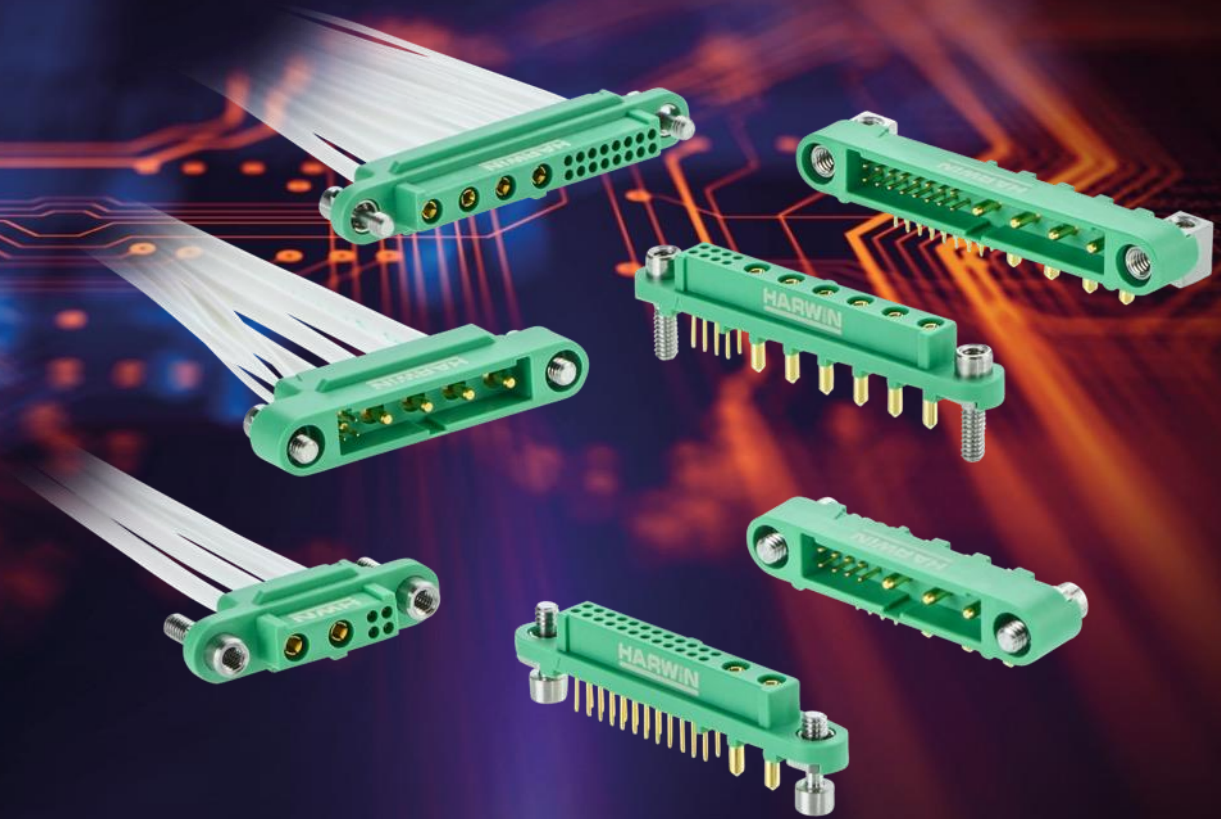


HARWIN

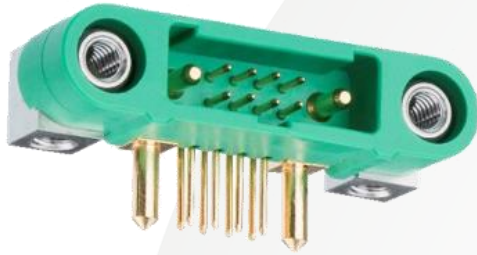


Gecko-MT





WHAT IS GECKO-MT?



The **SMALLEST, LIGHTEST, MIXED-LAYOUT** Connector

Gecko-MT is an evolution of the Gecko-SL product. The Screw-Lok connector system (with robust stainless steel screw-loks for simpler access, stronger fixings, and panel mount options) has been enhanced with additional power contacts, rated at 10A. Two configuration styles are available (check the website for the latest contact count options):

- Symmetrical (power on each end, signal in the middle)
- Non-Symmetrical (power on the first end, signal on the second end)

THE HEART OF THE CONNECTOR

- 26 AWG & 28-32 AWG – Signal
- 18 AWG – Power



PATENTED **4 FINGER** CONTACT

The patented single piece 4-fingered Beryllium Copper female contact gives high electrical performance and sustained mechanical durability. The crimp barrel meets IPC-A-620 specifications. It tolerates extremes of temperature, and withstands high vibration and shock. These contacts are precision-turned on state-of-the-art equipment at the UK headquarters, and plated with a gold finish to resist multiple insertions.



WHAT IS SWAP-C?

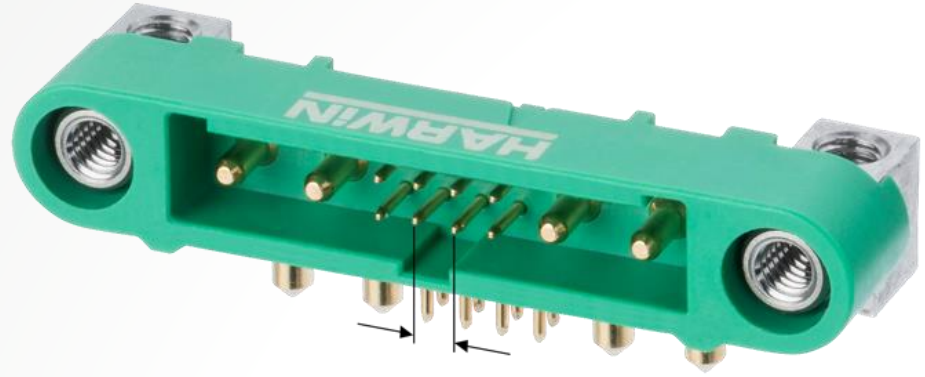
SIZE, WEIGHT and POWER and COST

Gecko-MT is designed to help address the market trend to improving SWaP-C – increase miniaturization, decrease weight, add or improve power options, and either lower cost or get the best possible value for cost.

These factors are big drivers in every industry using electronics – but are most prevalent in avionics and space, defense and motorsport industries. Addressing these factors on every component frees up additional size/weight/funds for additional or improved functions.



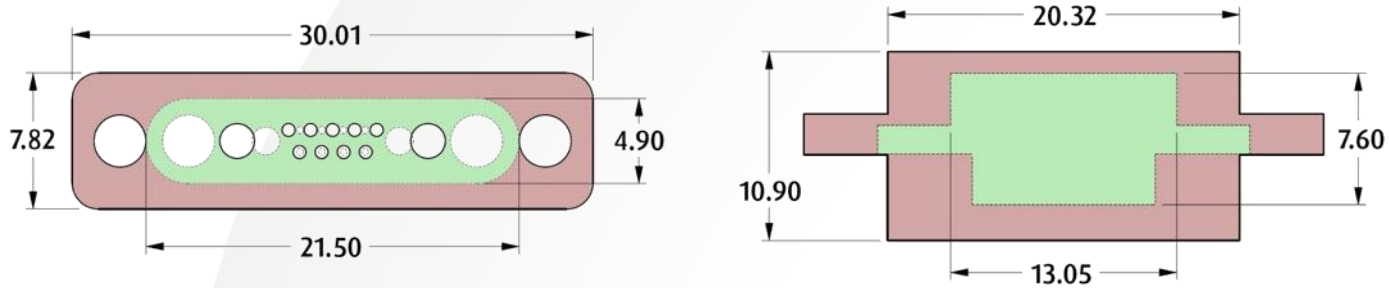
SIZE – PIN SPACING



**1.25mm
PITCH PIN
SPACING**

The 1.25mm pitch metric pin spacing from the rest of the Gecko range is utilized on the Gecko-MT range for the signal contacts. The pin spacing is 1.25mm pin both rows and columns, and is also the same on the PCB Throughboard tails.

SIZE SAVINGS OVER OTHER PRODUCTS



Green - Gecko-MT | Red - Combi Micro-D

Gecko-MT provides major space savings over [the next main comparable product, Micro-D](#) with power combinations. The decreased size (demonstrated here with female cable connectors) is applicable across the connector range. The reduced PCB footprint and cable connector volume means this product can be considered in circumstances where Combi Micro-D wouldn't fit.



WEIGHT COMPARISON

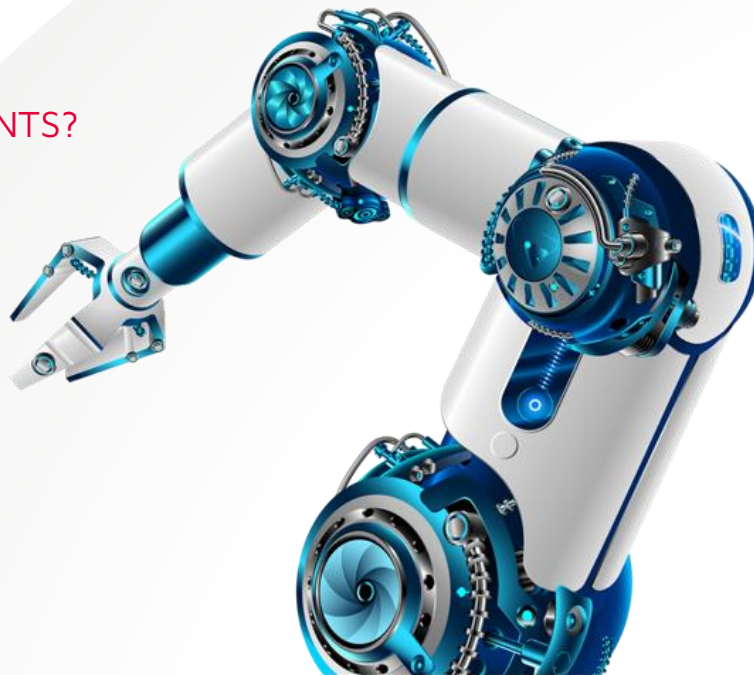


ONE GECKO-MT
2+8+2 **WEIGHS**
LESS THAN A
PLAYING CARD

With an all-plastic housing construction, Gecko-MT keeps the weight penalty down to a minimum. Compared to a standard size playing card at 1.8g, a female PCB connector in 2+8+2 configuration weighs in at just 1.53g.



WHAT ARE YOUR POWER REQUIREMENTS?



**10A / 2A PER
CONTACT**

At 2.8A per signal contact individually, 2A simultaneously, and 10A for the power contacts, Gecko-MT is comparable to other combination connectors in the micro-miniature range.

Combining power and signal into one connector delivers power to mechanical movement components and powered PCBs, as well as maintaining the signal current along parallel paths, making circuits and cabling simpler and easier to track.

COST COMPARISON



The cost of products is easily compared to the cost of weight. For each kilogram taken into space, a CubeSat manufacturer may be charged 50,000 euros. A single bottle of water can cost from \$9,000 to \$43,000 to get to the International Space Station. Costs will be less on a UAV, but there is still an associated cost in fuel requirement to get the weight to leave the ground.

Less weight, less fuel, less cost.



ELECTRICAL SPECIFICATIONS

Current Rating	10A Power 2A Signal
Contact Resistance	20mΩ
Insulation Resistance	1,000MΩ



10A / 2A PER CONTACT

10A power contacts provides additional flexibility to the board and cable layouts, and may even replace the requirement for a separate power connector. This gives significant savings for the SWaP-C equation.

SHOCK & VIBRATION RESISTANT

Vibration	20G No discontinuity greater than 1 μ s
Shock	100G for 6ms (Z axis) No discontinuity greater than 1 μ
Mating Cycles	1,000



**1000
MATING
CYCLES
DURABILITY**



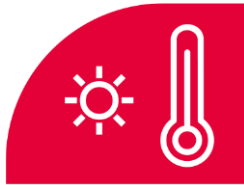
**SHOCK (100G)
& VIBRATION (20G)
PROOF**

Given the top end target applications for these connectors, vibration and shock levels are key to the performance of the Gecko-MT connector:

- Vibration at the take-off stage of a jet plane
- Rocket and payload / satellite launch shock and continued vibration until earth orbit
- Motorsport with high frequency bumps and vibration levels, potentially for multiple hours

WIDE OPERATING TEMPERATURE

Operating Temperature	-65°C to +150°C
Salt Spray	48 Hours
Humidity	65/150/56 days at 95% Relative Humidity



**FROM -65°C
OPERATING
TEMPERATURE**



**UP TO 150°C
OPERATING
TEMPERATURE**

Typical applications that would benefit from these levels of temperature include:

- Down-hole drilling (in the oil & gas industries) – these drills get very hot, and can be difficult to adequately cool
- Satellites – with repeated cycles of extreme darkness and unfiltered sunlight
- UAVs – flight operations at high-altitudes and associated low temperatures

LOW OUTGASSING

NASA Accepted Levels	Gecko Material Levels
1.0% or Less TML (Total Mass Lost)	0.68% TML
0.1% or Less CVCM (Collected Volatile Condensable Materials)	0.01% CVCM
1.0% or less of the original mass	0.26% WVR (Water Vapour Recovered)

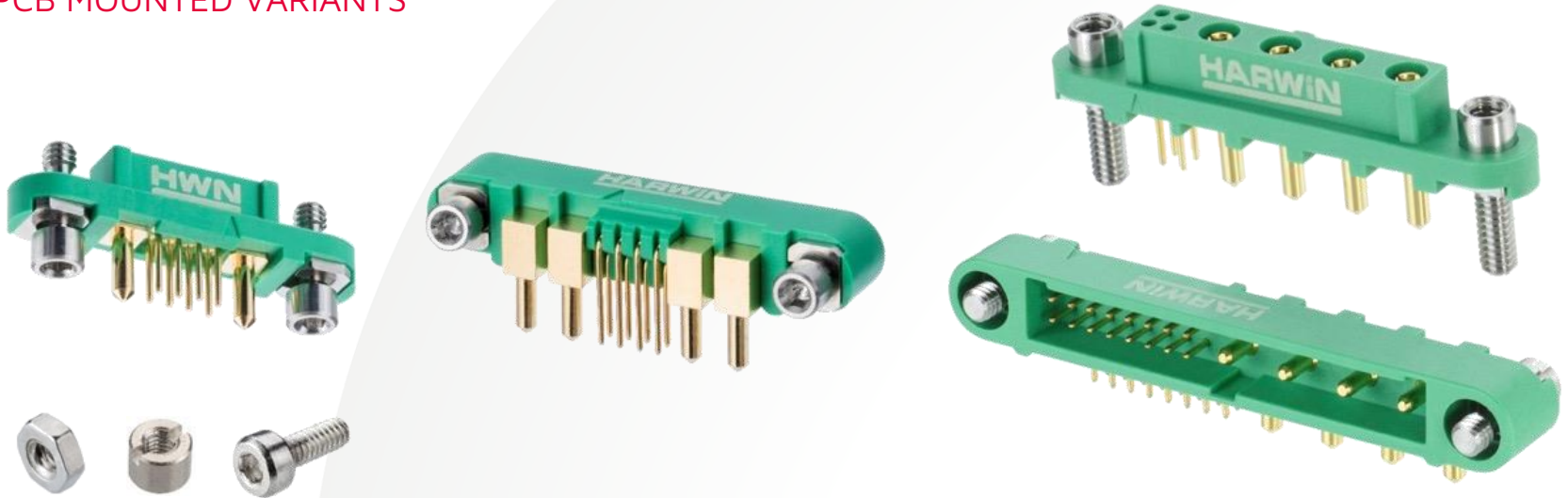


OUTGASSING WITHIN NASA AND ESA RECOMMENDATIONS

Outgassing (sometimes called offgassing) is the release of gas that was dissolved, trapped, frozen, or absorbed in material. Outgassing can include sublimation and evaporation (phase transitions of a substance into a gas), desorption, seepage from cracks or internal volumes, and gaseous products of slow chemical reactions. All can potentially introduce contaminants into a previously clean product.

The levels achieved by Gecko meet both NASA and ESA (European Space Agency) required specifications.

PCB MOUNTED VARIANTS



The [PCB versions of Gecko-MT](#) feature Female vertical connectors and Male horizontal connectors. The connectors are designed for Throughboard mounting, and there are variations for board-mount fixing in both genders.

Board-mount fixing nuts and bolts are available to purchase separately:

- Slotted Nut: [G125-4510000B](#)
- Hexagonal Nut: [G125-4500000B](#)
- Hexagonal Bolt: [G125-4520000B](#)

CABLE MOUNTED VARIANTS



READY TO GO CABLE ASSEMBLIES

The [cable versions of Gecko-MT](#) are also available in both genders, and feature rear backpotting cavities. Screw fixing options include standard gender and reverse fix, front and rear panel mounting. Tooling for in-house crimping is available with instruction sheets and a [video](#).

Pre-cabled contacts are also available from stock, and [full cable assembly options](#) are available from stock or made-to-order. Contact the Technical Team via our [Contact page](#) for further assistance.



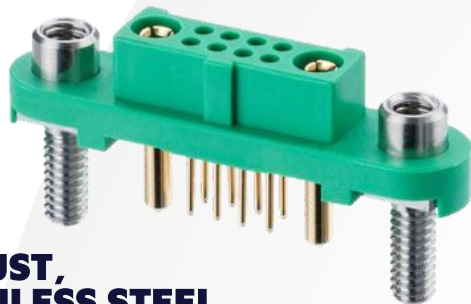
CABLE MOUNTED VARIANTS



METAL BACKSHELLS FOR SHIELDING

To complete the Gecko-MT range, the symmetrical connectors have been specifically designed to fit the existing 16-contact and 26-contact Gecko-SL metal backshells. This enables fully shielded cable assembly construction, with the addition of metal braiding secured around the backshells. Contact the Technical Team via our [Contact page](#) for made-to-order options.

SCREW-LOK FIXING HARDWARE



**ROBUST,
STAINLESS STEEL
SCREW-LOCKS**

The captive screws with hex socket heads prevent slipping during assembly. The design of these captive screws allows for 'Mate before Lock' – connectors can be fully mated before the screws need to be engaged. This provides for faster and easier assembly.

Reverse Fix options are available for all versions of board and cable connectors, providing board-to-cable combinations with a choice of either Male (standard gender) or Female (reverse fix) on the PCB.

OTHER PHYSICAL FEATURES

Signal position no. 1 identifier

Polarization features



Backpotting wall at rear

All the best features from the Gecko-SL series are retained on the Gecko-MT:

- Backpotting walls to contain added epoxy resin, for additional strain relief
- Position number 1 identifier on the signal pins (see the [Component Specification](#) for full pin numbering)
- 3 polarization features to assist easy mating without the possibility of error

RELATED PRODUCTS & SERVICES

- Dummy signal contacts
- Crimp and insertion tooling
- Cable assembly facility



A full complement of tooling and associated instruction sheets are available for the Gecko-MT range. Or Harwin can carry the strain, and supply a complete cable assembly service to your requirements.

MARKETS



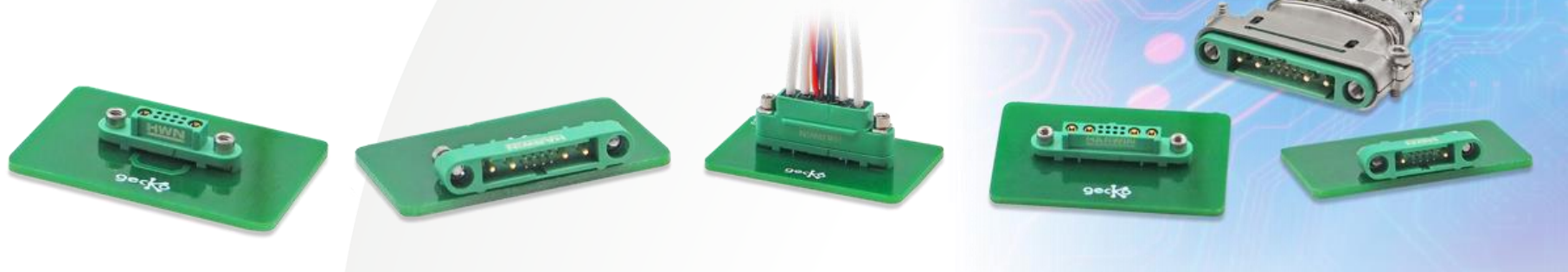
Many markets have a requirement for rugged, high-reliability connectors, with the additional requirements for miniature size, minimal weight restrictions and added power options. Gecko-MT delivers in these industries:

- UAVs
- Autosport
- CubeSats
- Avionics
- Oil & Gas



GECKO-MT: CONNECT WITH CONFIDENCE

The **SMALLEST, LIGHTEST, MIXED-LAYOUT** Connector



Tested to extreme G-force and temperature, Engineers will find it ideal for applications that **must not fail**.

Learn more about our other ranges



HIGH RELIABILITY
WITH SUPREME
PERFORMANCE



INNOVATIVE
DESIGNS FOR
EASY ASSEMBLY



DEPENDABLE
CONNECTIVITY
ACROSS THE BOARD

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Contact Us

Europe, Middle East & Africa

T: +44 (0)23 9231 4545

E: technical@harwin.com

Americas

T: +1 603 893 5376

E: technical-us@harwin.com

Asia Pacific

T: +65 6 779 4909

E: technical-asia@harwin.com

WWW.HARWIN.COM