# R255/3 Series Power Connectors

## Description:

Outline dimensions compliant with R255A（MIL-C-38999）Ⅲ series

- For power supply
- Current rating: 7.5A~225A
- Quick thread coupling with anti-loosening mechanism
- Type of termination at rear end is crimp
- Plug and receptacle loaded with pins or sockets

## Main technical characteristics

## Mechanical

—Shell: Aluminum alloy, stainless steel

—Plating: Y- olive green cadmium plating

H –electroless nickel plating

M - stainless steel passive

—Insulator: thermoplastic or thermo-set

—Grommet and seal: silicon rubber

—Contact: gold plating on copper alloy

—Endurance: 500 cycles

—Shock: 3ms half sinusoid

Peak value of acceleration: 300g

—Vibration:

Sinusoid: 41.7grms, 100~1000Hz,

power spectrum density $1g^2$/Hz

## Electrical

—Voltage rating, withstanding voltage and insulation resistance:

| Operation environment | Voltage rating (V) | Withstanding voltage (V) | Insulation resistance (MΩ) |
|---|---|---|---|
| Normal temperature | 500 | 1500 | ≥5000 |
| Heat and damp | 500 | 750 | ≥1000 |

—Electricity of shell:

Y class: 2.5 mΩ

H class: 1 mΩ

M class: 5 mΩ

—Shielding

—10GHz reach 65dB (Y)

—10GHz reach 50dB (Y)

—1GHz, reach 85dB (H and Y)

—Contact resistance and current rating:

| Contact size | Contact resistance (mΩ) | Rated current (A) |
|---|---|---|
| 20# | ≤8.5 | 7.5 |
| 16# | ≤4.5 | 13 |
| 12# | ≤2.2 | 23 |
| 10# | ≤1.2 | 33 |
| 8# | ≤0.7 | 46 |
| 6# | ≤0.5 | 60 |
| 4# | ≤0.35 | 80 |
| 0# | ≤0.17 | 150 |
| 2/0# | ≤0.124 | 185 |

## Environmental

—Operating temperature:

Y class: -65℃～175℃

H class: -65℃～200℃

—Sealing: Comply with the requirement of MIL-C-38999K low-pressure soakage

—Salt spray: According to method 1001 L1217

500 hours (Y class) 48

hours (H class) 1000

hours (M class)

—Damp heat: 10 cycles in 24 hours according to MIL-C-38999K

—Resistance to fluids: Fuels, coolant, solvent

**Ordering information**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Basic series** | **R255/** | **42** | **Y** | **J** | **04** | **P** | **N** | **-H** |
| **Shell type** | 42-square flange receptacle<br>46-jam nut receptacle<br>48-RFI shielding plug | | | | | | | |
| **Plating** | Y –olive green cadmium plating<br>H – electroless nickel plating<br>M—stainlesssteelpassive | | | | | | | |
| **Shell No.**<br>**Index No.** | A to J | 17<br>E | 19<br>F | 21<br>G | 23<br>H | 25<br>J | | |
| **Insert arrangement** | please see the insert arrangement figure | | | | | | | |
| **Contact type** | P-pin S-socket | | | | | | | |
| **Polarization** | N – normal<br>A, B, C, D, E – alternative | | | | | | | |
| **Solder contact identification (only for solder connectors)** | H-solder contact | | | | | | | |

Note: applicable back shells for this series are the same with"R255 Ⅲ"series.

**[Part number designation example**

**R255/42YG05PN-H**

R255 series square flange receptacles, with olive green cadmium plated shell, G size shell, 05# insert arrangement, pin contact, polarization N. Solder contacts are only applicable for solder connectors.

## Crimp contacts

| Contact size | Dia. mm | Contact crimp bucket | | Applicable wire | | | Crimping tensile strength | | Crimp contact resistance mΩ |
|---|---|---|---|---|---|---|---|---|---|
| | | Inner dia. mm | Section $mm^2$ | AWG | Section $mm^2$ | Section dia. | Initial value N | After thermal test N | |
| 20D# | φ0.76 | 0.85 | 0.57 | 28 | 0.0804 | 0.32 | 13 | 10 | 1.2 |
| | | | | 26 | 0.1281 | 0.404 | 22 | 18 | 1.1 |
| | | | | 24 | 0.2047 | 0.511 | 30 | 23 | 1.0 |
| | | | | 22 | 0.3247 | 0.643 | 49 | 33 | 0.8 |
| 20# | φ1.0 | 1.17 | 1.07 | 24 | 0.2047 | 0.511 | 30 | 23 | 1.0 |
| | | | | 22 | 0.3247 | 0.643 | 49 | 33 | 0.8 |
| | | | | 20 | 0.5189 | 0.813 | 74 | 62 | 0.7 |
| 16# | φ1.60 | 1.68 | 2.22 | 20 | 0.5189 | 0.813 | 74 | 62 | 0.7 |
| | | | | 18 | 0.8107 | 1.02 | 167 | 147 | 0.5 |
| | | | | 16 | 1.318 | 1.29 | 206 | 184 | 0.4 |
| 12# | φ2.4 | 2.49 | 4.87 | 14 | 2.075 | 1.63 | 314 | 271 | 0.3 |
| | | | | 12 | 3.332 | 2.05 | 471 | 413 | 0.2 |
| 10# | φ3.15 | 3.40 | 9.07 | 10 | 5.26 | 2.59 | 601 | 540 | 0.1 |
| 8# | φ3.6 | 4.55 | 16.25 | 8 | 8.37 | 3.26 | 881 | 801 | 0.05 |
| 6# | φ4.52 | 5.9 | 27.3 | 6 | 13.3 | 4.11 | 1330 | 1201 | 0.05 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4# | φ5.72 | 7.1 | 39.5 | 4 | 21.15 | 5.19 | 1780 | 1601 | 0.03 |
| 0# | φ9.07 | 11.48 | 103.4 | 0 | 53.49 | 8.25 | 3110 | 2802 | 0.02 |
| 2/0# | φ10.31 | 12.65 | 125.6 | 00 | 67.43 | 9.27 | 3340 | 3003 | 0.01 |

**Note:**

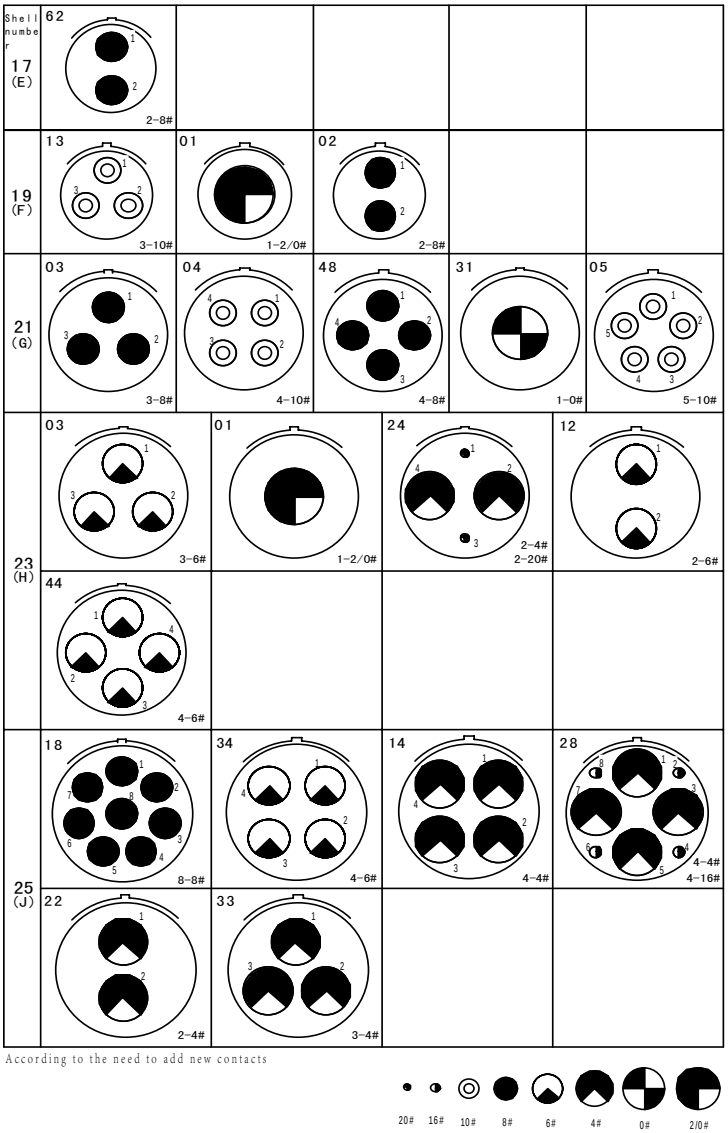
1) **Solder contacts are supplied separately. Mount contacts in the product after soldering is completed.**
2) **Applicable crimp tool for crimp contacts is YTQ-00 hand hydraulic crimp tool.**
3) **Metallic extractor is designed with the crimp product and needs to be ordered separately.**

| **Crimp contact size** | **10#** | **8#** | **6#** | **4#** | **0#** | **2/0#** |
|---|---|---|---|---|---|---|
| **Metallic extractor P/N** | **LA711-QX-10#** | **LA711-QX-8#** | **LA711-QX-6#** | **LA711-QX-4#** | **LA711-QX-0#** | **LA711-QX-2/0#** |

## Outline dimensions

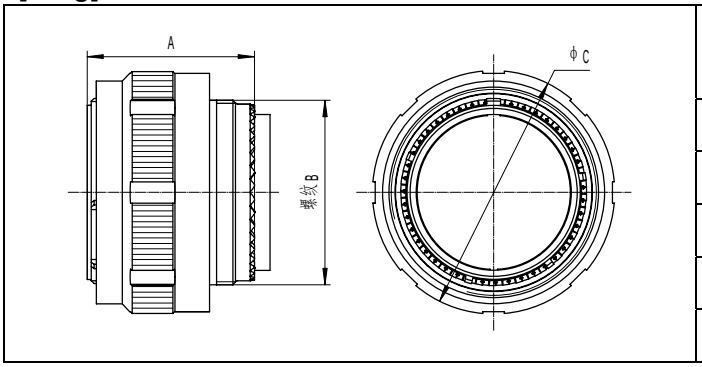
[Equal to LA711Ⅲ series]

Insert arrangement（mating view of insulator with pin）



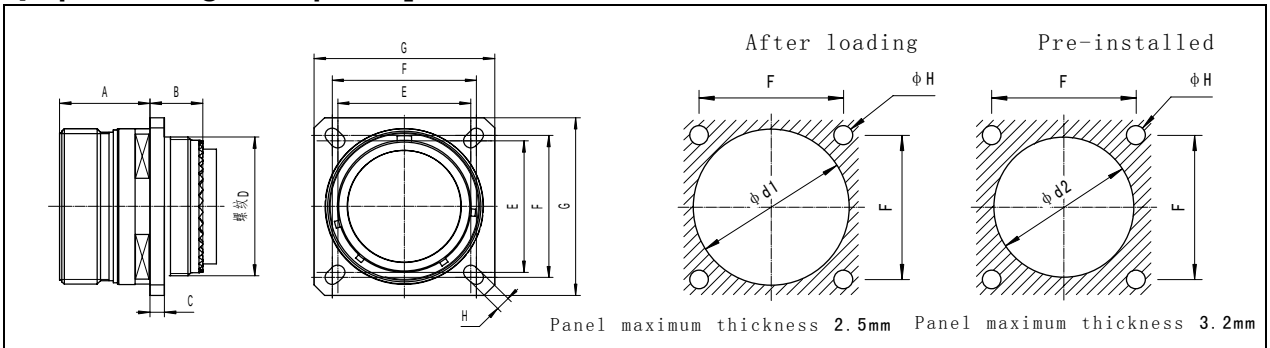
**Outline dimensions**

[Plug]



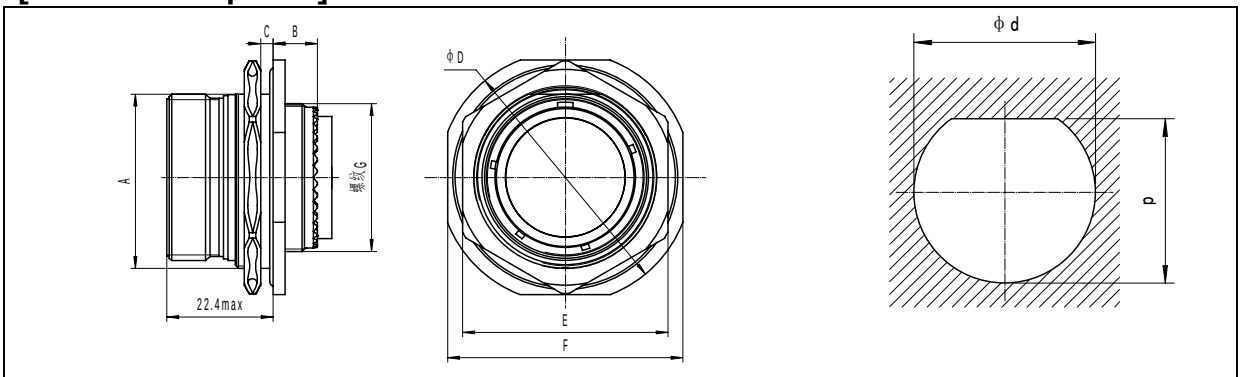

| Shell size | MS Shell size | A max | Thread B | C max |
|---|---|---|---|---|
| 17 | E | 31.00 | M25×1-6g | 35.60 |
| 19 | F | 31.00 | M28×1-6g | 38.50 |
| 21 | G | 31.00 | M31×1-6g | 41.70 |
| 23 | H | 31.00 | M34×1-6g | 44.90 |
| 25 | J | 31.00 | M37×1-6g | 48.00 |

[**Square flange receptacle]**




| Shell size | MS Shell size | A max | B max | C max | Thread D | E | F | G | H | J | d1 min | d2 min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | E | 20.9 | 10.6 | 2.5 | M25×1-6g | 33.3 | 26.97 | 24.61 | 3.25 | 4.93 | 30.96 | 25.81 |
| 19 | F | 20.9 | 10.6 | 2.5 | M28×1-6g | 36.5 | 29.36 | 26.97 | 3.25 | 4.93 | 32.94 | 28.98 |
| 21 | G | 20.1 | 11.4 | 3.2 | M31×1-6g | 39.7 | 31.75 | 29.36 | 3.25 | 4.93 | 36.12 | 32.16 |
| 23 | H | 20.1 | 11.4 | 3.2 | M34×1-6g | 42.9 | 34.93 | 31.75 | 3.91 | 6.15 | 39.29 | 34.93 |
| 25 | J | 20.1 | 11.4 | 3.2 | M37×1-6g | 46.0 | 38.10 | 34.93 | 3.91 | 6.15 | 42.47 | 37.69 |

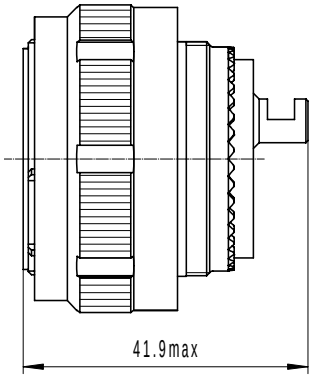
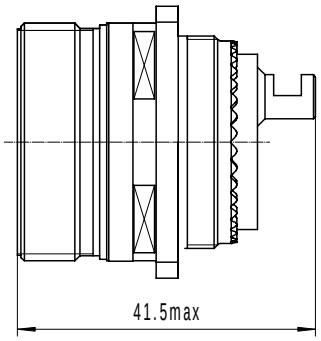
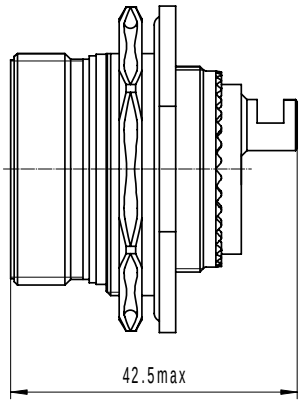
**[Jam nut receptacle]**




| Shell size | MS Shell size | A | B max | C max | D max | E max | F | Thread G | d | p |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | E | 30.40 | 9.90 | 3.20 | 44.80 | 37.00 | 41.30 | M25×1-6g | 31.98 | 30.68 |
| 19 | F | 33.40 | 9.90 | 3.20 | 49.30 | 41.00 | 46.00 | M28×1-6g | 35.15 | 33.86 |
| 21 | G | 36.50 | 9.90 | 3.20 | 52.70 | 46.00 | 49.20 | M31×1-6g | 38.28 | 37.06 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 23 | H | 39.70 | 9.90 | 3.20 | 55.90 | 50.00 | 52.40 | M34×1-6g | 41.50 | 40.24 |
| 25 | J | 42.80 | 9.90 | 3.20 | 59.00 | 51.23 | 55.60 | M37×1-6g | 44.68 | 43.41 |

R255/3 series power soldering connectors

| R255/48 plug | R255/42 receptacle |
|---|---|
|  |  |
| R255/46 receptacle | |
|  | |

| Solder contact size | Solder cup ID | The max. applicable wire gauge（AWG） |
|---|---|---|
| 20# | φ1.1 | 20 |
| 16# | φ1.9 | 16 |
| 10# | φ3.6 | 10 |
| 8# | φ4.5 | 8 |
| 6# | φ5.5 | 6 |
| 4# | φ7.1 | 4 |
| 0# | φ11.5 | 0 |
| 2/0# | φ12.6 | 00 |