7072-HV

High Voltage Semiconductor Matrix Card
8×12

- **Two 1300V, sub-picoamp current paths**
- **Six 200V, 20pA paths**
- **For use with Model 2410 and Model 237 SMU**
- **3-lug triaxial connections**
- **Compatible with Models 707A, 707B, 708A, and 708B**

Ordering Information

7072-HV 8×12 High Voltage Semiconductor Matrix Card

The Model 7072-HV is designed to switch low-level, high-voltage, and high-impedance signals for semiconductor parametric tests on wafers and devices. This unique design provides two signal paths capable of switching 1300V with less than 1pA of offset current. The two C-V paths may be used for measurement of capacitance voltage characteristics from DC to 1MHz or for switching low currents with a common ground. Four additional high quality signal paths with less than 20pA offset current provide for signal switching to 200V.

Connections are 3-lug triax with the outer shell connected to chassis for safety and noise shielding. The center conductor is fully surrounded by the inner conducting shield to provide fully guarded measurements with higher isolation and improved measurement speed and accuracy.

7072-HV Applications

The Model 7072-HV, in conjunction with the Model 237 SMU, 2410 SourceMeter® instrument, Model 6487 Picoammeter/Voltage Source, or Model 6517B Electrometer/High Resistance Meter, can address a wide variety of semiconductor device and material characterization needs.

The high voltage signals encountered in breakdown measurements or oxide integrity testing can be easily switched with this matrix card. Signals connected to the High V, Low I paths are automatically isolated from the rest of the card.

For applications requiring connections to a large number of devices or test points, the 7072-HV matrix can be expanded with additional cards. The high voltage and C-V rows can be extended to other cards with coaxial jumpers. The other four high-quality signal paths connect directly to the 707A or 708A backplane for expansion.

ACCESSORIES AVAILABLE

237-TRX-T	3-Lug Triax Tee Adapter
237-TRX-TBC	3-Lug High Voltage Female Triax Bulkhead Connector
7078-TRX-3	3-Lug Triax Cable, 0.9m (3 ft)
7078-TRX-10	3-Lug Triax Cable, 3m (10 ft)
7078-TRX-BNC	3-Lug Triax to BNC Adapter

FOR USE AT 200V OR LESS

7078-TBC	3-Lug Female Triax Bulkhead Connector with Cap

SERVICES AVAILABLE

7072-HV-3Y-EW	1-year factory warranty extended to 3 years from date of shipment

MATRIX CONFIGURATION: 8 rows by 12 columns.

CONNECTOR TYPE: Three-lug triaxial (Signal, Guard, Chassis).

CONTACT LIFE: Cold Switching: 10^7 closures.
  At Maximum Signal Level: 10^5 closures.

PATH RESISTANCE (per conductor): <1Ω initial, <3.5Ω at end of contact life.

RELAY SETTLING TIME: <15ms.

INSERTION LOSS (1MHz, 50Ω source, 50Ω load): 0.1dB typical.
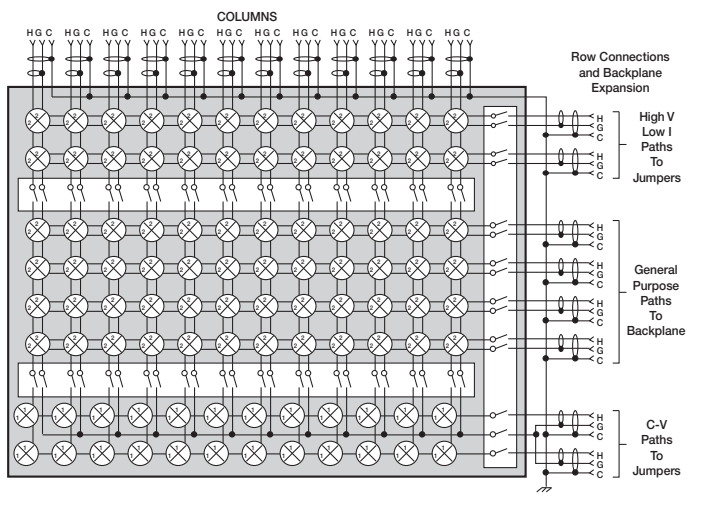
EMC: Conforms to European Union Directive 89/336/EEC.

SAFETY: Conforms to European Union Directive 73/23/EEC (meets EN61010-1/IEC 1010).

ENVIRONMENT:
  OFFSET CURRENT and PATH ISOLATION Specifications: 23°C, <60% R.H.
  Operating: 0° to 50°C, up to 35°C at 70% R.H. **Storage:** –25° to +65°C.

	Low Current (Rows A—B)	General Purpose (Rows C—F)	C-V (Rows G—H)
CROSSPOINT CONFIGURATION	2-pole Form A	2-pole Form A	1-pole Form A, Common Guard
OFFSET CURRENT	<1 pA	<20 pA	<20 pA
PATH ISOLATION:			
Resistance	>10^{13} Ω	>10^{12} Ω	>10^{12} Ω
Capacitance (nominal)	0.4 pF	1 pF	0.6 pF
CROSSTALK:			
1 MHz, 50Ω load (typical)	<−60 dB	<−40 dB	<−50 dB
3dB BANDWIDTH (typical), 50Ω Load	4 MHz	8 MHz	5 MHz
MAXIMUM SIGNAL LEVEL			
Maximum between any 2 pins or chassis:	1300 V	200 V	200 V
Maximum between signal & guard: 1A carry/0.5A switched, 10VA peak (resistive load)	200 V	200 V	200 V
CONTACT POTENTIAL (Signal to Guard):	<50 µV	<20 µV	<40 µV