

HyperGrid™ Fine Pitch Connectors

- Solderless compression contacts; no elastomers or fuzz buttons
- 37 GHz bandwidth capability
- Tested to EIA standard 364
- 15g random vibration; 100g shock
- Consistent resistance
- Down to 0.5mm contact pitch
- Completely scalable and customizable
- Supports column or grid arrays
- Adheres to any standard footprint

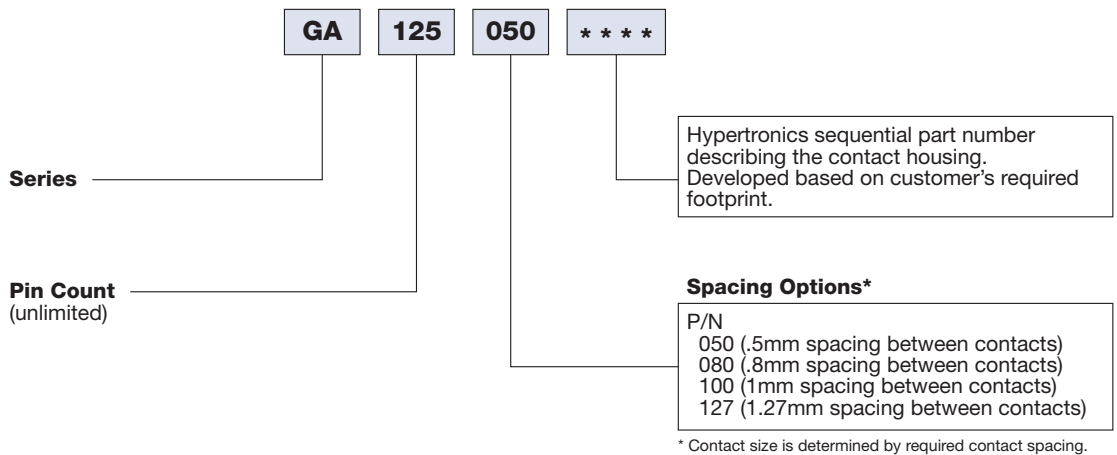
Technical Characteristics

Mechanical Specifications	
Pitch	0.5mm, 0.8mm, 1mm, 1.27 mm
Test Height	0.81 - 2.28 mm
Full Travel	0.15 - 0.50 mm
Recommended Travel	0.10 - 0.38 mm
Overall Length	0.91 - 2.67 mm
Contact Force	10 - 45 grams
Electrical Specifications	
Current Rating	Up to 2.5 amps
Self Inductance	Down to .5 nH
Characteristic Impedence	56 ohms
< - 1 dB Bandwidth	Up to 37 GHz
DC Resistance	< 50 milliohms

Contact Current Rating	Pitch	Co-Planarity	Force	Test Height	Full Travel	Recommended Travel	Free Length
0.5mm 1.0 amp	0.5mm	0.003 - 0.006in	20 grams	0.032in (0.81mm)	0.006in (0.15mm)	0.004in (0.10mm)	0.036in (0.91mm)
0.8mm 1.5 amp	0.8mm	0.005 - 0.009in	25 grams	0.062in (1.65mm)	0.010in (0.25mm)	0.007in (0.18mm)	0.069in (1.75mm)
1.0mm 2.0 amp	1.0mm	0.008 - 0.12in	30 grams	0.080in (2.03mm)	0.015in (0.38mm)	0.010in (0.25mm)	0.090in (2.29mm)
1.27mm 2.5 amp	1.27mm	0.007 - 0.013in	35 grams	0.090in (2.28mm)	0.020in (0.51mm)	0.015in (0.38mm)	0.105in (2.67mm)

Hypertronics' recommendations for co-planarity varies by board thickness, pitch, array layout and mounting options. Larger co-planarity tolerances can be accommodated by increasing contact travel parameters.

Ordering Information



Note:
Please have your contact and housing requirements prepared when you contact our sales department to order an HyperGrid product.

HyperGrid Technology - Key Data

RF Characteristics

- Insertion loss at less than -1dB to 24 GHz in .5mm configuration
- Insertion loss at less than -1db to 37 GHz in 1mm configuration

Pitch capabilities

- 0.5mm, 0.8mm, 1mm and 1.27 mm product family
- Custom designs are possible

Self-Inductance (0.5nH at 0.5mm pitch)

- Lower inductance than pogo pins = better contactor invisibility

Current carrying capacity

1mm Contact		1.27mm Contact	
1 Contact	3.30 AMPS	1 Contact	3.55 AMPS
2 Contacts	2.40 AMPS	2 Contacts	3.10 AMPS
4 Contacts	1.90 AMPS	4 Contacts	2.25 AMPS

30° temperature rise measured

HyperGrid contact technology - Shock and vibration test data

1mm Pitch Contact

- PASSED Specification EAI 364 Test Procedures 27, 28
- Vibration Sinusoidal Low Level Contact Resistance
 - AVG: 71.7 mOhms
 - STD: 8.4 mOhms
- Mechanical Shock Low Level Contact Resistance
 - AVE: 71.2
 - STD: 6.9 mOhms

1.27mm Pitch Contact

- PASSED Specification EIA 364 Test Procedures 27, 28
- Vibration Sinusoidal Low Level Contact Resistance
 - AVG: 51.7 mOhms
 - STD: 3.3 mOhms
- Mechanical Shock Low Level Contact Resistance
 - AVE: 53.6 mOhms



Contact Cavity Cross Section

HyperGrid 0.5 mm contact pitch

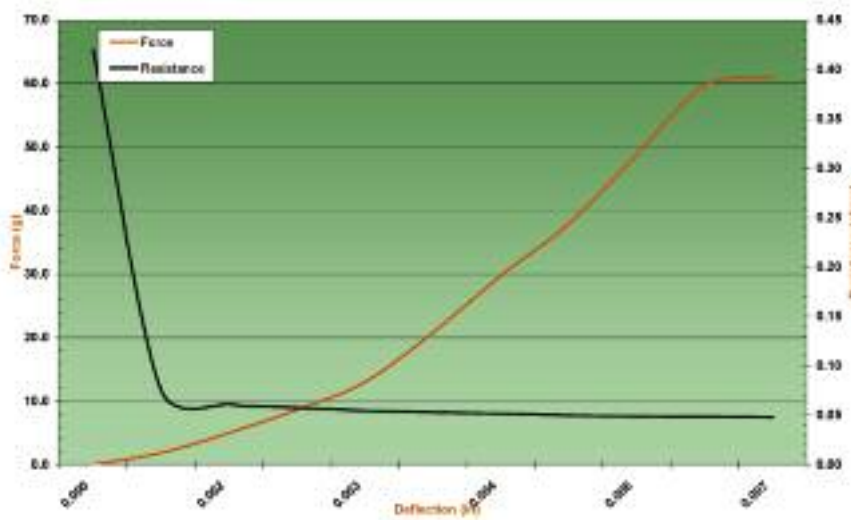
Mechanical Properties

Free Length: .36"
 Test Height: .032"
 Recommended Travel: .004"
 Recommended Force: 20 grams
 Material: BeCu, Au plating (others available)
 Cycle Life: 100,000 insertions

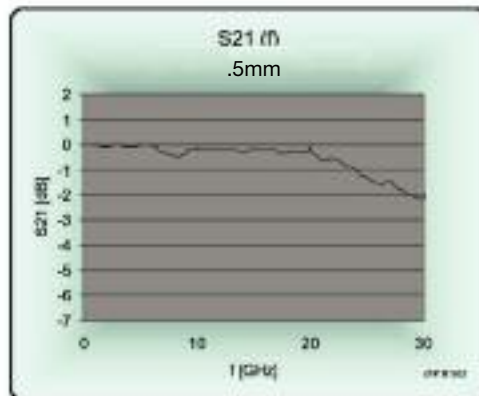
Electrical Properties

Contact Resistance: <50 mOhm
 Inductance: .5 nH
 Capacitance: .01 pF
 Current Rating: 1 AMP
 Signal Delay: 7.5 ps
 Bandwidth: 24 GHz < -1dB

0.5 mm Pitch, Redundant Contact - Force v. Deflection v. Resistance Curve



0.5 mm Pitch, Redundant Contact - S21 Bandwidth Curve



HyperGrid 1 mm contact pitch

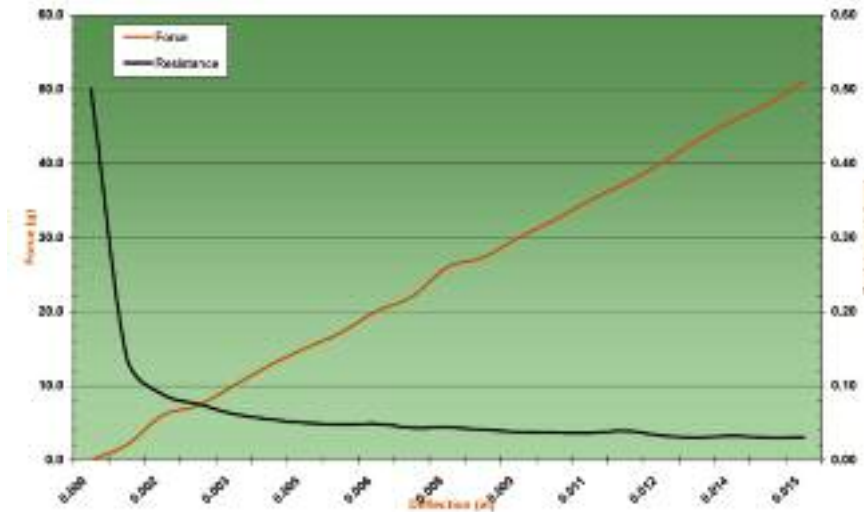
Mechanical Properties

Free Length: .085”
 Test Height: .075”
 Recommended Travel: .010”
 Recommended Force: 20 - 30 grams
 Material: BeCu, Au plating (others available)
 Cycle Life: 200,000 insertions

Electrical Properties

Contact Resistance: <50 mOhm
 Inductance: 1 nH
 Capacitance: .12 pF
 Current Rating: 3 AMPS
 Volume Resistivity: 1,000 mOhm at 100 VDC
 Insulation Resistance: 100 VAC for 1 minute
 Bandwidth: 10 GHz < -1dB

1mm Pitch, Redundant Contact - Force v. Deflection v. Resistance Curve



1mm Pitch, Redundant Contact - S21 Bandwidth Curve

