

GROUNDING CONTACTS

For stable grounding contact between PC boards and PC board and chassis

Compact / Space saving / Large height type / Centered pick up

Sidecontact



ON-BOARD CONTACT



COIL ON-BOARD CONTACT



SIDE CONTACT



SIDE CONTACT

GROUNDING COMPONENTS

For low impedance grounding contact and screw securing areas

Plates



ON-BOARD PLATE

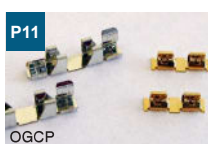
Lug terminals



ON-BOARD LUG TERMINAL

GROUNDING CLIPS

For shielding can fixing and EMC grounding



ON-BOARD CLIP



ON-BOARD SHIELD GUIDE



ON-BOARD CONTACT

GROUNDING CLAMPS

For cable fixing on PC board



ON-BOARD CLAMP



Grounding components, with support for automated mounting on PC board.

Feature

- Space saving and FG reinforcement at design stage of PC board.
- Supplied with embossed tape for automated mounting by chip mounter.
- Suitable management for emission and ESD immunity.

ON-BOARD CONTACT



Upper faces of mounted make contact with chassis, PC board and component, etc.

COIL ON-BOARD CONTACT

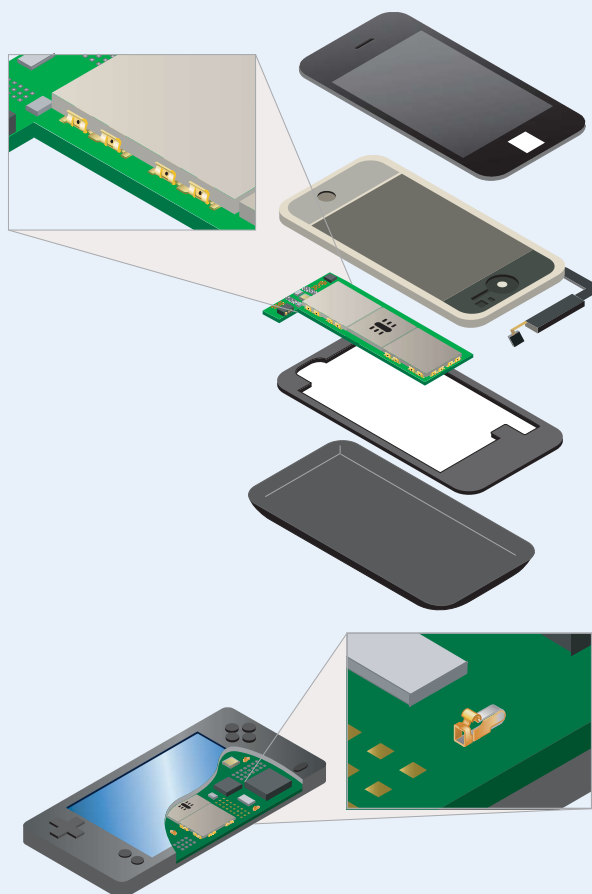


Durable components for grounding against vibrations and repeated compressions.

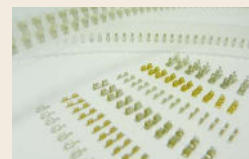
SIDE CONTACT



Side face of mounted parts makes contact with chassis, PC board and metal frame, etc.



ON-BOARD CLIP



Clip mechanism enables stable fixing and grounding for shielding can.

ON-BOARD SHIELDING GUIDE



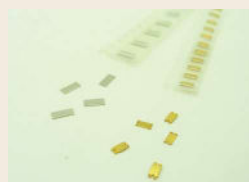
Displacement prevention mechanism improves shielding can grounding.

ON-BOARD CLAMP



Space-saving cable wiring on PC boards.

ON-BOARD PLATE



Reinforcement at contact points provided for reliable grounding.

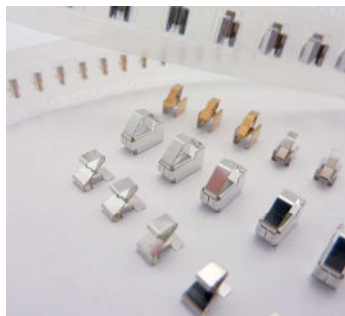
ON-BOARD LUG TERMINAL



Improved grounding reliability at screw area.

●Notes for On-Board series

Please contact our sales department for mounting specifications such as recommended pad dimensions, etc.
 Trial mounting using our products is required prior to purchase. Please check the notes indicated on the back cover.
 Galvanic corrosion may occur by contact with other metals.
 With regard to sales lot and delivery lead time, please contact our sales department.



Super-compact grounding components with wide variations

Feature

- Space saving, FG facilitated even where screws are precluded.
- Automated mounting on PC board is applicable.
- Box structure is introduced for distortion, deformation and damage prevention.(excluding some part numbers)

Material

- As described below

■ Compact type



Down-sized compact type for narrow space configurations.

■ Space saving type



For space saving at pad area on PC board

■ Large height type



For large clearances

■ Centered vacuum pick-up type

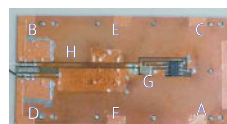


Vacuum pick-up point is placed at center

■ Suppression of radiated emission by multi point grounding

<Experimental contents>

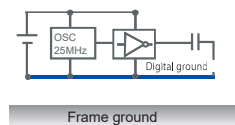
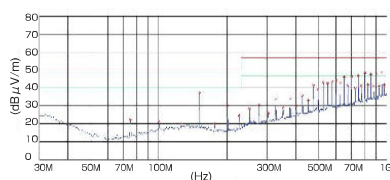
- Exp 1: PC board + Metal plate (without grounding)
- Exp 2: PC board + Metal plate (4 points: A, B, C, D)
- Exp 3: PC board + Metal plate (8 points: A, B, C, D, E, F, G, H)



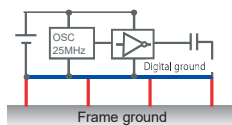
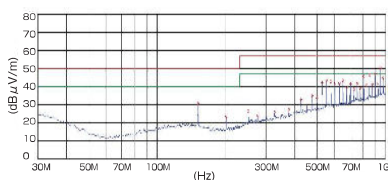
GND point on test PC board



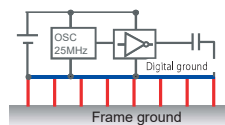
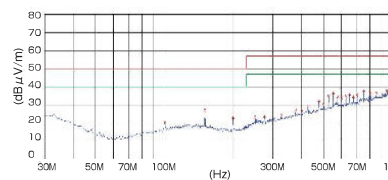
1) Without FG connection



2) 4 points grounding

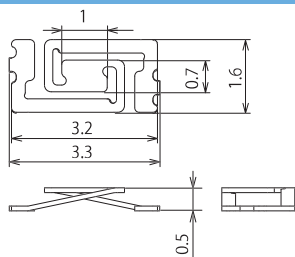


3) 8 points grounding



Multi point grounding enables large suppression effectiveness.

OG-321605G

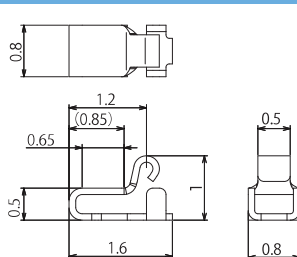


Material :Phosphor bronze for spring(t =0.1mm)

Surface treatment: Au plating (Ni undercoat)

Recommended height :0.35mm or less

OG-160810S

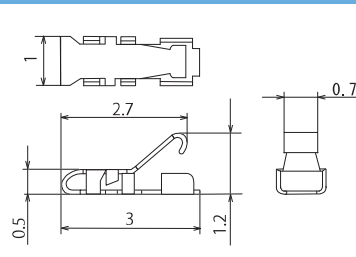


Material :Beryllium copper

Surface treatment : Partial Au plating

Recommended height :0.7~0.9mm

OG-301012



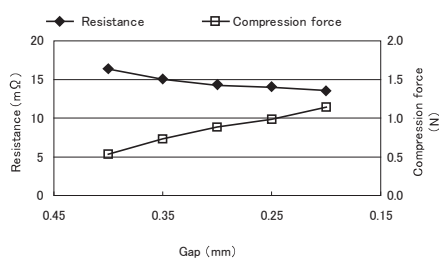
Material :Phosphor bronze for spring(t=0.08mm)

Surface treatment : Partial Au plating

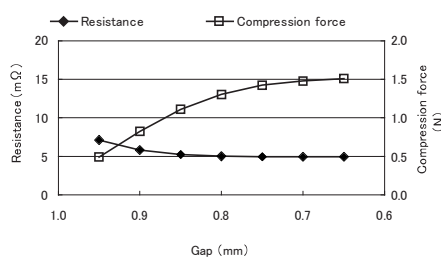
Recommended height :0.6~1.1mm

Compression force vs Electric resistance

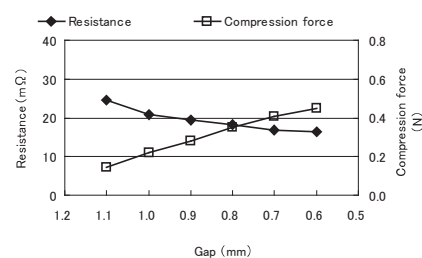
OG-321605G



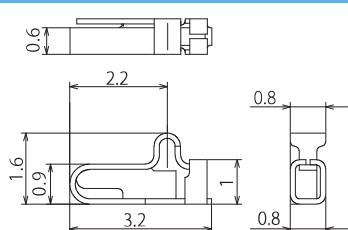
OG-160810S



OG-301012



OG-320816



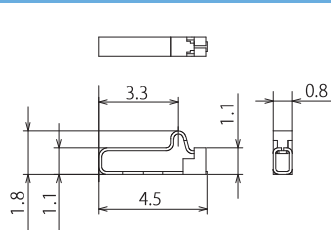
Material :Phosphor bronze for spring(t=0.12mm)

Surface treatment :Partial Au plating

Recommended height :1.1~1.4mm

Unit:mm

OG-450818

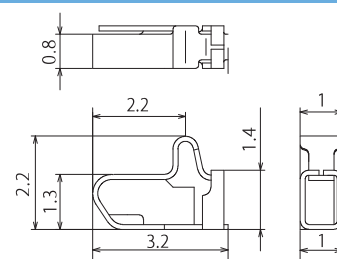


Material :Beryllium copper(t=0.12mm)

Surface treatment : Partial Au plating

Recommended height :1.2~1.6mm

OG-321022



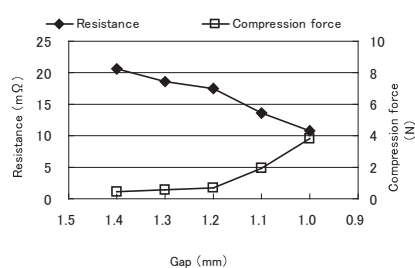
Material :Phosphor bronze for spring(t=0.12mm)

Surface treatment :PartialAu plating

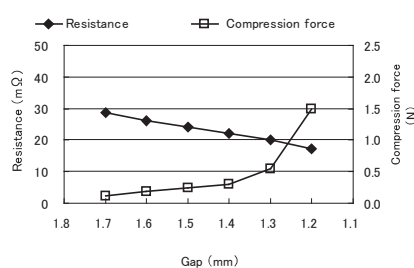
Recommended height :1.5~2mm

Compression force vs Electric resistance

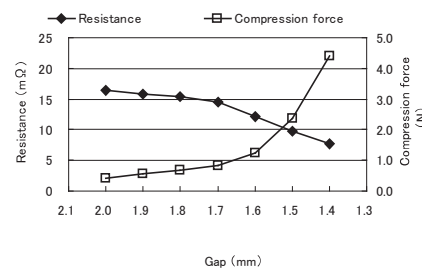
OG-320816



OG-450818



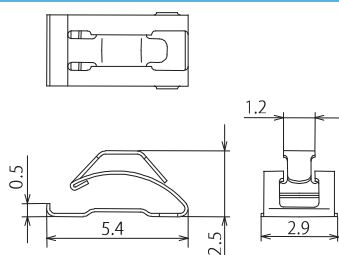
OG-321022



※Please confirm "Notes for Onboard series" on page 2 prior to purchase.

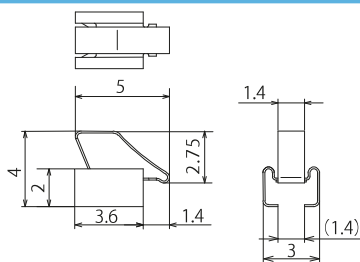
※The values are measured data for reference, not guaranteed.

OG-542925



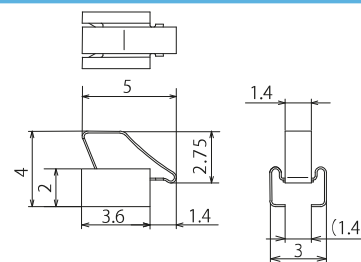
Material : Phosphor bronze for spring (t=0.12mm)
 Surface treatment : Partial Au plating
 Recommended height : 1.5~2.3mm

OG-363040



Material : Beryllium copper (t=0.1mm)
 Surface treatment : Sn reflow plating (Ni plated contacts)
 Recommended height : 2.2~3.4mm

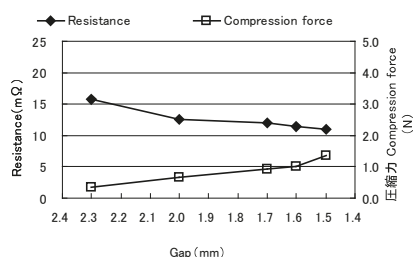
OG-363040G



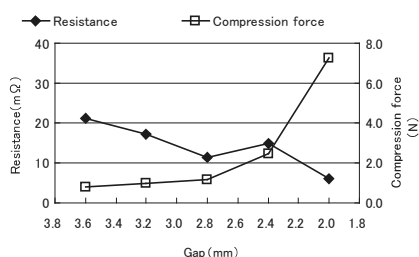
Material : Beryllium copper (t=0.1mm)
 Surface treatment : Partial Au plating
 Recommended height : 2.2~3.4mm

Compression force vs Electric resistance

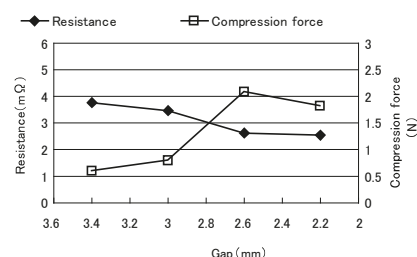
OG-542925



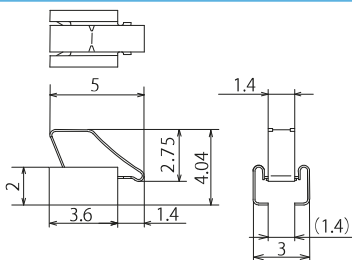
OG-363040



OG-363040G

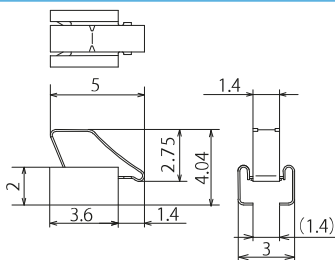


OG-363040HD



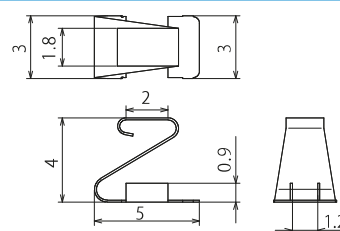
Material : Beryllium copper (t=0.1mm)
 Surface treatment : Sn reflow plating (Ni plated contacts)
 Recommended height : 2.2~3.4mm

OG-363040HDR



Material : Phosphor bronze for spring (t=0.1mm)
 Surface treatment : Sn reflow plating
 Recommended height : 2.2~3.4mm

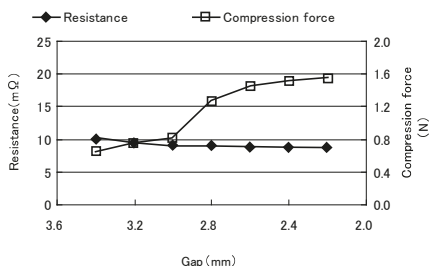
OG-503040



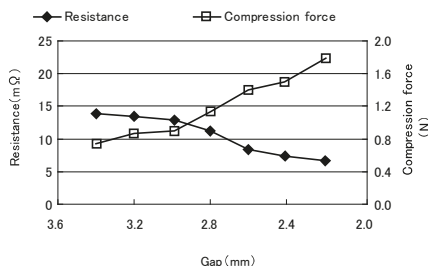
Material : Beryllium copper (t=0.1mm)
 Surface treatment : Sn plating
 Recommended height : 2.2~3.6mm

Compression force vs Electric resistance

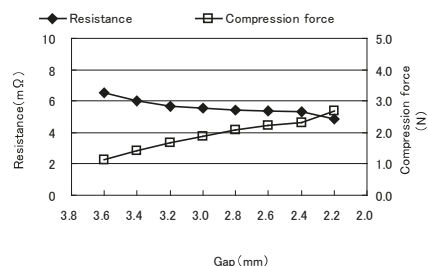
OG-363040HD



OG-363040HDR



OG-503040



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 ※The values are measured data for reference, not guaranteed.

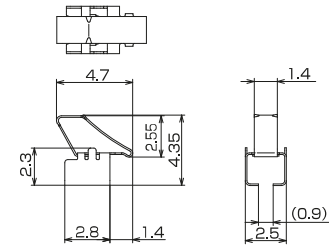
Contacts

Grounding components

Clips

Clamps

OG-282543HDR

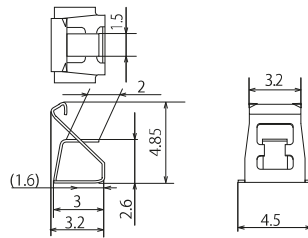


Material :Phosphor bronze for spring(t =0.1mm)

Surface treatment : Sn reflow plating

Recommended height :2.5~3.9mm

OG-453048

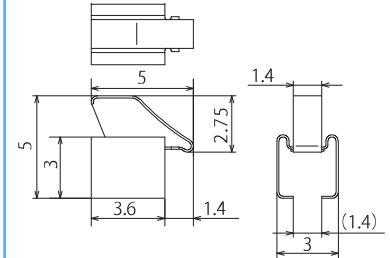


Material :Phosphor bronze for spring(t=0.1mm)

Surface treatment :Sn reflow plating

Recommended height :2.7~4.4mm

OG-363050



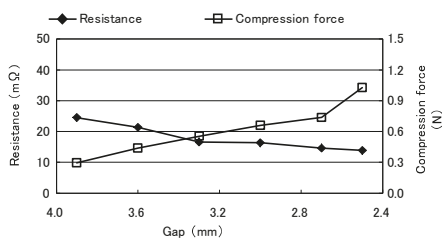
Material :Beryllium copper(t=0.1mm)

Surface treatment :Sn reflow plating(Ni plated contacts)

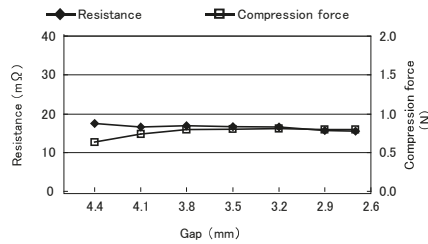
Recommended height :3.2~4.4mm

Compression force vs Electric resistance

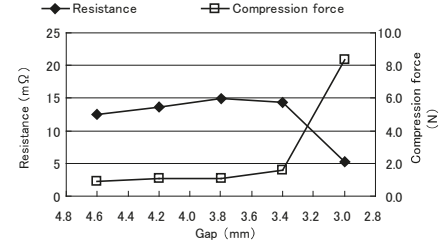
OG-282543HDR



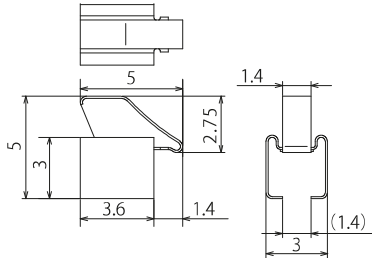
OG-453048



OG-363050



OG-363050G

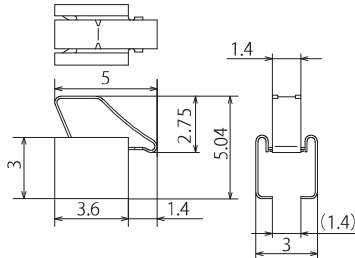


Material :Beryllium copper(t=0.1mm)

Surface treatment :Partial Au plating

Recommended height :3.2~4.4mm

OG-363050HD

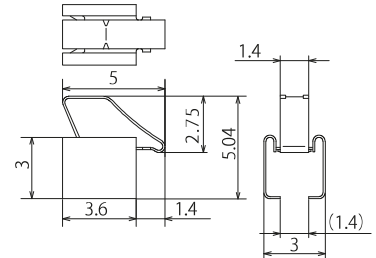


Material :Beryllium copper(t=0.1mm)

Surface treatment :Sn reflow plating(Ni plated contacts)

Recommended height :3.2~4.4mm

OG-363050HDR



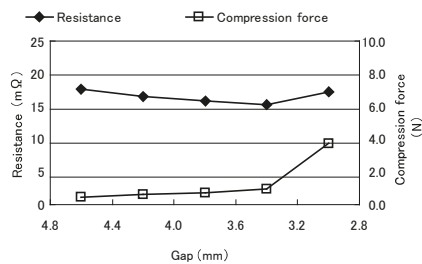
Material :Phosphor bronze for spring(t=0.1mm)

Surface treatment :Sn reflow plating

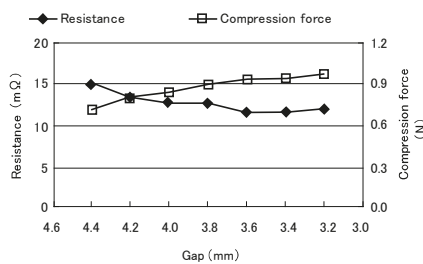
Recommended height :3.2~4.4mm

Compression force vs Electric resistance

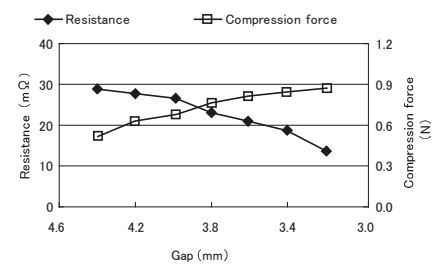
OG-363050G



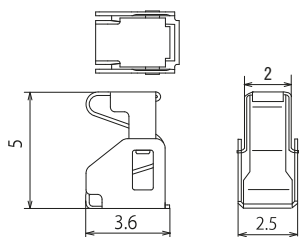
OG-363050HD



OG-363050HDR



OG-362550

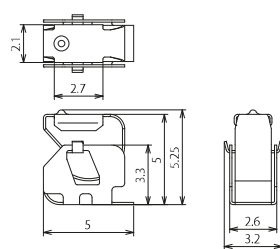


Material : Phosphor bronze for spring (t=0.15mm)

Surface treatment : Sn reflow plating

Recommended height : 3.6~4.5mm

OG-503253-A

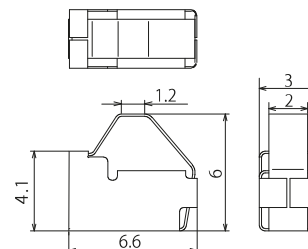


Material : Beryllium copper (t0.12mm)

Surface treatment : Sn reflow plating

Recommended height : 3.5~4.5mm

OG-603060



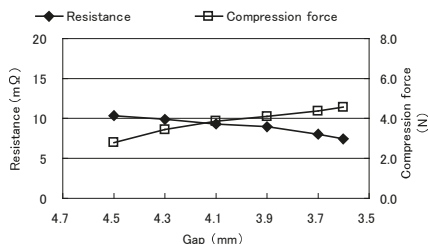
Material : Phosphor bronze for spring (t=0.12mm)

Surface treatment : Sn reflow plating

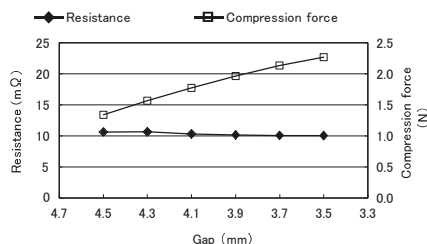
Recommended height : 4.2~5.5mm

Compression force vs Electric resistance

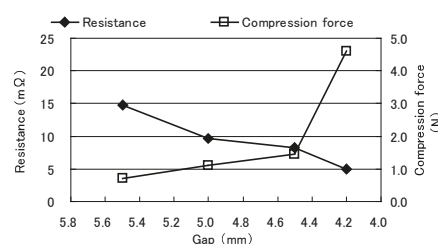
OG-362550



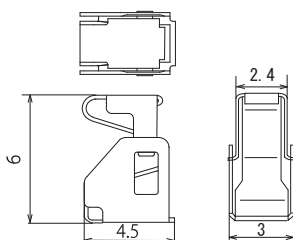
OG-503253-A



OG-603060



OG-453060

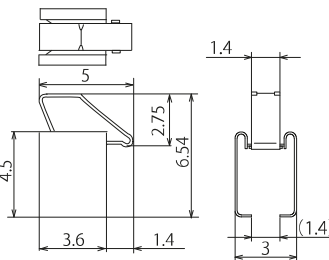


Material : Phosphor bronze for spring (t=0.2mm)

Surface treatment : Sn reflow plating

Recommended height : 4.2~5.5mm

OG-363065HD

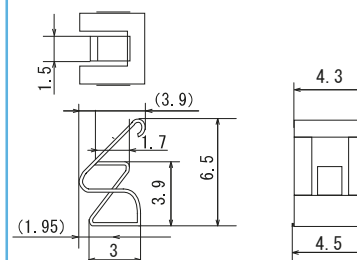


Material : Beryllium copper (t=0.1mm)

Surface treatment : Sn reflow plating (Ni plated contacts)

Recommended height : 4.7~5.9mm

OG-453065



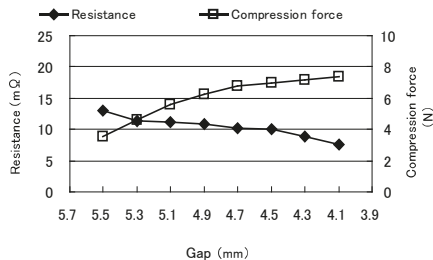
Material : Phosphor bronze for spring (t=0.15mm)

Surface treatment : Sn reflow plating.

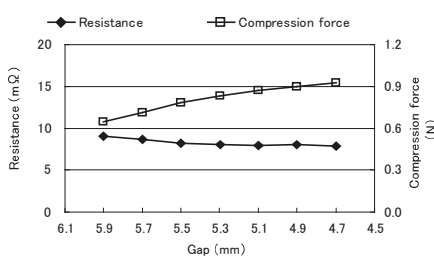
Recommended height : 4.2~6.0mm

Compression force vs Electric resistance

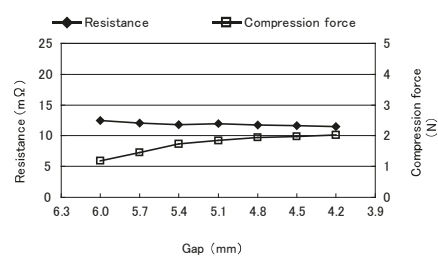
OG-453060



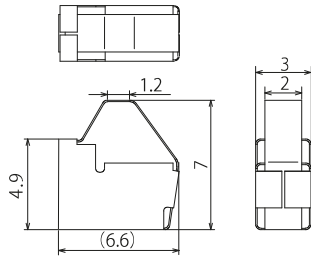
OG-363065HD



OG-453065



OG-603070

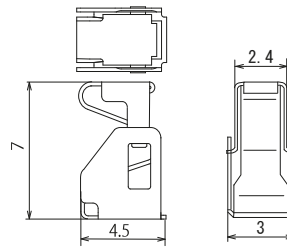


Material :Phosphor bronze for spring(t=0.08mm)

Surface treatment :Sn reflow plating

Recommended height :5~6.5mm

OG-453070

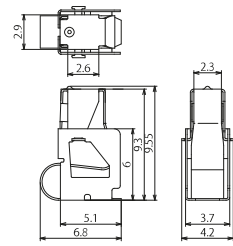


Material :Phosphor bronze for spring(t=0.2mm)

Surface treatment :Sn reflow plating

Recommended height :5.3~6.5mm

OG-684296

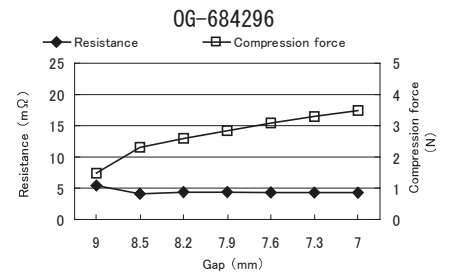
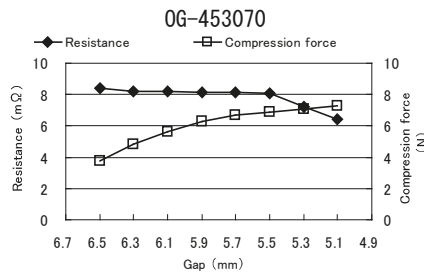
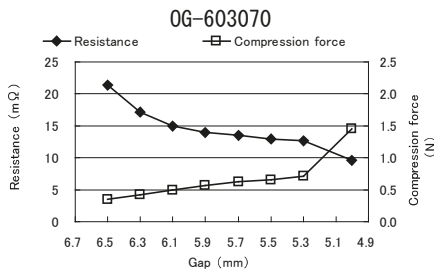


Material :Beryllium copper(t=0.15mm)

Surface treatment :Sn reflow plating

Recommended height :7.0~9.0mm

Compression force vs Electric resistance



SIDE CONTACT / OGSC



Automated mounting applicable component for grounding with side-contact on PC board.

Feature

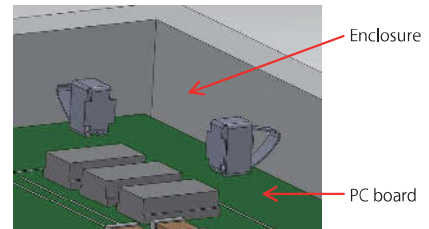
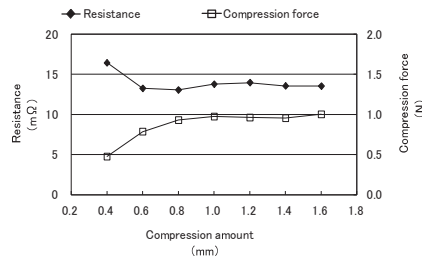
- Side-contact is applicable on PC board edge against chassis.
- Grounding contact is applicable between mother PC board and vertically placed daughter board.
- OGSC-402030:Down-sized compact design has been reduced by 80% of foot print area on PCB compared with existing part.
- OGSC-756030:Structure resists deformation even during lateral sliding.

Material

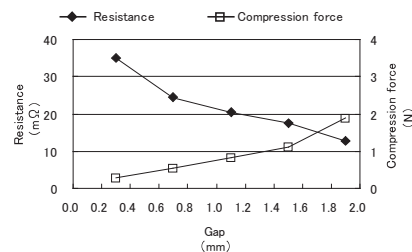
- Phosphor bronze for spring (Sn reflow plating)

Characteristics between Compression Force and Resistance

OGSC-402030



OGSC-756030



Unit:mm

※The values are measured data for reference, not guaranteed.



Side contact for perpendicular grounding

Feature

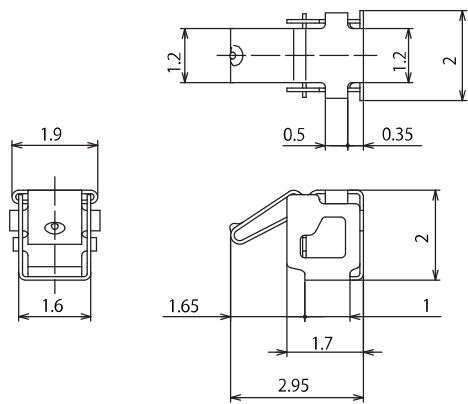
- Ideal for applications where standard grounding between parallel boards/ chassis is not possible .
- Due to low profile design (2mm), it's suitable for small electronic devices
- Operating temperature: -40~125°C

Material

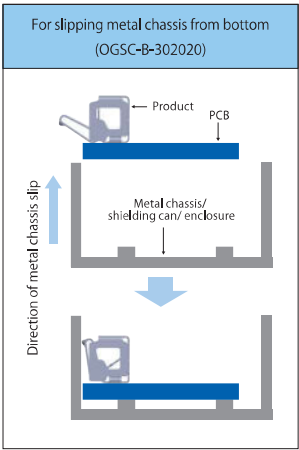
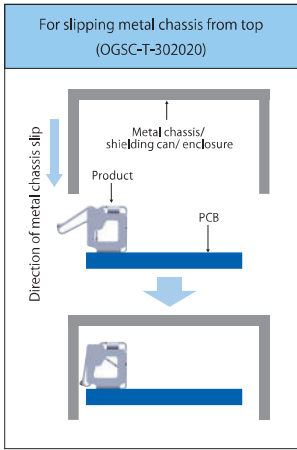
- Corson alloy (t0.08mm)

Specification

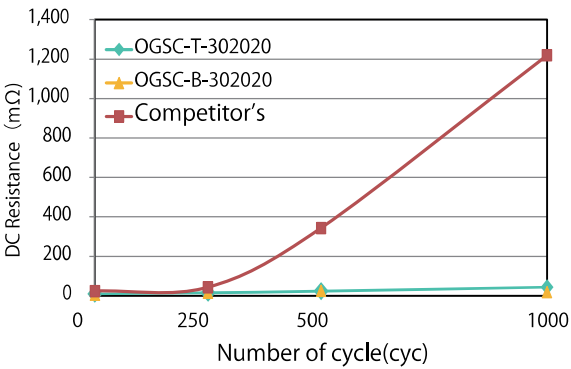
● Dimensions



| Item | OGSC-T-302020 | OGSC-B-302020 |
|---|---|---------------|
| Applications | Ground contact for SMD | |
| Material | Corson alloy(t0.08mm) | |
| Surface treatment | Sn reflow plating (Underlying Cu plating) | |
| Recommended operating temperature range(°C) | -40 ~ 125 | |
| Compression range(mm) | 0.3 ~ 1.0 | |
| Initial resistance (Ω) | ≤0.05 | |
| Initial compression force(N) | 0.2 ~ 3.1 | 0.4 ~ 3.0 |



Heat cycle test





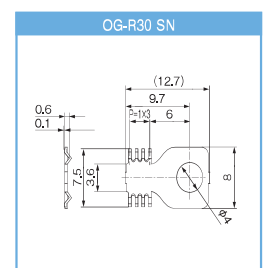
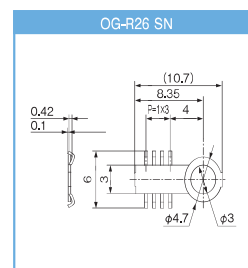
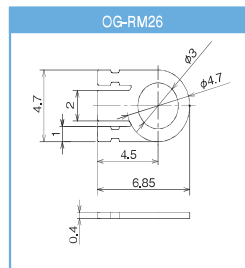
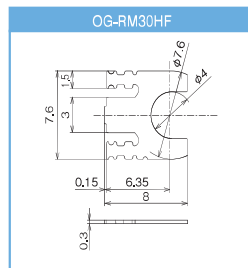
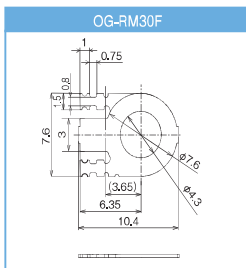
Secure contact of screwed area

Feature

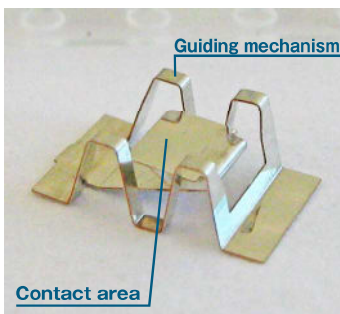
- FG reinforcement and reliable contact are achieved.
- Prevention of screw loosening caused by vibration.
- OG-RM is a space-saving fully-flat shape.
- OG-RM30HF provides even further space saving.

Material

- Tough pitch copper* (Sn plating)
- ※OG-RM26 is made of brass.



ON-BOARD SHIELD GUIDE / OG-865028



Displacement prevention mechanism improves grounding of shielding cans.

Feature

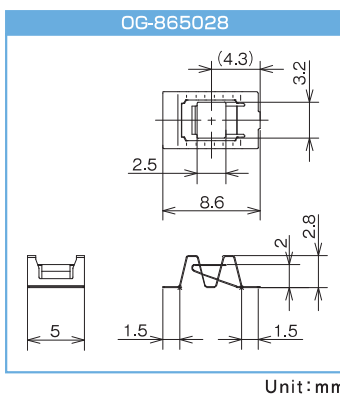
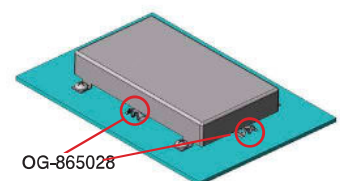
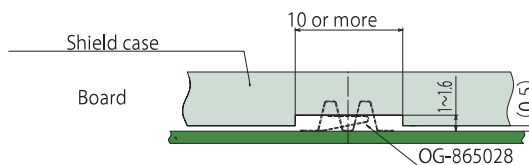
- Guiding mechanism makes easy installation for shielding cans.
- Applicable even at corners of shielding cans.
- Multi-point contact with the shielding can provides higher shielding effectiveness.

Material

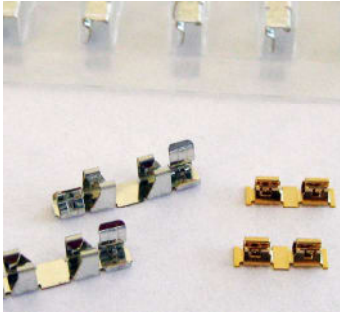
- Phosphor bronze for spring (Sn reflow plating)

Reference Installation Specifications

Applicable plate thickness : $t=1.9$ or less



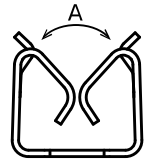
※The values are measured data for reference, not guaranteed.



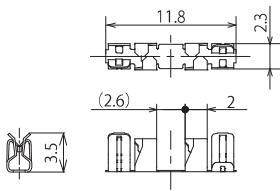
Automated mounting applicable fixture "On-Board Clip" for shielding can.

Feature

- Clip structure enables easy removal of shielding can.
- Multi-point GND is provided to shielding can. Improved shielding effect can be achieved.
- OGCP-502423: Wide opening (A) provides easy insertion of a shielding can.
- OGCP-1182435: Separate structure of clip and support portion resistant to side slide loading.
- OGCP-702020: Locking structure provides "click feel" on installation. It provides certainty and improved workability.

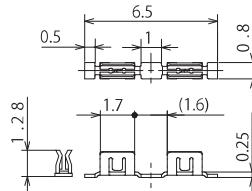


OGCP-1182435



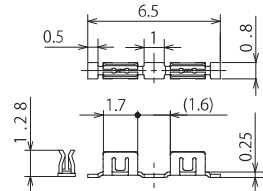
Material : Phosphor bronze for spring
Surface treatment : Sn reflow plating
Applicable thickness : $t=0.3\pm0.02$

OGCP-650813R



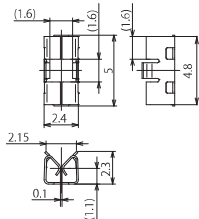
Material : Phosphor bronze for spring
Surface treatment : Sn reflow plating
Applicable thickness : $t=0.15\sim0.2$

OGCP-650813G



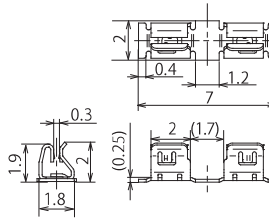
Material : Titanium Copper alloy
Surface treatment : Partial Au plating (Ni plated contacts)
Applicable thickness : $t=0.15\pm0.03$

OGCP-502423



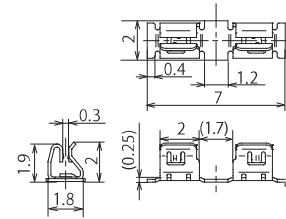
Material : Phosphor bronze for spring
Surface treatment : Sn reflow plating
Applicable thickness : $t=0.28\sim0.56$

OGCP-702020



Material : Phosphor bronze for spring
Surface treatment : Sn reflow plating
Applicable thickness : $t=0.3\pm0.02$

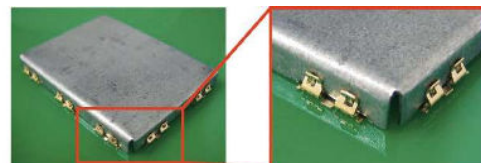
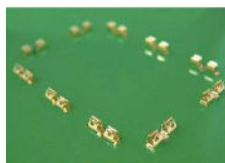
OGCP-702020G



Material : Phosphor bronze for spring
Surface treatment : Partial Au plating
Applicable thickness : $t=0.3\pm0.02$

Unit: mm

Installation example



※ Suffix "G" means Au plating. Please contact our sales representatives for details.

※ Shielding can fixing is not guaranteed if the clip only is used.
※ Verification of actual use conditions is required prior to use.
※ Please confirm "Notes for Onboards series" on page 2 prior to purchase.



Durable components for grounding against vibrations and repeated compressions

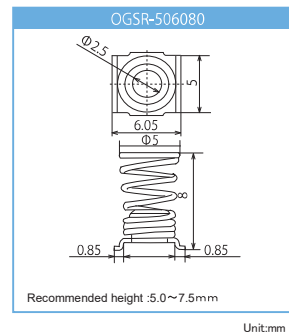
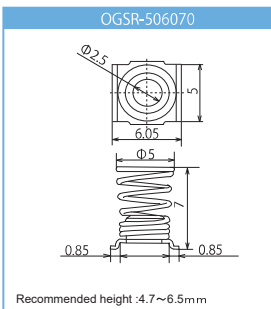
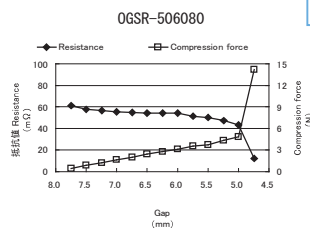
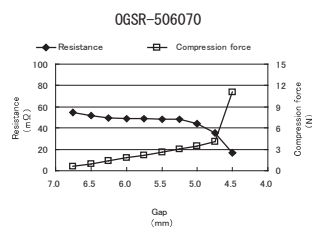
Feature

- Durable components for grounding against repeated compressions.
- Products with wide range of use.

Material

- Piano wire($\Phi 0.45$)(Au plating)
- Brass($t=0.3\text{mm}$)(Sn reflow plating)

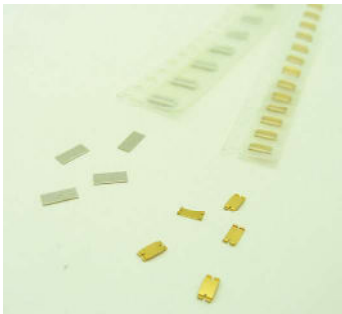
Characteristics between Compression Force and Resistance



Unit:mm

※Please confirm "Notes for Onboard series" on page 2 prior to purchase.

ON-BOARD PLATE / OGP-2520 , -3216, -4520



OGP configuration ensures reliable contact

Feature

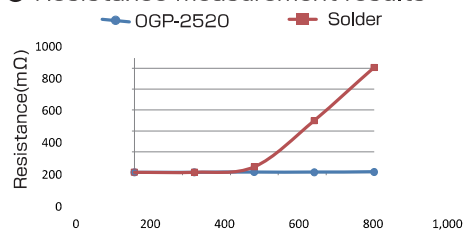
- OGP solves contact failure problems caused by solder flux.
- Better reliability compared with solder.
- Eliminates continuity failure caused by pattern scraping between a PCB and pogo pins and a PCB and a metal plate.
- OGP-2520 is 40 % or more downsized from OGP-4520. (Product size: 2.5 mm)
- Gold-plated OGP-3216 can be used as a partial.

Material

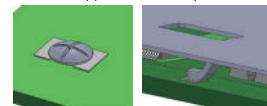
- Base material: Brass Surface treatment: Sn reflow plating※(First plating: Cu plating)
- ※Surface treatment for OGP-3216: Au/Ni plating on both sides.

Properties

● Resistance measurement results



Application examples



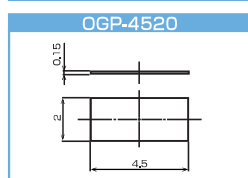
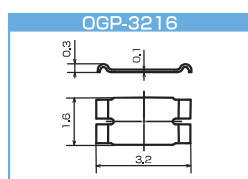
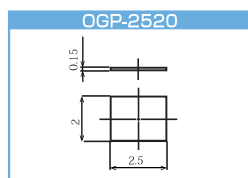
Screw loosening prevention and automated mounting

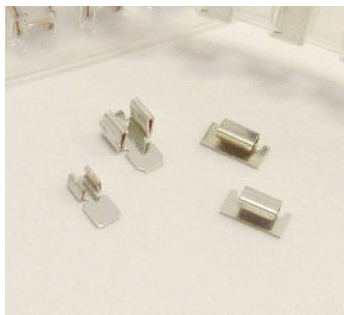


| | washers | OGPseries |
|-----------------|---------|-----------|
| Mounting method | Manual | Automated |

- Cost saving by automation!
- Parts are automatically counted by mounters.

Unit:mm





Compact cable clamp applicable to automated mounting on PC board.

Feature

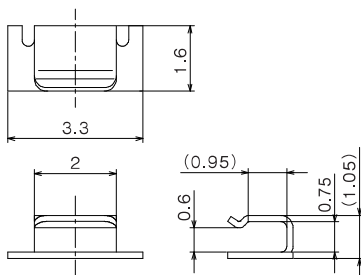
- Supporting wire harness on PC board.
- Side and top insertion types are available.
- Automated mounting and reflow soldering on PC board are applicable without boring.
- Wiring on PC board edges is available which brings space saving of equipment design.

Material

- Phosphor bronze for spring (Sn reflow plating)

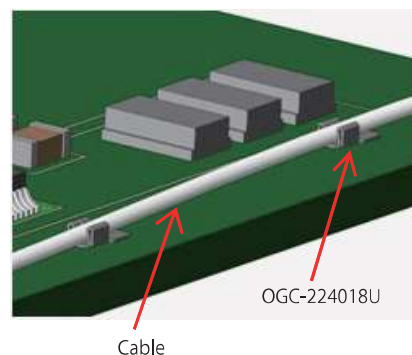
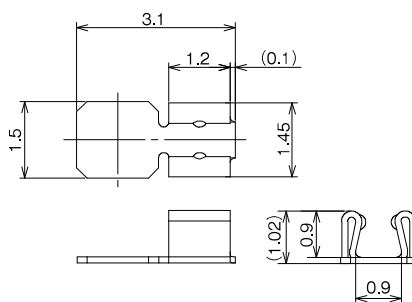
OGC-331610

Applicable harness diameter : $\phi 0.8$



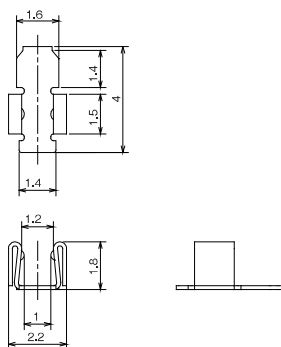
OGC-311510U

Applicable harness diameter : $\phi 0.8$



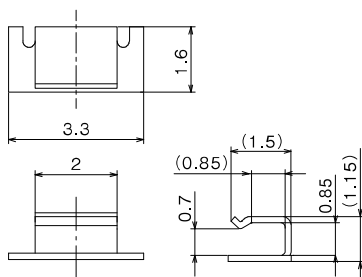
OGC-224018U

Applicable harness diameter : $\phi 1.3 \sim 1.4$



OGC-331612

Applicable harness diameter : $\phi 0.86$



Unit: mm

※Please confirm "Notes for Onboard series" on page 2 prior to purchase.



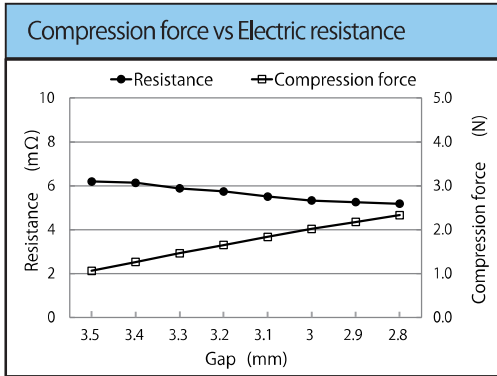
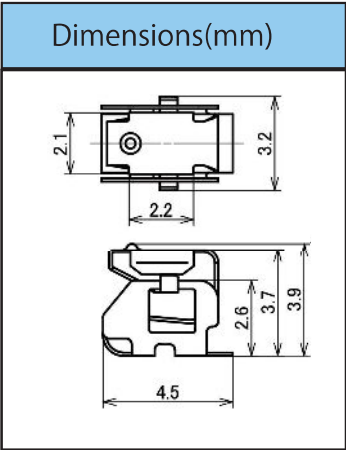
SMT grounding contact for engine compartment PCB

Feature

- Connecting a GND layer of PCB with multiple points on a chassis can be expected to suppress radiation noise.
- Connectors are prone to static electricity. When the OG is placed near a connector, it creates a ground connection with the chassis to release the static electricity.
- The spring structure has durability for 10 million vibrations, considering the deflection of PC boards caused by vibration.
- Sustained conduction is secured because of unique dimple design.
- Can be used under high temperature at 150℃

Material

- Basis material: Beryllium copper(t0.12mm)
- Surface treatment:Sn reflow plating (Underlying Cu plating)



Reference

■ Metal grouping (reference)

※Galvanic corrosion may occur by contact with other metals.

| anode | | | |
|---------------|----------------|-----------------|-----------------|
| Group I | Group II | Group III | Group IV |
| Mg | Al | Cd plating | Brass |
| Mg alloy | Al alloy | carbon steel | stainless steel |
| Al | Zn・Zn plating | Fe | Be-Cu |
| Al alloy | Cr plating | Ni-Cr plating | Cu, Cu alloy |
| Zn・Zn plating | Cd plating | Sn・Sn plating | Ni-Cu alloy |
| Cr plating | carbon steel | Sn・Pb solder | Monel |
| | Fe | Pb | Ag |
| | Ni, Ni plating | Brass | Graphite |
| | Sn, Sn plating | stainless steel | Rb |
| | Sn・Pb solder | Be-Cu | Ti |
| | | Cu, Cu alloy | Pt |
| | | Ni-Cu alloy | Au |
| cathode | | | |

Contacts

Grounding components

Clips

Clamps