



Super pin Contacts

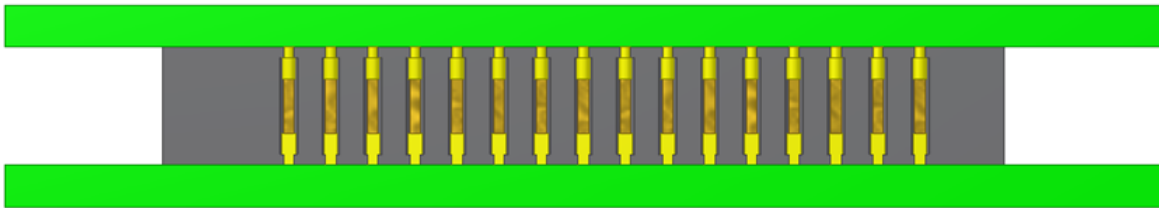
Brief Introduction:

Super pin contacts is a typical miniature connector contacts, the minimum diameter is 0.254mm (0.01”).

Super pin contacts is an advanced and high performance solderless compression connector technology that can be repeated disassembly and maintenance, can keep the best connection of the electric current and microwave in the vibration environment.

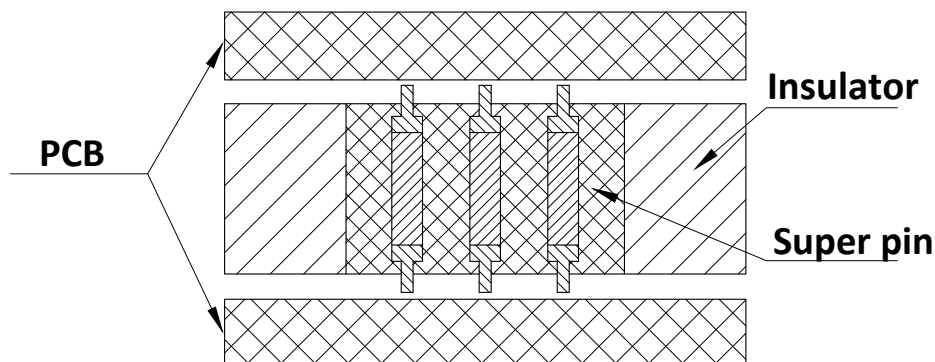
Super pin contacts with high speed signal transmission, long service life, better adaptability etc. high performance and are widely applied in the fields of both military and industry.

High signal speed capability enabling frequencies greater than 40 GHz.



Field of application:

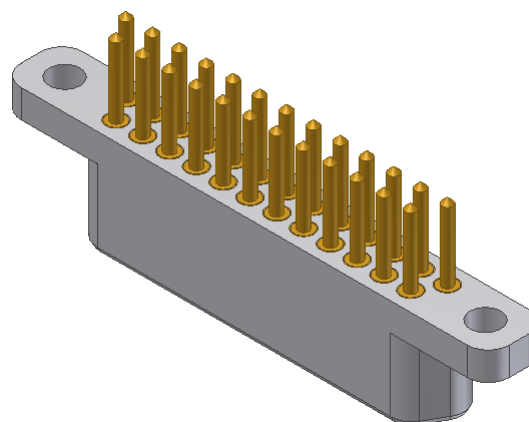
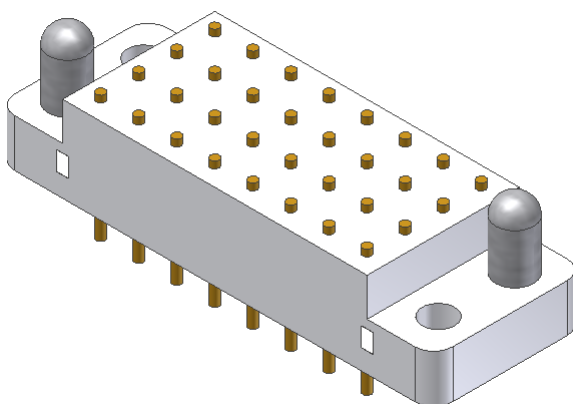
Super pin contacts can be widely used in weapons, satellite, missiles, space probe, aircraft, supercomputer, vacuum system, product testing system, IC(integrated circuit), unmanned aircraft system, UAS(Unmanned Aerospace Surveillance), jet fighter, radar array, crash-test, RF and high signal transmission etc.





Performance :

- Current Capability : 5 Amps Continuous
- Environment temperature range: -60°C~150°C
- Mating Cycles (Super pin contacts alone): > 5000 cycles
- Mating Cycles (with Hardhats) : > 500000 cycles
- Compression Force: 34 grams
- Frequency Capability: to 40 GHz in natural state, to 100 GHz with design optimization
- Compliance : 15 - 30% of length
- Cross Talk/Bandwidth: -20dB@10Ghz
- Insertion Loss/Bandwidth: -0.2dB@10GHz/-1dB@26GHz
- Return Loss/Bandwidth: -15dB@10GHz
- Inductance: 0.19nH Self / 0.03nH Mutual
- Capacitance: 0.16pF Ground / 0.008pF Mutual
- Contact resistance: <10mΩ



Testing sample:

Part no.		SKFB-0.5/5	
Material	Copper-Be	Length (Tolerance+20 0%)	5mm
Diameter (Tolerance±5%)	φ0.5mm	Volume fill rate (Tolerance±2%)	28%



SUNKYE

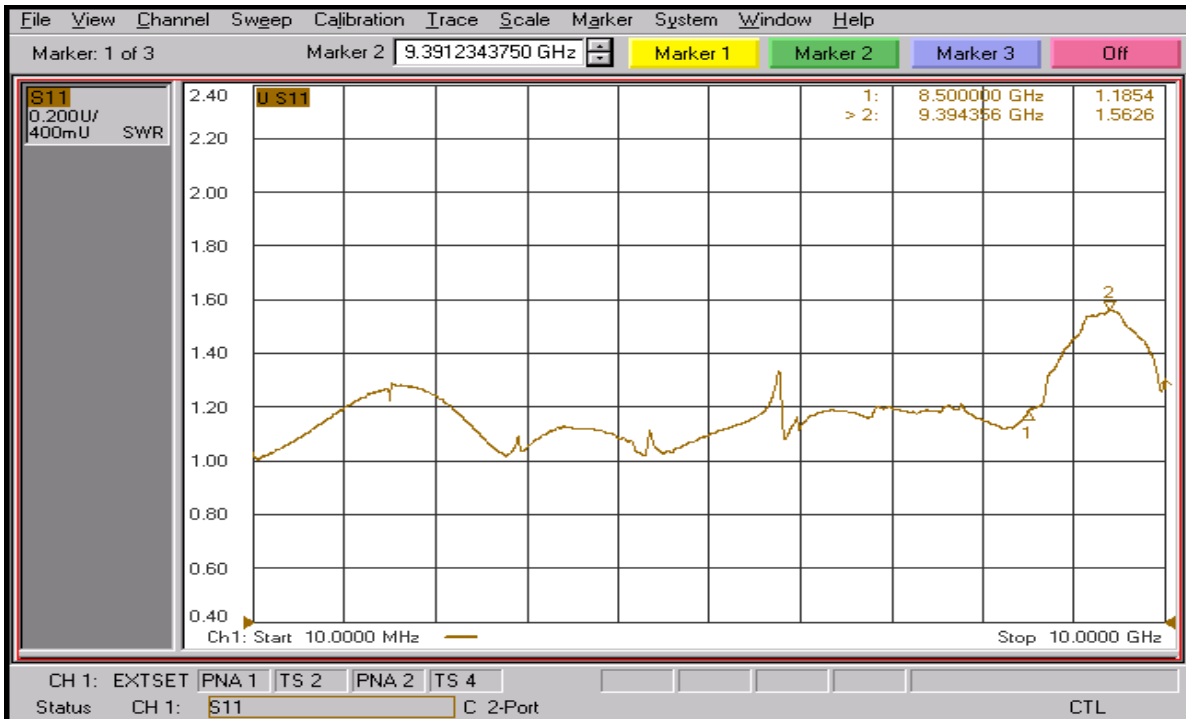
www.sunkye.com

Super Pin Connectors

Testing datasheet

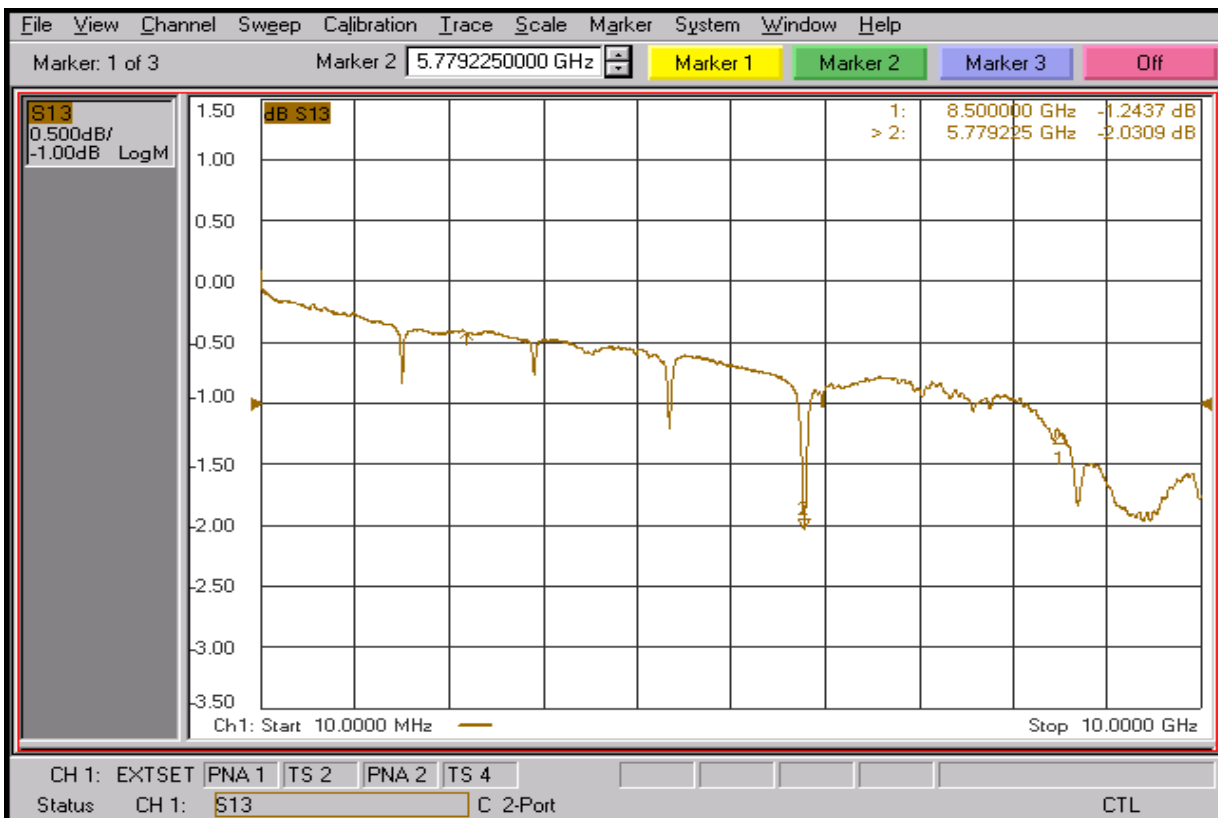
Item	Technical analysis indicators	Result
1	Current Capability(max)	5A
2	Operating temperature range	-60°C~+150°C
3	Mating Cycles	1000 cycles
4	Mating Cycles (with Hardhats)	1000 cycles
5	Compliance	15% - 30% of length
6	Compression Force	0.46N (0.5mm compression)
7	VSWR	≤1.87@10GHz
8	Insertion Loss	≤-0.48dB@10GHz
9	Return Loss	≥10.39dB@10GHz
10	Resistance	<42.7mΩ
11	Thermal shock	-60°C~+150°C
12	Humidity	240h
13	Salt spray	48h
14	Vibration	150m/s ²
15	Shock	490m/s ²

VSWR of image





Insertion loss of image



Feature

High signal speed capability enabling frequencies greater than 20 GHz.

- Solderless, compression-style interconnect system.
- Applications include production Land Grid Array (LGA) integrated circuit sockets and parallel PCB to PCB interconnections.
- Provides solutions to many of the problems associated with through hole and surface mount soldered technology.
- Enables upgrade and system maintenance strategies.
- Available in custom I/O configurations and I/O counts from 1 to over 7,000.
- Contact centerline spacing of 1mm or greater.
- Excellent reliability in commercial, military, and aerospace applications.
- Application can result in lower installed and system maintenance costs.



Materials

- Contact Material: Molybdenum
- CIN::APSE Contact Plating: Gold
- Plunger Material: Copper alloy
- Plunger Plating: Gold
- Insulator Material: Liquid crystal polymer
- Packaging Tray Material: Anti-static ABS

Mechanical

- Contact-Only Configuration with 0.020" (0.5 mm) diameter
- Durability: 25,000 Z-axis actuations (CIN::APSE contact only)
- Shock: 100 Gs; 6 milliseconds; no discontinuity greater than 2 nanoseconds
- Vibration: 20 Gs; 10-2,000 Hz; no discontinuity greater than 2 nanoseconds

Electrical

- Contact-Only Configuration with 0.020" (0.5 mm) Diameter
- DC Resistance: Less than 15mOhm
- Inductance: Less than 0.5 nH
- Current-Carrying Capability: 3 – 6 Amps
- Insulation Resistance: > 1000 MOhm @ 500 VDC
- Dielectric Withstanding Voltage: 500 VDC at sea level

Environmental

- Contact-Only Configuration with 0.020" (0.5 mm) Diameter
- Temperature Life Testing: 1000 Hours @ 200°C; 5000 Hours @ 170°C
- Thermal Shock: 100 Cycles @ -55°C to +85°C; 2,000 cycles @ -20°C to +110°C
- Humidity: 5,000 Hours @ 30°C to 80°C @ 85% RH
- Salt Spray: 96 Hours
- Low Temperature: Operates in liquid nitrogen (-200°C)
- Bellcore TR-NWT-001217: Passed with plungers