

### WHAT IS A TERMINATOR?

A terminator is a device which terminates the end of a signal line. Terminators can be internal to the system, or they can be in a separate configuration known as a "TERMINATOR". This is the preferred configuration for expandable bus systems due to its versatility. Physically, terminators are connectors with a resistor network or a resistor and current-voltage regulation network encased in a protective overmold or shell assembly.

### WHY USE A TERMINATOR?

SCSI terminators have two basic functions; 1) establish the proper voltage and current for signal line operation; 2) match the line impedance and reduce reflection.

1. A terminator is an important working partner for a driver. When a driver pulls down the signal, a voltage low (true state) terminator supplies proper current to maintain the voltage level and when a driver pulls up the signal voltage high (negate), a terminator helps a driver make a quick and smooth negation.

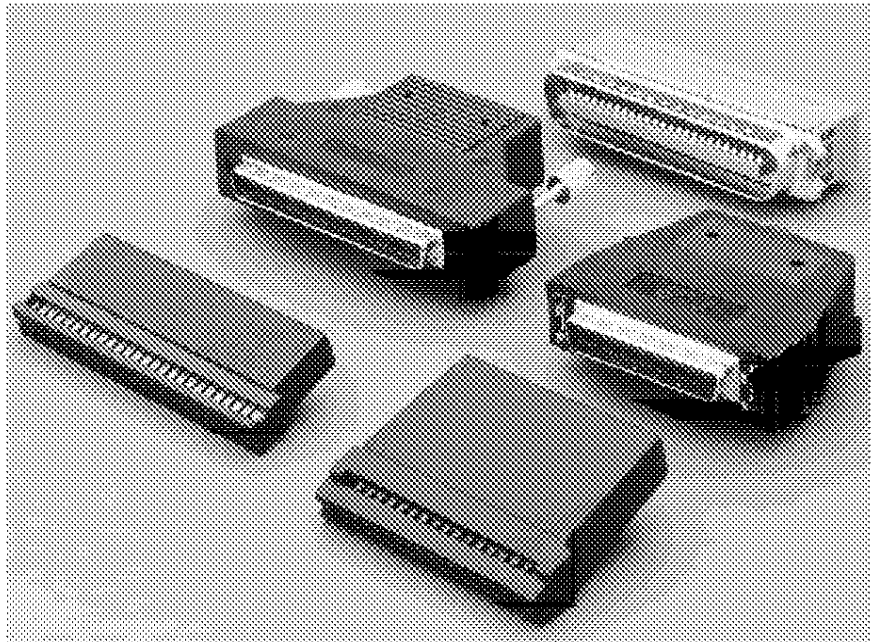
2. Termination is needed at the two ends of the SCSI bus. The impedance mismatches are generally of greatest magnitude at the ends of the bus. A terminator matches a bus characteristic impedance and minimizes the reflection.

### GENERAL TYPES OF TERMINATION

There are two general methods of accomplishing termination: passive and active.

Passive termination systems make use of fixed value resistors that place a matching resistance at the end of each signal line. This method is satisfactory for many applications. However, as signal speeds increase

## INTRODUCTION TO TERMINATORS



and noise margins decrease, passive termination may no longer assure a reliable signal transmission.

Active termination is the solution to this challenge. It reacts to an active negation driver and helps to make a clean monotonic wave shape in a high speed signal transfer by abilities of sourcing and sinking current and protecting a system by limiting maximum current.

### GENERAL CONFIGURATION OF TERMINATORS

Terminators are available in two general configurations: feedthrough and end-of-line. A feedthrough termination typically installs between an equipment I/O port and a ribbon cable bus connector. This permits a quick and simplified change in peripheral devices within an existing system configuration. This type of configuration is used if there is no

provision for a pluggable terminator. Although these terminators generally appear as devices with an input and output port, they may also have "no ports", in which case they are crimped directly to the cable.

End-of-line terminators are installed at the end of a line, and do not continue the bus. The device using this type of terminator must have both an input and output port.

In addition, terminators may be of a shielded or unshielded construction. Shielded terminators are generally required when a bus is used "between" equipment cabinets. An unshielded terminator, conversely, is intended for use "within" an equipment cabinet.

**FINE-PITCH "D"-SHIELDED TERMINATORS (FP SERIES)**



**PHYSICAL PROPERTIES**

INSULATION MATERIAL: Thermoplastic rated UL 94V-0.  
 SHIELD: Steel Can.  
 CONTACTS: High strength copper alloy; 30 μ inches minimum gold over 50 μ inches nickel in contact zone.

**ELECTRICAL PROPERTIES**

WATTAGE RATING: 1/8 Watt  
 MAXIMUM OPERATING VOLTAGE: 50 volts

**ENVIRONMENTAL PROPERTIES**

TEMPERATURE RATING: 0°C to 70°C

**CONFIGURATION:**

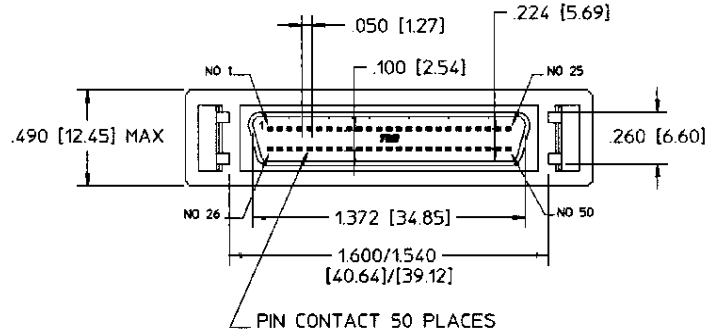
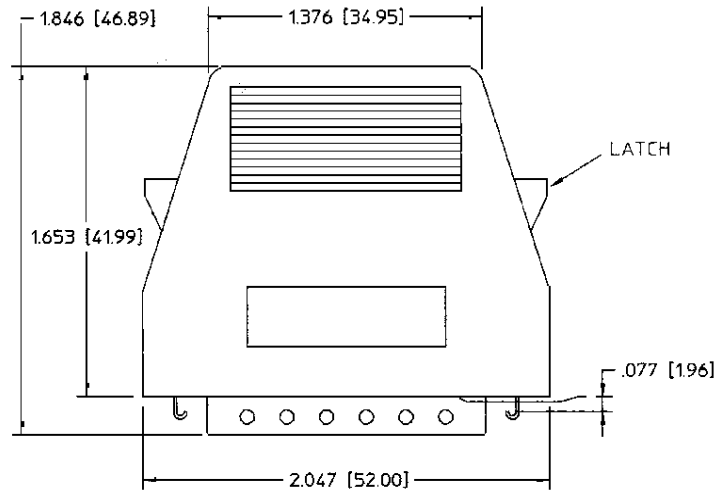
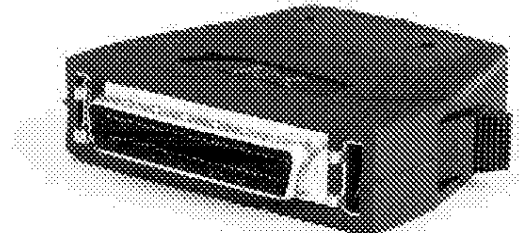
External, end-of-line, shielded

**APPLICATION:**

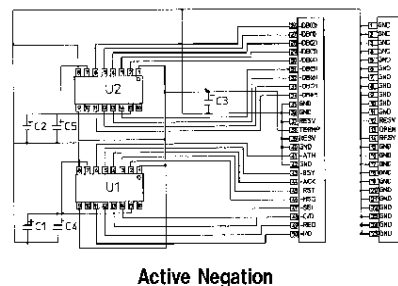
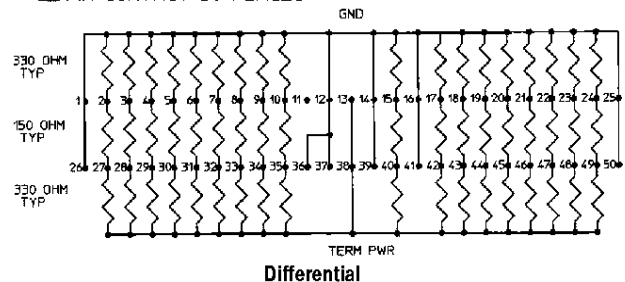
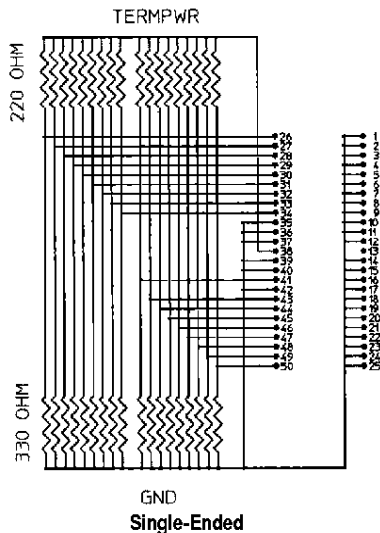
SCSI-2 & SCSI-3 systems. Shield allows use in equipment with separate enclosures.

**RECOMMENDED MATING CONNECTORS:**

- HFR050RA29JS1
- HFR050RA29JX1
- HFR050RA29NS1
- HFR050RA29NX1



PART NUMBER	TITLE
TRM050FPPO	Single-Ended
TRM050FPDIFO	Differential
TRM050FPANO	Active Negation



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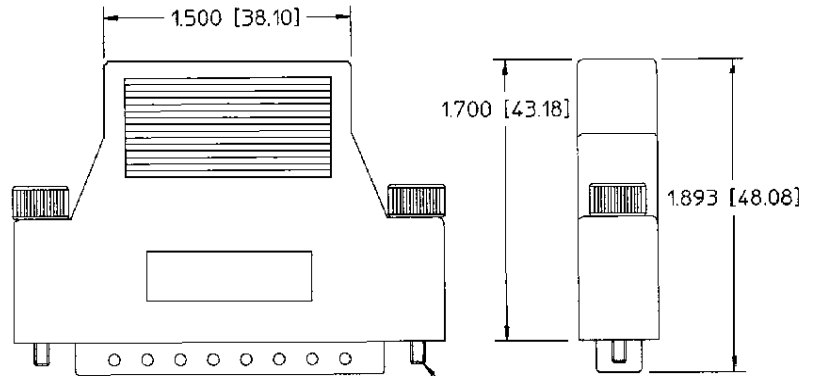
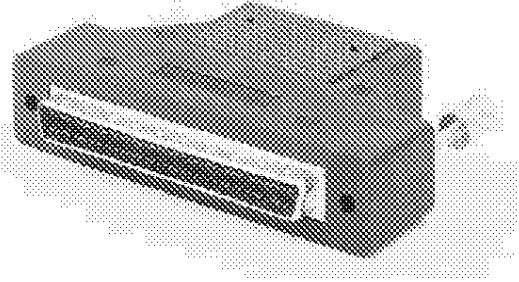
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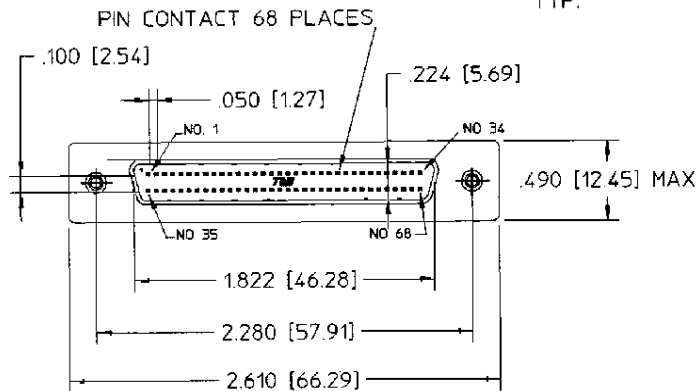
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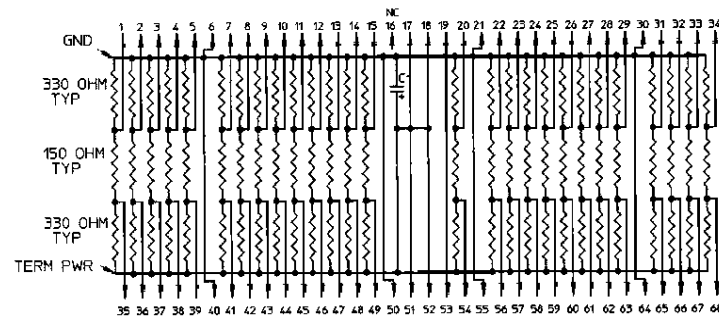
- HFR068RA29BS1
- HFR068RA29CSI
- HFR068RA29BX1
- HFR068RA29CX1



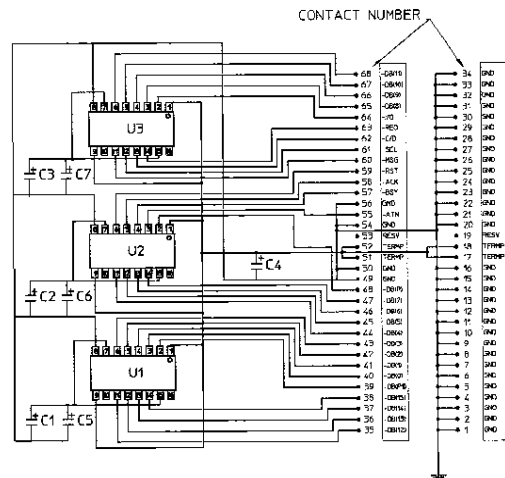
2-56 JACKSCREW TYP.



PART NUMBER	STYLE
TRM068FPDIFO	Differential
TRM068FPANO	Active Negation



Differential



Active Negation