## 7153



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


## Ordering Information

$7153 \quad 4 \times 5$ High Voltage Low Current Matrix Card

7154


- $\mathbf{1 1 0 0}$ volts peak
- 2-pole switching
- High and low fused


## Ordering Information

## 7154 High Voltage Scanner Card

## $4 \times 5$ Low Current Matrix Card

 High VoltageThe 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 1300 V while maintaining offset current of $<1 \mathrm{pA}$ (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 Model 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: 40 mA (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: $<2 \mathrm{~ms}$ exclusive of mainframe.
ISOLATION: Path: $>10^{13} \Omega$ and $<1 \mathrm{pF}$. Differential: $>10^{11} \Omega$ and
$<100 \mathrm{pF}$. Common Mode: $>10 \Omega$ and $<300 \mathrm{pF}$.

CROSSTALK: <- 50 dB at $1 \mathrm{MHz}, 50 \Omega$ load.
INSERTION LOSS: 0.1 dB typical ( $1 \mathrm{MHz}, 50 \Omega$ source, $50 \Omega$ load). 3 dB BANDWIDTH: 60 MHz typical ( $50 \Omega$ load).
OFFSET CURRENT: <1pA (10fA typical).
CONTACT POTENTIAL: $<50 \mu \mathrm{~V}$ typical.
ACCESSORIES AVAILABLE
7153-TRX Low Noise M-Series to Triax Cable, 5 ft .
SERVICES AVAILABLE
7153-3Y-EW $\quad$ 1-year factory warranty extended to 3 years from date of shipment


## High Voltage Scanner Card 10-channel

The Model 7154 switches voltages to 1100 V peak or currents to 0.5 A . The current carry capacity of each relay contact is 1A. Two-pole relays switch both circuit High and Low for full floating measurements and each input line is fuse protected against current overload. A Guard input common to all channels is provided for shielding or as a Guard driven from a single instrument. Guards may be isolated by removing jumpers installed at each input. Multiple switched guard circuits can be achieved by removing the jumper and connecting circuit Guard to the Low input terminal.

CHANNELS PER CARD: 10.
CONTACT CONFIGURATION: 2-pole Form A with userselectable shield or driven Guard. Each pole is fused using \#38AWG magnet wire.
CONNECTOR TYPE: Screw terminals, \#16AWG maximum wire size.
RELAY DRIVE CURRENT: 57 mA per relay typical.
MAXIMUM SIGNAL LEVEL: 1100 V peak, 0.5 A DC or rms switched, 1A DC or rms carry, 10W.
CONTACT LIFE: $>10^{8}$ closures (cold switching); $>5 \times 10^{6}$ clo sures (at maximum signal level).
CONTACT RESISTANCE: $<200 \mathrm{~m} \Omega$ initial, $2 \Omega$ to rated life.

CONTACT POTENTIAL: $<35 \mu \mathrm{~V}$ per contact pair with copper leads. ACTUATION TIME: $<2 \mathrm{~ms}$ exclusive of mainframe
CHANNEL ISOLATION: $10^{10} \Omega,<10 \mathrm{pF}$.
INPUT ISOLATION: Differential: $>10^{\circ} \Omega,<10 \mathrm{pF}$
Common Mode: $>10^{9} \Omega,<150 \mathrm{pF}$.
COMMON MODE VOLTAGE: 1100 V peak
ENVIRONMENT: Operating: $0^{\circ}$ to $50^{\circ}$ up to $35^{\circ} \mathrm{C}$ at $70 \%$ R.H.
Storage: $-5^{\circ}$ to $+65^{\circ} \mathrm{C}$
SERVICES AVAILABLE

## 7154-3Y-EW $\quad$ 1-year factory warranty extended to 3 years from date of shipment


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