

PWM Amplifier Support Components

FLYBACK PROTECTION DIODES

Install a low forward drop, high speed diodes from each output to both +Vs and to the Isense pin. Internal protection circuits coupled with programmable current limiting following data sheet recommendations do a good job of protecting the switch portion of the output FETs. However, the body diodes can still be destroyed in specific circumstances because they cannot be turned “off”, and the SOA of this portion of the structure is smaller than the SOA of the switch portion.

In normal operation, these diodes conduct only during the dead time between pulses. When the FETs are all turned off by internal protection circuits or by external control, energy stored in the filter and load must flow through these diodes. Time constants of this discharge are often orders of magnitude longer than dead time. If this action was triggered by the internal protection circuits, energy levels even higher than normal will have been stored because of the finite response time of the protection circuits.

EVALUATION KIT

EK01 is an easy to use engineering platform for prototype evaluation. The PC board is also a good starting point for an application specific layout. Provided items include: PC board, heatsink rated at 2°C/W, cage jacks, thermal washers, and spacers. The amplifier is sold separately. Common hardware such as screws, nuts and user’s preference for I/O connectors are not provided.

HEATSINK

The following heatsink is mechanically compatible with this amplifier. The thermal rating with optimum mounting is free air is 2°C/W.

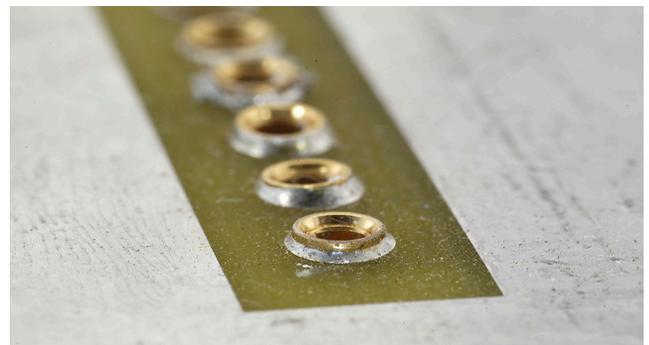
HS16



CAGE JACKS

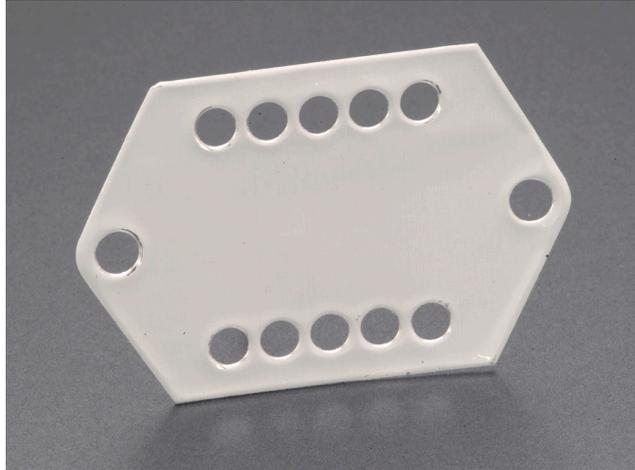
Part number MS04 consists of a package of 12 cage jacks. These are mounted directly in a print circuit board. Use a spacer between the PCB and the heatsink to avoid short circuits.

MS04



THERMAL WASHER

TW10



NOTES:

1. Base material is aluminum, 0.002" thick. Do not allow the washer to touch pins of the amplifier.
2. For optimum thermal transfer, avoid abrasive handling of washers which can damage their 0.5mil thick layer of thermal compound with which each side is coated.
3. The dry thermal compound will flow filling header to heatsink voids as soon as the material reached 60°C.
4. Do not store unused thermal washers above 40°C.
5. A new washer must be used for each mounting.
6. Part number TW10 consists of a package of 10 washers.
7. Thermal resistance is 0.08°C/W.

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