

PWM Amplifier Support Components

FLYBACK PROTECTION DIODES

Install a low forward drop, high speed diodes from each output to both +Vs and to the corresponding 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.

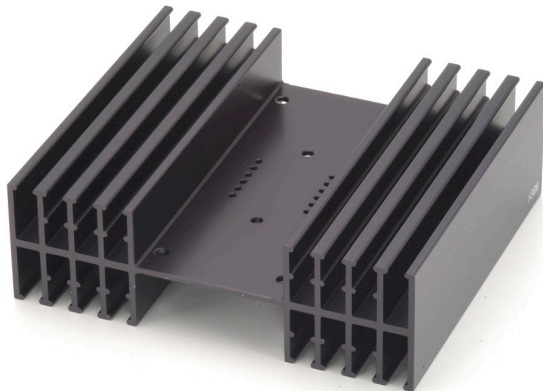
EVALUATION KIT

EK03 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 1°C/W, cage jacks, thermal washers, ceramic bypass capacitors and spacers. The amplifier is sold separately. Common hardware such as screws, nuts and user’s preference for I/O connectors are not provided.

HEATSINKS

The following heatsinks are mechanically compatible with this amplifier. Thermal ratings are for optimum mounting in free air.

HS06 0.96°C/W



HS11 0.68°C/W

With liquid cooling the HS11 thermal rating can be reduced to 0.1°C/W.



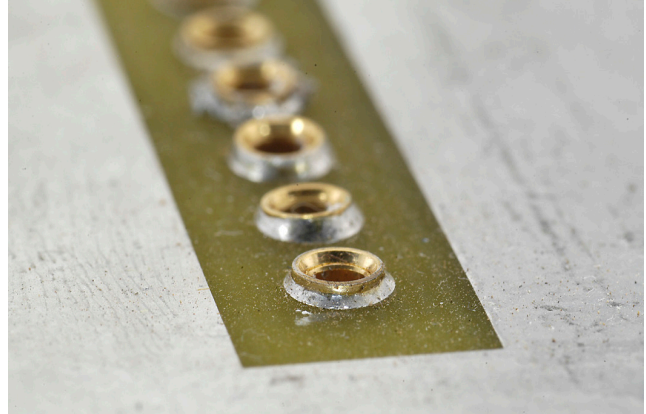
HS18 1°C/W



CAGE JACKS

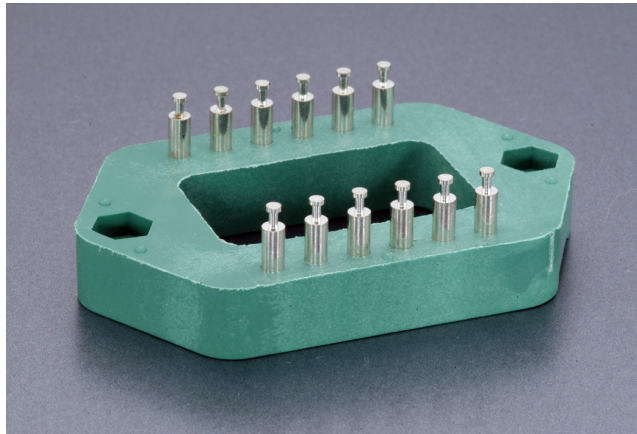
MS04

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.



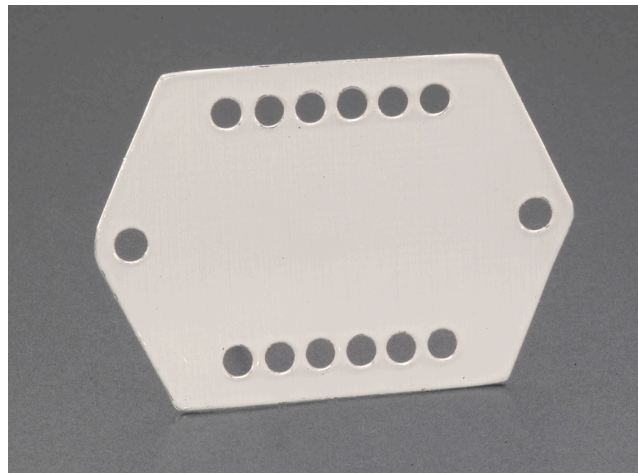
SOCKET

MS05



THERMAL WASHER

TW05



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 TW05 consists of a package of 10 washers.
7. Thermal resistance is 0.05°C/W.

NEED TECHNICAL HELP? CONTACT APEX SUPPORT!

For all Apex Microtechnology product questions and inquiries, call toll free 800-546-2739 in North America.

For inquiries via email, please contact apex.support@apexanalog.com.

International customers can also request support by contacting their local Apex Microtechnology Sales Representative.

To find the one nearest to you, go to www.apexanalog.com

IMPORTANT NOTICE

Apex Microtechnology, Inc. has made every effort to insure the accuracy of the content contained in this document. However, the information is subject to change without notice and is provided "AS IS" without warranty of any kind (expressed or implied). Apex Microtechnology reserves the right to make changes without further notice to any specifications or products mentioned herein to improve reliability. This document is the property of Apex Microtechnology and by furnishing this information, Apex Microtechnology grants no license, expressed or implied under any patents, mask work rights, copyrights, trademarks, trade secrets or other intellectual property rights. Apex Microtechnology owns the copyrights associated with the information contained herein and gives consent for copies to be made of the information only for use within your organization with respect to Apex Microtechnology integrated circuits or other products of Apex Microtechnology. This consent does not extend to other copying such as copying for general distribution, advertising or promotional purposes, or for creating any work for resale.

APEX MICROT TECHNOLOGY PRODUCTS ARE NOT DESIGNED, AUTHORIZED OR WARRANTED TO BE SUITABLE FOR USE IN PRODUCTS USED FOR LIFE SUPPORT, AUTOMOTIVE SAFETY, SECURITY DEVICES, OR OTHER CRITICAL APPLICATIONS. PRODUCTS IN SUCH APPLICATIONS ARE UNDERSTOOD TO BE FULLY AT THE CUSTOMER OR THE CUSTOMER'S RISK.

Apex Microtechnology, Apex and Apex Precision Power are trademarks of Apex Microtechnology, Inc. All other corporate names noted herein may be trademarks of their respective holders.