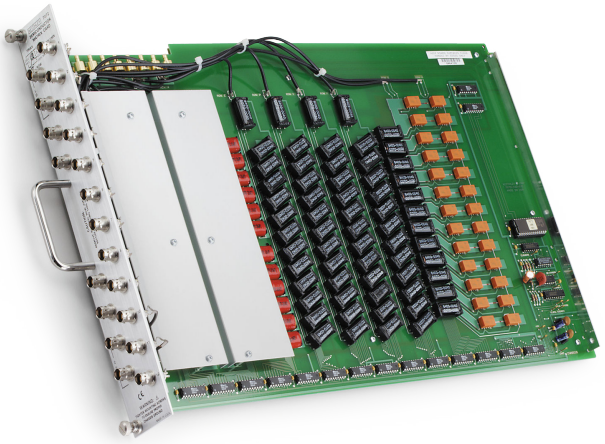
7072

8x12 Semiconductor Matrix Card



The Model 7072 Semiconductor Matrix Card is designed specifically to handle low-level and high-impedance measurements encountered in semiconductor parametric tests on wafers and devices. This unique design provides two low-current circuits with specified 1pA maximum offset current for sensitive sub-picoamp measurement resolution and two C-V paths for measurement of Capacitance Voltage characteristics from DC to 1 MHz. Four additional high-quality signal paths with <20 pA offset current provide for general-purpose signal switching up to 100 nA or 200 V.

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, so that fully guarded measurements can be made to achieve higher isolation and to improve measurement speed and accuracy.

Isolation relays on the low-current and C-V paths automatically disconnect unused circuits to achieve minimum interference and peak performance. The 707B or 708B mainframe allows each row (signal path) to be programmed for Break-Before-Make or Make-Before-Break operation.

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

Key Features

- Two sub-picoamp current paths
- Two DC to 1 MHz C-V paths
- Four high isolation signal paths
- 3-lug triaxial connection
- Compatible with Models 707A, 707B, 708A, and 708B

Specifications

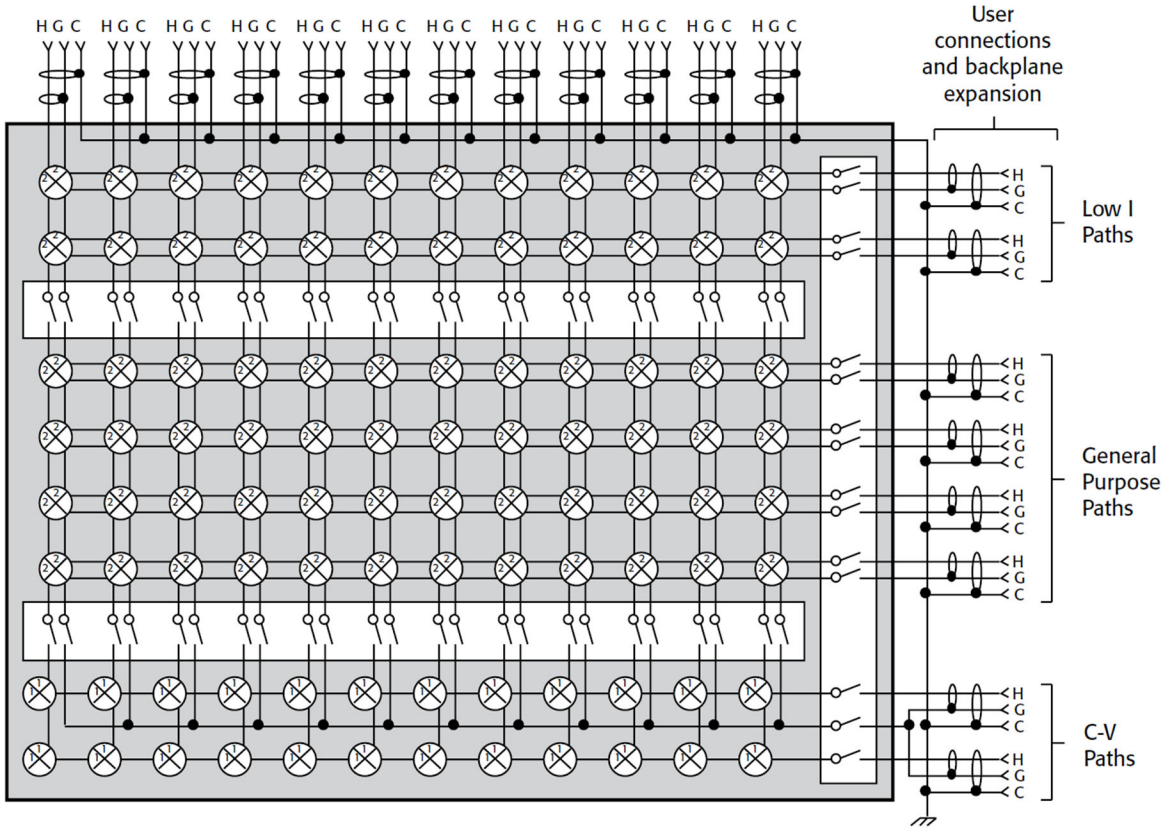
Specifications are subject to change without notice.

Matrix Configuration	8 rows by 12 columns.
Connector Type	Three-lug triaxial (Signal, Guard, Chassis).

Maximum Signal Level	200 V, 1 A carry/0.5 A switched, 10 VA peak (resistive load).
Common Mode Voltage	200 V maximum between any 2 pins or chassis.
Contact Life	**Cold Switching:** 10^7 closures. **At Maximum Signal Level:** 10^5 closures.
Path Resistance (Per Conductor)	<1 Ω initial, <3.5 Ω at end of contact life.
Contact Potential	<40 µV per crosspoint (Signal to Guard).
Relay Settling Time	<15 ms.
Insertion Loss	1 MHz, 50 Ω source, 50 Ω load: 0.1 dB typical.
EMC	Conforms to European Union EMC Directive.
Safety	Conforms to European Union Directive 73/23/ EEC (meets EN61010-1/IEC 1010).
Environment	For indoor, non-residential use only. **Offset Current and Path Isolation Specifications:** 23°C, <60% relative humidity. **Operating:** 0°C to 50°C, up to 35°C at 70% relative humidity. **Storage:** −25° to +65°C.
Warranty	1 year.

Crosspoint Configuration

		Low Current (Rows A to B)	General Purpose (Rows C to F)	C-V (Rows G to 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, 50 Ω load (typical)**	<–50 dB	<–40 dB	<–50 dB
	3 dB Bandwidth (typical), 50 Ω Load	15 MHz	8 MHz	5 MHz



Ordering Information

7072	8×12 Semiconductor Matrix Card

Supplied Accessories

CA-54-1	SMB Expansion Cables (4)

Available Accessories

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

Services Available

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

Contact Information:

Australia 1 800 709 465
Austria* 00800 2255 4835
Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777
Belgium* 00800 2255 4835
Brazil +55 (11) 3530-8901
Canada 1 800 833 9200
Central East Europe / Baltics +41 52 675 3777
Central Europe / Greece +41 52 675 3777
Denmark +45 80 88 1401
Finland +41 52 675 3777
France* 00800 2255 4835
Germany* 00800 2255 4835
Hong Kong 400 820 5835
India 000 800 650 1835
Indonesia 007 803 601 5249
Italy 00800 2255 4835
Japan 81 (3) 6714 3086
Luxembourg +41 52 675 3777
Malaysia 1 800 22 55835
Mexico, Central/South America and Caribbean 52 (55) 88 69 35 25
Middle East, Asia, and North Africa +41 52 675 3777
The Netherlands* 00800 2255 4835
New Zealand 0800 800 238
Norway 800 16098
People's Republic of China 400 820 5835
Philippines 1 800 1601 0077
Poland +41 52 675 3777
Portugal 80 08 12370
Republic of Korea +82 2 565 1455
Russia / CIS +7 (495) 6647564
Singapore 800 6011 473
South Africa +41 52 675 3777
Spain* 00800 2255 4835
Sweden* 00800 2255 4835
Switzerland* 00800 2255 4835
Taiwan 886 (2) 2656 6688
Thailand 1 800 011 931
United Kingdom / Ireland* 00800 2255 4835
USA 1 800 833 9200
Vietnam 12060128
*** European toll-free number. If not accessible, call:** +41 52 675 3777

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