premature failure of the TEM modules
- Max ripple on supplied power = 5%
- Input voltage must not exceed 8.0 VDC
- The hot side temperature of TEM must not exceed 120°C.

LAIRD-ETS-ATC-SFP-33-11-11-CP-DATA-SHEET-110117

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