

Cooling Solutions for CXC-GS45 and CXC-PV525 Modules

COM Express™ Family



Description

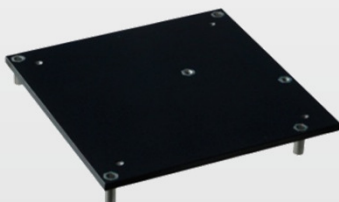
COM Express™, an open specification of the PICMG (PCI Industrial Computer Manufacturer Group), is a module concept to bring PCI Express and other latest technologies like SATA, USB 2.0 and LVDS on a COM (Computer On Module).

Depending on the computing performance, the processor and chipset technology and the system environment COM Express modules require different cooling measures.

MSC has developed various solutions that help the system designer to quickly solve the heat dissipation problems and ensure optimal environmental conditions for the module.

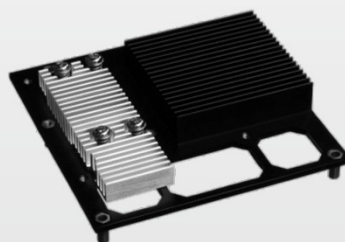
Heat spreaders

Standardized thermal interfaces for easy integration in customers cooling concept and full interchangeability.



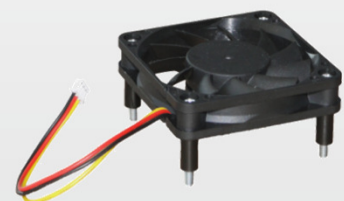
Passive cooling

Optimized heat sinks for best cooling performance even in industrial environment.



Active cooling

Heat sinks combined with a dedicated speed controlled fan. An off-the-shelf solution for demanding ambient conditions.



Heat spreaders

The COM Express cooling concept is based on a heat spreader that offers a clearly defined interface for system specific cooling measures. It consists of a metal plate with direct thermal connection to the most power dissipating components.

System designers can implement different cooling concepts through thermal connection to this heat spreader.

In some cases a connection to the system housing might already provide sufficient heat dissipation, other applications might be better served with passive cooling elements that are exposed to the airflow inside the system.



Highlights

- Thermal interface compliant to COM Express Specification
- Heat conducting stacks on bottom side
- Threaded (M2.5) or through-hole version available
- Mounting holes for heat conducting components

Dimensions	Material
Height: 11 mm Maximum height measured from top of PCB to top of heat spreader. Outline: 95 x 95 mm	Plate: Black anodized aluminum

Order Number	Description	Reference
1073526	Heat spreader for CXC-GS45 with through-hole standoffs	MSC CXC-GS45-01 HSP-001
on request	Heat spreader for CXC-GS45 with threaded standoffs M 2.5	MSC CXC-GS45-01 HSP-002
38044	Heat spreader for CXC-PV525 with through-hole standoffs	MSC CXC-PV525-01 HSP-001

Passive cooling

For systems with sufficient air flow around the module, either passive through convection or forced by a system internal fan, MSC's passive cooling solution may be used.

Passive cooling solutions consist of an extruded aluminum heat sink with heat conducting stacks on the bottom side.



Highlights

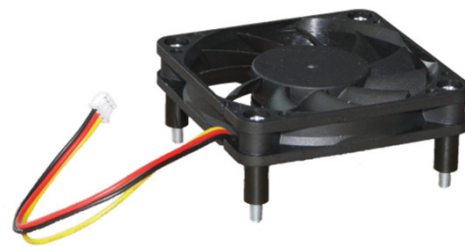
- Self-aligning floating element for processor cooling
- Heat conducting stacks on bottom side
- Threaded (M2.5) or through-hole version available
- Prepared for optional fan
- Screws for mounting included

Dimensions	Material
Height: 25 mm Maximum height measured from top of PCB to top of heat sink. May vary when transportation locks are removed.	Fix part: Black anodized aluminum
Outline: 95 x 95 mm	Floating part: Blank aluminum

Order Number	Description	Reference
1074771	Heat sink for CXC-GS45 with through-hole standoffs (optional fan kit is not included)	MSC CXC-GS45-01 HSI-001
38045	Heat sink for CXC-PV525 with through-hole standoffs	MSC CXC-PV525-01 HSI-001

Active cooling

In cases where an active cooling is required MSC offers a fan kit for mounting on top of the heat sink.



Highlights

- 70 mm x 70 mm fan with tacho signal and special connector for MSC COM Express modules
- Spacers and screws included

Dimensions	Excerpt of fan data sheet
Height: 36 mm (heat sink with fan) Maximum height of heat sink with fan mounted. Measured from top of PCB to top of heat sink.	Operating Temperature: -10° C~70° C (normal humidity) Storage Temperature: -20° C~75° C (normal humidity) Rated Speed: 4 200rpm±10% In free air at rated voltage; testing speed after continuous 3 minute operation at ambient temperature of 25° C Airflow: 25.15CFM; 0.71m ³ /min At rated voltage; at zero static pressure Life expectance (L10): More than 90% shall keep running after continuous operation of 50.000 hours at rated voltage in 40° C ambient temperature and 65% relative humidity condition. Fan life should be redefined when above conditions are changed.
Note	
a) Free air circulation above the fan is necessary to assure proper air flow! b) Locking the rotor when it's running may damage the fan as well as the control circuit on the COM Express module!	

Order Number	Description	Reference
36057	Fan kit for heat sinks, suitable for port 1074771 and 38045	MSC CXC-GS45-01 FKT-001

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