

# Pyrana™ -RF

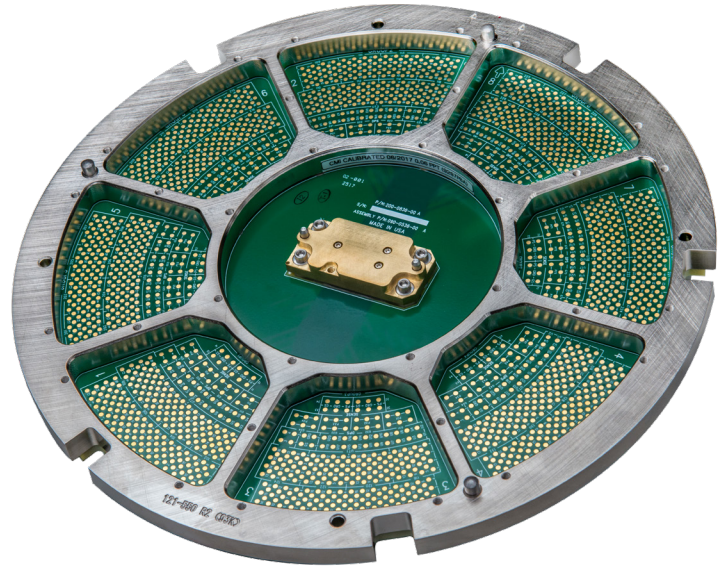
## RF-MEMS Probe Cards and Custom Probe Heads

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### ➤ Overview

For RF devices up to 10 GHz and inductance-sensitive applications, Pyrana probe cards provide excellent signal integrity, low ground inductance, long lifetime, and individually compliant contacts. Pyrana probe cards combine the best features of two types of probe cards – Pyramid Probe® cards and Katana-RF probe cards. The Pyrana probe cards integrate robust Katana MEMS probe technology with Pyramid Probe's thin-film technology, delivering a previously unavailable combination. Each contact is individually replaceable for ease of repair.

Pyrana series probe cards enable reduced cost through long lifetime, ease of repair, and repeatable measurements. Additionally, Pyrana probe cards offer the possibility of generic, reusable printed circuit boards (PCBs), that can cover multiple different products for reduced total investment.

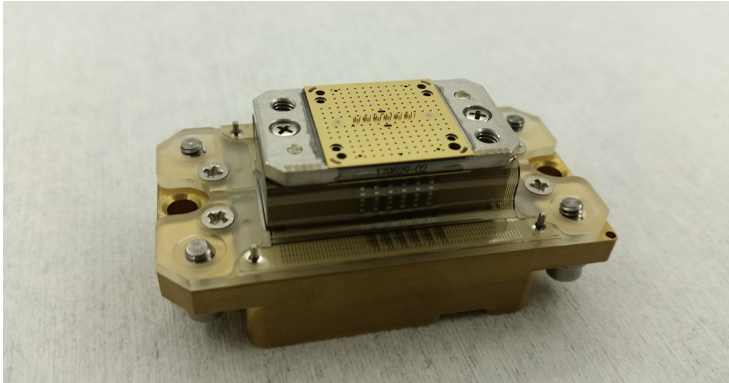


### ➤ Features / Benefits

<b>Measurement accuracy</b>	<ul style="list-style-type: none"><li>• Excellent signal integrity out to 45 GHz</li><li>• Consistent and low contact resistance</li><li>• Stable power supplies with bypass capacitors</li></ul>
<b>High test efficiency</b>	<ul style="list-style-type: none"><li>• Straightforward cleaning and maintenance</li><li>• Minimum contact force for low damage</li><li>• Easily replaceable probes</li></ul>
<b>Low cost of test</b>	<ul style="list-style-type: none"><li>• Long probe card lifetime</li><li>• Individually replaceable probes</li></ul>
<b>Versatility</b>	<ul style="list-style-type: none"><li>• Pyrana offers potential of generic PCBs to support families of similar devices</li><li>• Katana-RF accommodates large die, unique die layouts, etc.</li></ul>

## ➤ Pyrana-RF Size Options and Naming – Probe Heads

Size	PV6	PV10	PV35	PV75
Available probe area (mm)	6x6	10x10	35x10	75x12
Max IO	400	560	1400	2800



Pyrana probe core

## ➤ Mechanical Performance

Minimum pitch, single row	74 $\mu\text{m}$ (K80)
Minimum pitch, array	80 $\mu\text{m}$ < 10 GHz, 106 $\mu\text{m}$ for up to 45 GHz
Probe tip shapes	Flat (for bump applications) or pointed (for pad applications)
Probe tip size (flat)	55x51 $\mu\text{m}$ and 76x51 $\mu\text{m}$
Probe tip size (pointed)	16x13.5 $\mu\text{m}$
Probe tip material	ProbAlloy
Temperature range	-40°C to 140°C
Pad and bump materials	Al, Cu, Au, all types of solder balls
Probe force	2.2 g at 75 $\mu\text{m}$ overtravel (K150), 3.3 gf for BW > 10 GHz at 75 $\mu\text{m}$ OT
Probe length	2.79 mm
Max overtravel	100 $\mu\text{m}$ for < 10 GHz, and 75 $\mu\text{m}$ for > 10 GHz
Probe to probe compliance	$\pm$ 100 $\mu\text{m}$
Individually replaceable probes	Yes

## > Electrical Performance

Leakage	<7 nA @ 3V
Contact resistance	<500 mOhm (typical)
Maximum current / probe	800 mA (K80)
Maximum power 50 Ω microstrip	+33 dBm CW, +36 dBm pulsed
Bandwidth	DC to 45 GHz
Signal line impedance	50 Ω nominal
Return loss (S11)	>10 dB @ specified bandwidth
Insertion loss (S21)	<3 dB @ up to 6 GHz
Input reflection	±80 mrho @ 50 Ω
Isolation	>30 dB out to 10 GHz (typical)
Maximum current per power supply	10 A
Range of trace impedances	2 Ω to 120 Ω ±20%
Custom line match	±3 ps (6 ps window)
Residual Inductance	<0.10 nH

## > Warranty

Warranty*	6 months
Service contracts	Single- and multi-year programs available to suit your needs

\* See FormFactor's Terms and Conditions of Sale for more details.

## > Ordering Information

Consult factory for more detailed specifications, additional options, suitability of configuration for intended usage, part numbers, pricing and delivery.

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