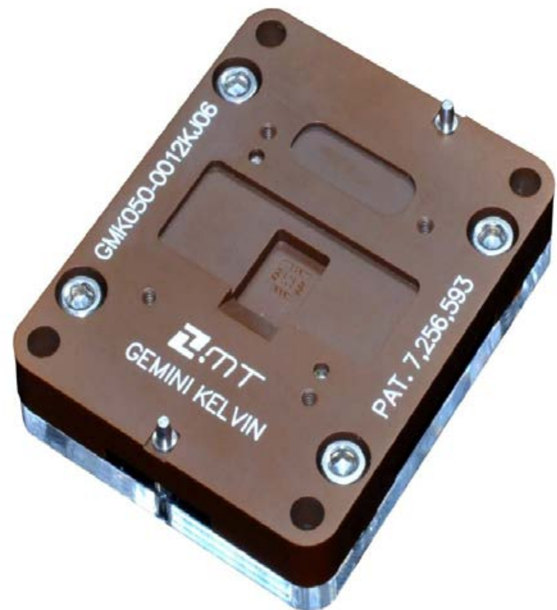
Gemini™ Kelvin

Contactor for In-Line AND Array Packages



Features:

- dedicated platings for lead-free devices
- for power controllers, data converters, amplifiers, comparators
- for in-line and array packages
- frequency requirements to 21 GHz
- pitches down to 0.3 mm
- for singulated devices, strip test, or wafer-level test

Benefits:

- field-proven long life
- robust spring probe
- excellent targeting stability
- minimum Kelvin-pair tip spacing of 83 µm to land on small targets

RF / Analog

Digital

Power / Sensor

Wafer Level Test

Rev20170505

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measured by your success

Contactor for In-Line AND Array Packages

1. Packages and Application

1.1 Packages
- grid array packages: BGA, LGA, WLP – full arrays at 0.4 mm pitch and up
- leaded packages: QFP, TSOP – 0.3 mm pitch and up
- leadless packages: QFN, MLF, others – 0.3 mm pitch and up
- singulated packages, strip test, in-carrier, and wafer-level test

2. Environmental

2.1 Temperature Range
- -55° C +155° C

3. Reliability*

3.1 Typical Probe Life
- 500 k to 800 k cycles
- Probe cleaning 50 k to 75 k

4. Electrical

4.1 Bandwidth @ -1 dB Insertion Loss
- GMK030 single probe: 3.9 GHz
- GMK030 dual probe: 17 GHz
- GMK040 single probe: 21 GHz
- GMK040 dual probe: 10 GHz

4.2 Loop Inductance
- GMK030 single probe: 1.8 nH
- GMK030 dual probe: 1.01 nH
- GMK040 single probe: 1.1 nH
- GMK040 dual probe: 0.72 nH

4.3 Typical Contact Resistance**
- GMK030 single probe: 150 mΩ
- GMK030 dual probe: 80 mΩ
- GMK040 single probe: 70 mΩ
- GMK040 dual probe: 40 mΩ

4.4 Current Carrying Capacity
- 20° Celsius Temperature Rise
  GMK030: 1.1 A continuous
  GMK040: 1.8 A continuous
- maximum @ 1% duty cycle
  GMK030: > 3A
  GMK040: > 8 A

specifications are subject to change without notification and are for reference only. use contactor drawing to design interface hardware.

*cleaning frequency and life specifications are estimates based on customer feedback. actual values are dependent on the application (DUT materials, handler kit, maintenance, etc.)
** typical resistance measured between Au plated sheets

5. Mechanical

5.1 Contact Pitches Supported
- 0.4 mm and up (full array)
- 0.3 mm and up (in-line)

5.2 Contact Force at Test Height
- GMK030: 0.15 N (15 g)
- GMK040: 0.25 N (25 g)

5.3 Test Height
- GMK030: 3.46 mm
- GMK040: 3.22 mm
- GMK040BGA: 3.41 mm

5.4 Pin Travel at Test Height
- GMK030: 310 µm
- GMK040: 440 µm

5.5 DUT Tip Style: Offset, Sharp Edge
- GMK030: super-sharp
- GMK040: 0.15 mm radius or super-sharp

5.6 Minimum DUT Tip Spacing
- GMK030: 83 µm
- GMK040: 100 µm

5.7 PCB Tip Style
- GMK030: 0.1 mm radius
- GMK040: 0.125 mm radius

5.8 PCB Tip Spacing
- GMK030: 0.283 mm (@ 83 µm DUT tip spacing)
- GMK040: 0.4 mm (@ 100 µm DUT tip spacing)

6. Materials

6.1 Housing Material
- Vespel SP-1
- others available

6.2 Spring Probe Material
- hard, proprietary alloy

6.3 Spring Material
- stainless steel

6.4 Plating Material
- hard gold

7. Configurations / Interface Options

7.1 Automated Test
- handler specific design/configuration
- optional manual actuator
- e-beam probe support
- custom configurations

All performance figures such as MTBF, MTBA, Uptime, Yield, Jam Rate, Life Span, Cleaning Cycles etc. can vary with specific package type, test program and / or specific application environment. They assume that only original Multitest spare and consumable parts are used, recommended maintenance intervals and procedures are respected, operators/maintenance technicians have successfully participated in formal equipment training by Multitest to the appropriate level, and only Multitest approved software is used on the systems. Multitest assumes no warranty or liability if any of these requirements is not met. All listed data are for information only. For binding specification please contact your sales person.

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