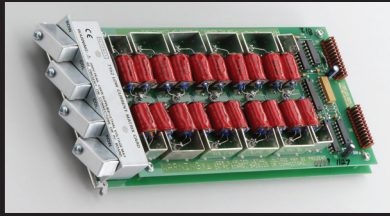


## 7152



- Sub-pA offset current
- Easy interconnect and expansion
- Maximum signal 200V and 1A
- Standard mass terminated cable accessories

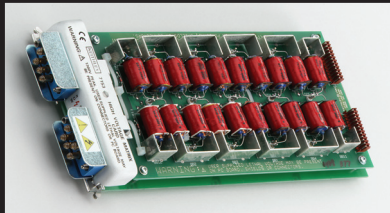
## Ordering Information

7152 4x5 Low Current Matrix Card

## Accessories Supplied

Connector caps

## 7153



- 1300V switching
- Sub-pA offset current
- 2-pole switching
- Mass termination connectors

## Ordering Information

7153 4x5 High Voltage Low Current Matrix Card

## 4x5 Low Current Matrix Card

The Model 7152 is an ideal solution for small to moderate-size matrix systems that require superior performance in DC isolation for measurements of semiconductor parameters and insulating properties of materials. Offset current is  $<1\text{pA}$  with path isolation  $>10^{13}\Omega$ . Each matrix crosspoint is a two-pole relay with the ability to switch both signal and guard.

Interconnect, expansion of the matrix, and connection to instruments and devices are easily accomplished using two standard interconnect cable assemblies. The 7152-MTC cables are terminated at both ends with M-series connector blocks for quick expansion between cards and connection to 7152-MTR bulkhead receptacles. 7152-TRX cables are terminated at one end with M-series connectors and at the other end with 3-lug triaxial connector shells for direct connection to electrometers and SMUs.

**MATRIX CONFIGURATION:** 4 rows by 5 columns.

**CROSSPOINT CONFIGURATION:** 2-pole Form A (Signal and Guard).

**RELAY DRIVE CURRENT:** 20mA (per crosspoint).

**PEAK CONTACT RATING:** 200V 1A carry/0.5A switched. 10VA (resistive load).

**PEAK VOLTAGE: Common Mode:** 200V (Signal or Guard to Chassis). **Path-Path:** 200V (Signal or Guard to Signal or Guard).

**CONTACT LIFE:**  $10^8$  closures (cold switching),  $10^5$  closures (at maximum signal level).

**ACTUATION TIME:**  $<2\text{ms}$  exclusive of mainframe.

**ISOLATION: Path:**  $>10^{13}\Omega$  and  $<1\text{pF}$ . **Differential:**  $>10^{11}\Omega$  and  $<100\text{pF}$ . **Common Mode:**  $>10^9\Omega$  and  $<300\text{pF}$ .

**CROSSTALK:**  $<-50\text{dB}$  at 1 MHz, 50 $\Omega$  load.

**INSERTION LOSS:** 0.1dB typical (1MHz, 50 $\Omega$  source, 50 $\Omega$  load).

**3dB BANDWIDTH:** 60MHz typical (50 $\Omega$  load).

**OFFSET CURRENT:**  $<1\text{pA}$  (10fA typical).

**CONTACT POTENTIAL:** 20 $\mu\text{V}$  per contact typical.

## ACCESSORIES AVAILABLE

## PRE-BUILT CABLES

7152-MTC-2 Low Noise M-Series to M-Series Cable, 2ft.

7152-MTC-10 Low Noise M-Series to M-Series Cable, 10ft.

7152-TRX-10 Low Noise M-Series to Triax Cable, 10ft.

## M-SERIES BULKHEAD CONNECTORS

7152-KIT M-Series Plug for custom wiring

7152-MTR M-Series Receptacle for 7152-MTC-\* Cables and 7152-KIT Plug

## REQUIRED TOOLS FOR BULKHEAD CONNECTORS

7074-CIT Extraction Tool for 7152-KIT and 7152-MTR shield contacts

7074-HCT Hand Crimp Tool for 7152-KIT and 7152-MTR shield contacts

7152-HCT Hand Crimp Tool for 7152-KIT and 7152-MTR coaxial contacts

## 4x5 Low Current Matrix Card High Voltage

The Model 7153 is designed to switch low level, high voltage, and high impedance signals for applications such as parametric tests on semiconductor devices. The 7153 allows signal levels up to 1300V while maintaining offset current of  $<1\text{pA}$  (typically 10fA) and path isolation  $>10^{13}\Omega$ . Each crosspoint is a 2-pole relay to switch both signal and guard. Interconnect between the matrix and instruments such as the 237 SMU is done with the 7153-TRX cable. This cable has an M-series connector for the matrix and five 3-slot male triax connectors at the opposite end. The cable will mate with the row or column connectors of the Model 7153.

**MATRIX CONFIGURATION:** 4 rows by 5 columns.

**CROSSPOINT CONFIGURATION:** 2-pole Form A (Signal and Guard).

**CONNECTOR TYPE:** Miniature coax, M-series plug.

**RELAY DRIVE CURRENT:** 40mA (per crosspoint).

**MAXIMUM SIGNAL LEVEL:** 1300V between any 2 signal pins or chassis; 200V between Signal and Guard. 1A carry/0.5A switched. 10VA peak (resistive load).

**CONTACT LIFE:**  $10^8$  closures (cold switching),  $10^5$  closures (at maximum signal level).

**PATH RESISTANCE:**  $<1\Omega$  per contact to rated life.

**ACTUATION TIME:**  $<2\text{ms}$  exclusive of mainframe.

**ISOLATION: Path:**  $>10^{13}\Omega$  and  $<1\text{pF}$ . **Differential:**  $>10^{11}\Omega$  and  $<100\text{pF}$ . **Common Mode:**  $>10^9\Omega$  and  $<300\text{pF}$ .

**CROSSTALK:**  $<-50\text{dB}$  at 1MHz, 50 $\Omega$  load.

**INSERTION LOSS:** 0.1dB typical (1MHz, 50 $\Omega$  source, 50 $\Omega$  load).

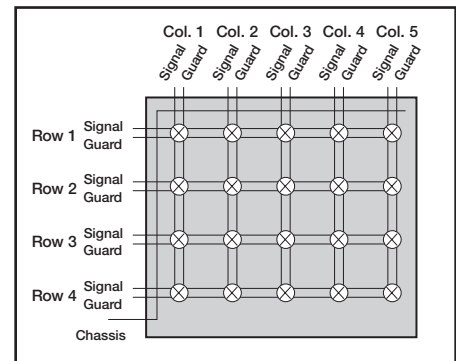
**3dB BANDWIDTH:** 60MHz typical (50 $\Omega$  load).

**OFFSET CURRENT:**  $<1\text{pA}$  (10fA typical).

**CONTACT POTENTIAL:**  $<50\mu\text{V}$  typical.

## ACCESSORIES AVAILABLE

7153-TRX Low Noise M-Series to Triax Cable, 5ft.



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