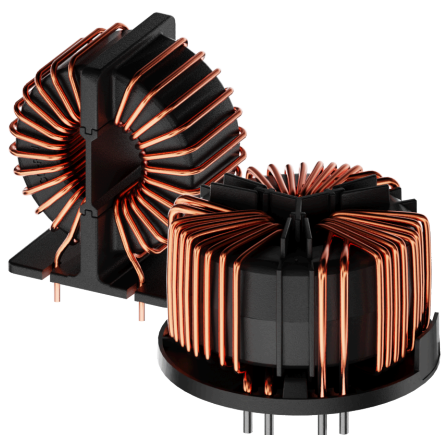
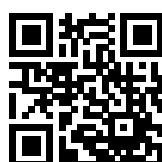


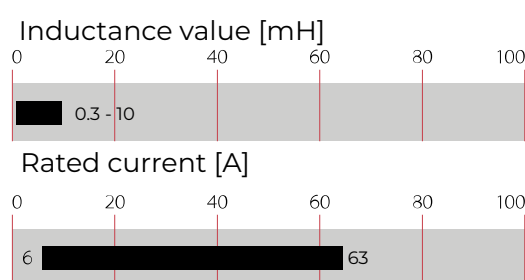
Current-compensated Chokes



- Rated currents from 6 to 63 A
- Up to 600 VAC and VDC
- 2- and 3-wire configurations
- Horizontal and vertical PCB mounting types
- Ruggedized saturation and thermal behavior
- Open construction for forced and convection cooling
- Straightforward pin-out for easy PCB design



Performance indicators



Technical Specifications

| | |
|--|--|
| Rated currents | 6 to 63 A @ 60°C |
| Rated inductance | 0.3 to 6 mH (3-line) 0.5 to 10 mH (2-line) |
| Stray inductance | Max. 1% of rated inductance (@ 100 kHz 1 V, 0 A) |
| High potential test voltage | 3 kV DC 3s (coil to coil) Repetition with max. 80% of the HV test voltage |
| Temperature range (operation and storage) | -40°C to +100°C (6 to 20 A) / -40°C to +125°C (25 to 63 A) |
| Climatic category | 40/100/56 (acc. IEC 60068-1) (6 to 20 A) / 40/125/56 (acc. IEC 60068-1) (25 to 63 A) |
| Design corresponding to | UL/IEC 60938-1/-2 UL1446 (>20A) |
| Overvoltage category | III (acc. IEC 60664-1) |
| Creepage and clearance distances | Creepage & Clearance (2-line): ≥ 3.5 mm (Coil - Coil) / ≥ 3.0 mm (Coil-Core) Creepage & Clearance (3-line): ≥ 6.3 mm (Coil - Coil) / ≥ 5.5 mm (Coil-Core) |
| Pollution degree | PD2 (acc. IEC60664-1) |
| Altitude | 2000 m, current and voltage derating above |
| Vibration and shock | 3M4 (according IEC 60721-3-3) |
| Flammability according to | UL 94 V0 |
| MTBF | >2'000'000 h (MIL-HDBK-217) |
| Operating voltage | 600 VAC (3-line) 300 VAC/425 VDC (2-line) |
| Operating frequency | DC to 400 Hz |

Approvals & Compliances



EIS applicable for currents > 20A

RT common-mode chokes are mainly used to filter EMI noise on AC power lines up to 600 VAC. EMI noise of electronic equipment can go to the power lines and disturb the proper function of other devices like communication devices or control logic of robotics. Thus noise generated by the equipment from switched power electronics or by high slew rates of controllers needs to be filtered. RT common-mode chokes are used to suppress EMI noise in PCB integrated filter designs with line bypass capacitors or in combination with single phase filters for extra low leakage filter designs.

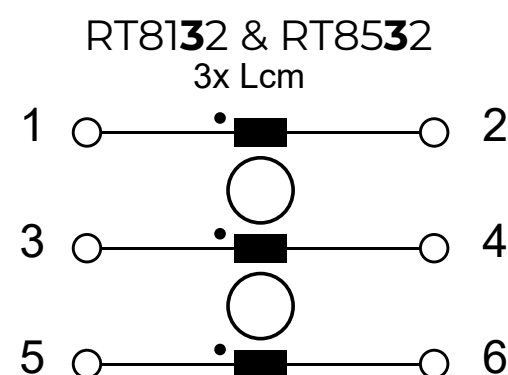
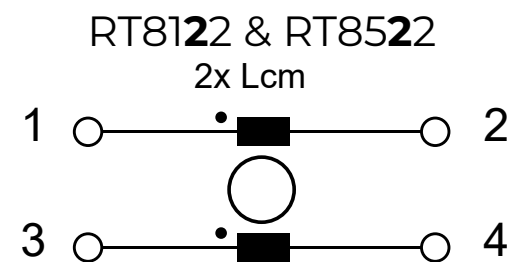
Features and Benefits

- Cost-effective PCB designs for up to 100 A with forced cooling *
- EIS (elektrical insulation system E332676) for currents > 20A acc. to UL 1446
- Compact size and light weight
- Low magnetic leakage flux
- Excellent winding insulation
- Standardized foot print
- Broad range of inductance ratings
- Custom-specific versions on request











































Typical Applications

- AC and DC filtering for midsize power range drives, photovoltaic inverters, fast chargers, EV charging stations, UPS and switch mode power supplies
- Filter with low leakage current noise or improved immunity against grid disturbances
- Electronic devices, automation and (industrial) LED lighting
- Communication devices
- Medical and laboratory Equipment
- Converters

Typical electrical schematic



RT Series

| Selection table | Buy | convection cooling nominal current @ 60°C [A] | *forced cooling 3 m/s nominal current @ 60°C [A] | Inductance Ln @ 25°C 100kHz [mH/path] | Resistance R @ 25°C [mΩ/path] | Choke [size] | ***Ø Pin ±0.1 ØP [mm] | Weight [g] |
|-----------------|---|--|---|--|-------------------------------------|-----------------|-----------------------------|---------------|
| RT8122-6-10M0 |  | 6 | 9.5 | 10.0 | 33.0 | 1 | 1.1 | 80 |
| RT8122-8-8M0 |  | 8 | 12.5 | 8.0 | 21.0 | 1 | 1.3 | 80 |
| RT8122-10-6M0 |  | 10 | 16 | 6.0 | 16.0 | 1 | 1.4 | 80 |
| RT8122-12-5M0 |  | 12 | 19 | 5.0 | 14.0 | 2 | 1.5 | 100 |
| RT8122-16-4M0 |  | 16 | 27 | 4.0 | 10.0 | 2 | 1.8 | 110 |
| RT8122-20-3M0 |  | 20 | 32 | 3.0 | 7.0 | 3 | 2 | 160 |
| RT8122-32-1M5 |  | 32 | 51 | 1.5 | 3.4 | 13 | 2.36 | 200 |
| RT8122-40-1M2 |  | 40 | 64 | 1.2 | 2.2 | 13 | 2.8 | 210 |
| RT8122-50-1M0 |  | 50 | 80 | 1.0 | 1.7 | 14 | 2x2.2 | 270 |
| RT8122-63-0M5 |  | 63 | 100 | 0.5 | 1.1 | 14 | 2x2.36 | 260 |
| RT8522-6-10M0 |  | 6 | 9.5 | 10.0 | 33.0 | 4 | 1.1 | 70 |
| RT8522-8-8M0 |  | 8 | 12.5 | 8.0 | 21.0 | 4 | 1.3 | 80 |
| RT8522-10-6M0 |  | 10 | 16 | 6.0 | 16.0 | 4 | 1.4 | 80 |
| RT8522-12-5M0 |  | 12 | 19 | 5.0 | 14.0 | 5 | 1.5 | 90 |
| RT8522-16-4M0 |  | 16 | 27 | 4.0 | 10.0 | 5 | 1.8 | 110 |
| RT8522-20-3M0 |  | 20 | 32 | 3.0 | 7.0 | 6 | 2.0 | 150 |
| RT8522-32-1M5 |  | 32 | 51 | 1.5 | 3.4 | 15 | 2.36 | 210 |
| RT8522-40-1M2 |  | 40 | 64 | 1.2 | 2.2 | 15 | 2.8 | 220 |
| RT8522-50-1M0 |  | 50 | 80 | 1.0 | 1.7 | 16 | 2x2.2 | 280 |
| RT8522-63-0M5 |  | 63 | 100 | 0.5 | 1.0 | 16 | 2x2.36 | 270 |
| RT8132-6-6M0 |  | 6 | 9.5 | 6.0 | 27.0 | 7 | 1.1 | 80 |
| RT8132-8-4M8 |  | 8 | 12.5 | 4.8 | 17.0 | 7 | 1.3 | 90 |
| RT8132-10-4M0 |  | 10 | 16 | 4.0 | 15.0 | 8 | 1.5 | 110 |
| RT8132-12-3M6 |  | 12 | 19 | 3.6 | 12.0 | 8 | 1.6 | 120 |
| RT8132-16-3M0 |  | 16 | 27 | 3.0 | 8.0 | 9 | 1.8 | 170 |
| RT8132-20-2M5 |  | 20 | 32 | 2.5 | 7.0 | 9 | 2.1 | 190 |
| RT8132-25-1M5 |  | 25 | 40 | 1.5 | 3.5 | 17 | 2.4 | 240 |
| RT8132-32-1M2 |  | 32 | 51 | 1.2 | 2.5 | 17 | 2.4 | 240 |
| RT8132-40-0M7 |  | 40 | 64 | 0.7 | 1.9 | 18 | 2x1.9 | 270 |
| RT8132-50-0M5 |  | 50 | 80 | 0.5 | 1.2 | 18 | 2x2.2 | 290 |
| RT8132-63-0M3 |  | 63 | 100 | 0.3 | 0.7 | 18 | 2x2.6 | 300 |
| RT8532-6-6M0 |  | 6 | 9.5 | 6.0 | 27.0 | 10 | 1.1 | 90 |
| RT8532-8-4M8 |  | 8 | 12.5 | 4.8 | 17.0 | 10 | 1.3 | 90 |
| RT8532-10-4M0 |  | 10 | 16 | 4.0 | 15.0 | 11 | 1.5 | 110 |
| RT8532-12-3M6 |  | 12 | 19 | 3.6 | 12.0 | 11 | 1.6 | 120 |
| RT8532-16-3M0 |  | 16 | 27 | 3.0 | 8.0 | 12 | 1.8 | 160 |
| RT8532-20-2M5 |  | 20 | 32 | 2.5 | 7.0 | 12 | 2.1 | 190 |
| RT8532-25-1M5 |  | 25 | 40 | 1.5 | 3.5 | 19 | 2.4 | 250 |
| RT8532-32-1M2 |  | 32 | 51 | 1.2 | 2.5 | 19 | 2.4 | 250 |
| RT8532-40-0M7 |  | 40 | 64 | 0.7 | 1.9 | 20 | 2x1.9 | 290 |
| RT8532-50-0M5 |  | 50 | 80 | 0.5 | 1.2 | 20 | 2x2.2 | 290 |
| RT8532-63-0M3 |  | 63 | 100 | 0.3 | 0.8 | 20 | 2x2.6 | 310 |

Test conditions: Inductance tolerance: +50%, -30%; Resistance tolerance: +15% @ 25°C; Electrical characteristics @ 25°C: ±2°C

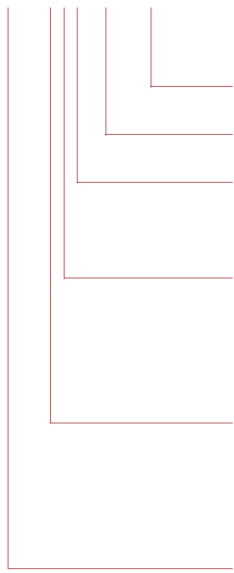
* typical current for forced cooling with 3 m/s. Due to the possible turbulences and degradation of the air stream within an equipment please consider thermal validation.

** typical stray inductance, max is 0.1% of Ln

*** Length of pin (Dimension P) is always 5.5 mm ± 1

Product selector

RT 8xxx-xx-xmX



Inductance value (e.g. 9M6 = 9.6 mH)

Nominal input current [A] (convection cooling)

Terminal type (2 for PCB pin)

2 = 2-line choke

3 = 3-line choke

1 = Horizontal

5 = Vertical

Schaffner standard ring-core choke series RT

Examples: RT8532-16-3M0: Vertical 3-line choke for 16 A, with 3 mH ; RT8122-20-3M0: Horizontal 2-line choke for 20 A, with 3 mH

Distribution Inventory

Up-to-date inventory levels for global distributors is available at

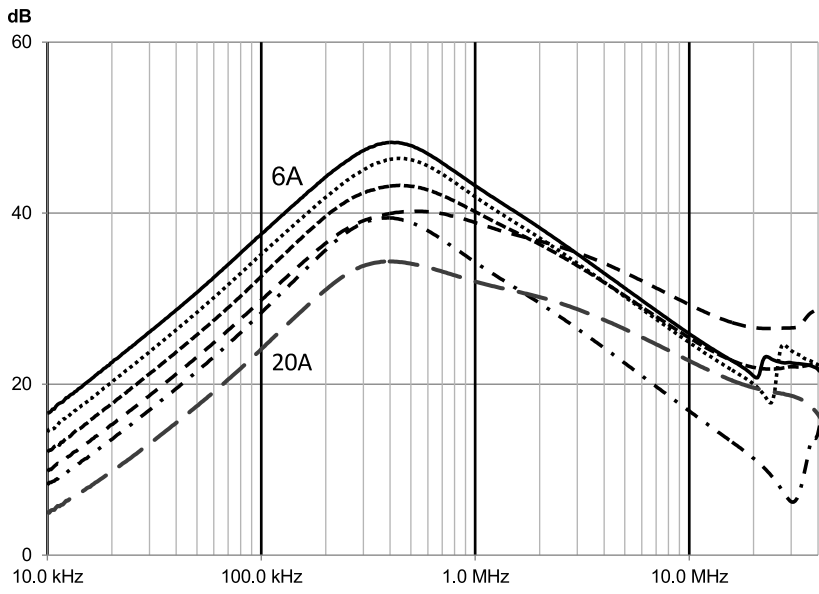
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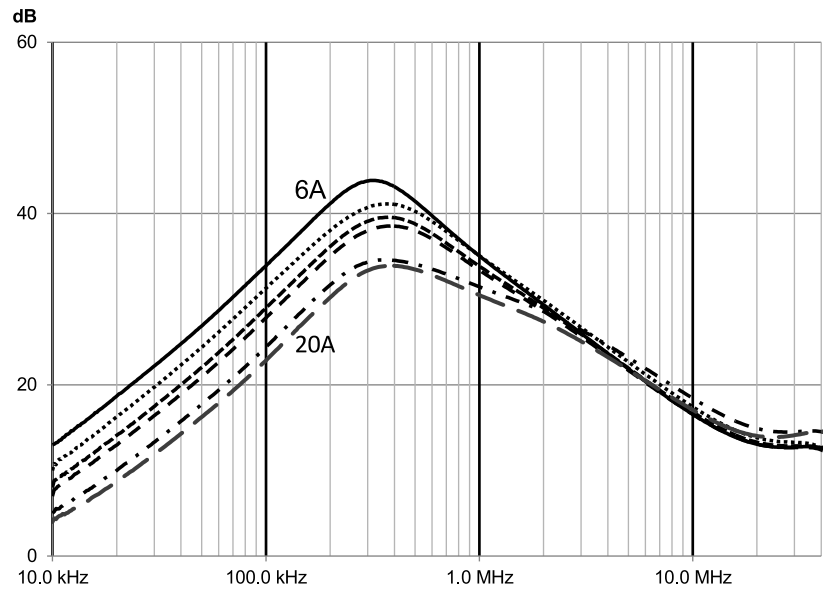
Typical Choke Attenuation/Resonance Frequency Characteristics

Per CISPR 17; 50 Ω/50 Ω asym

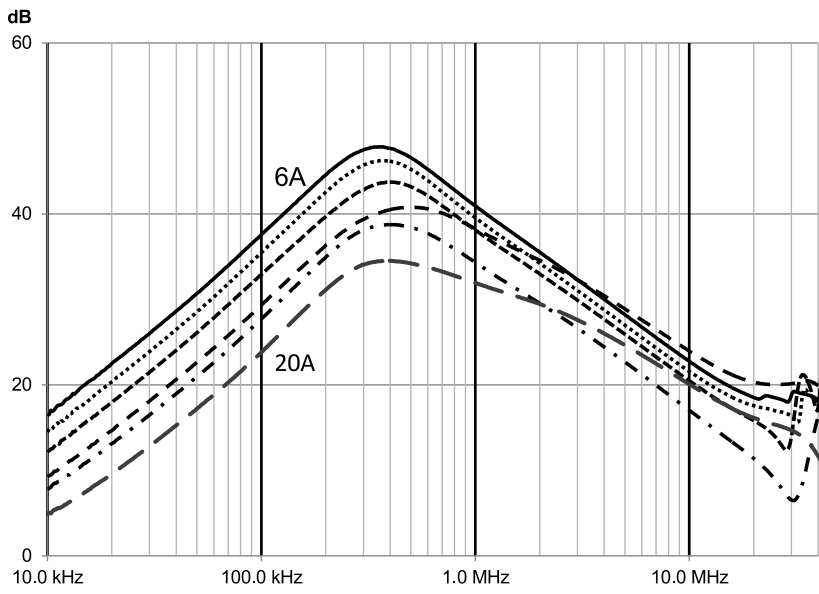
RT 8122



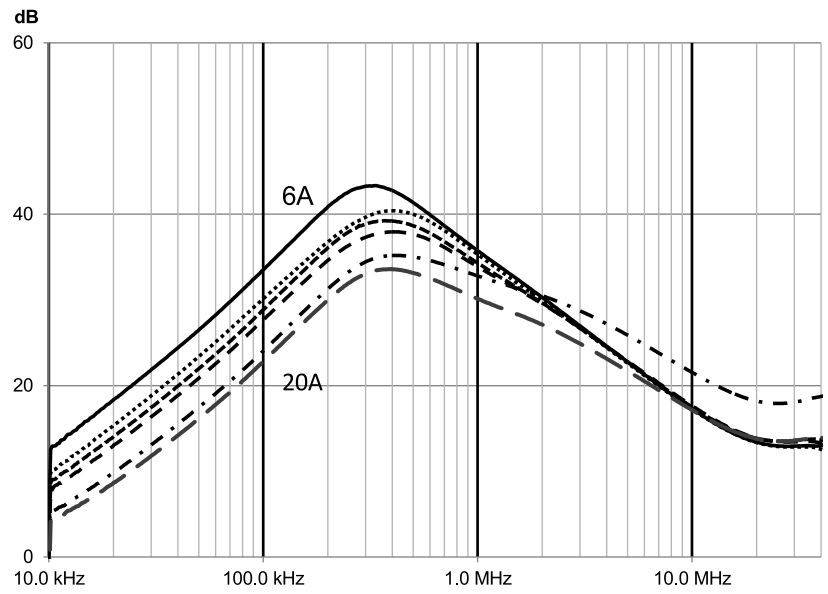
RT 8132



RT 8522

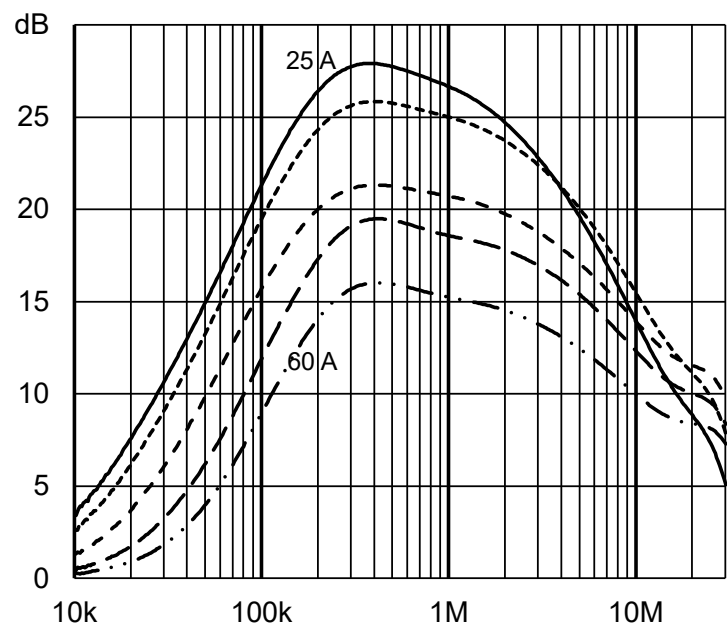
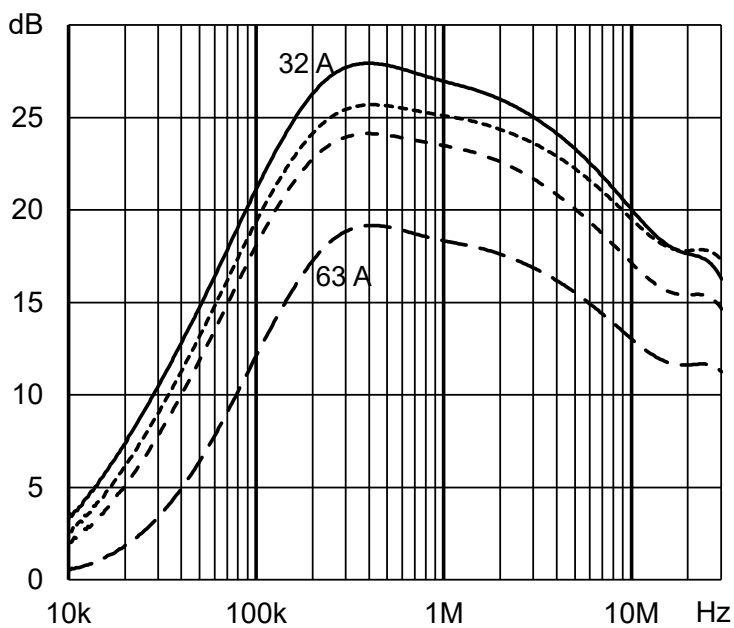


RT 8532



RT 8122 and RT 8522 > 20 A

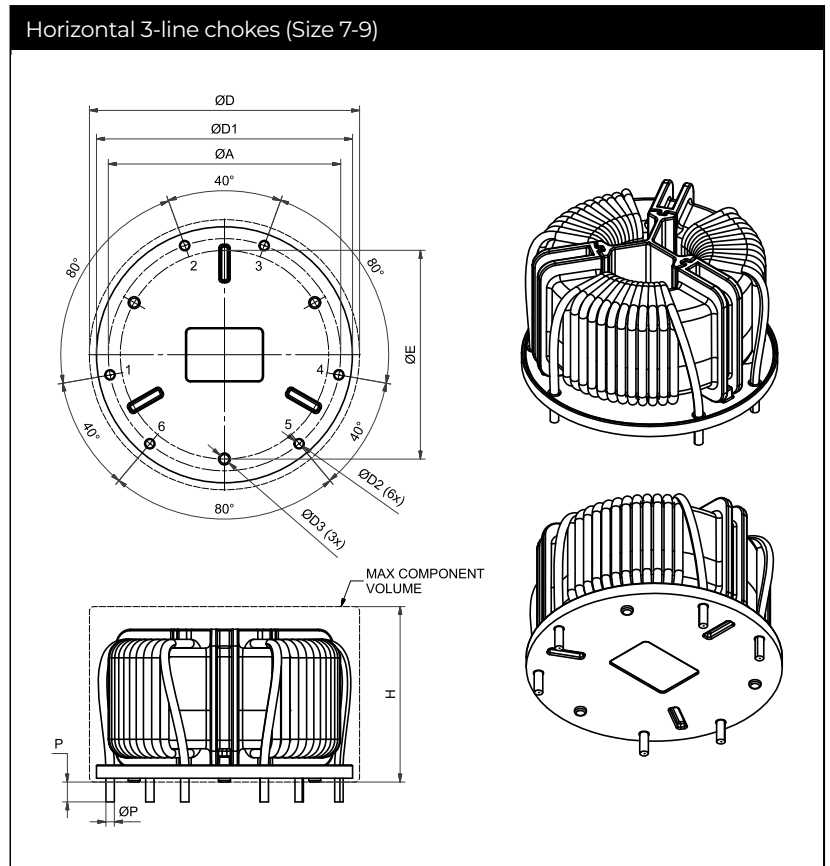
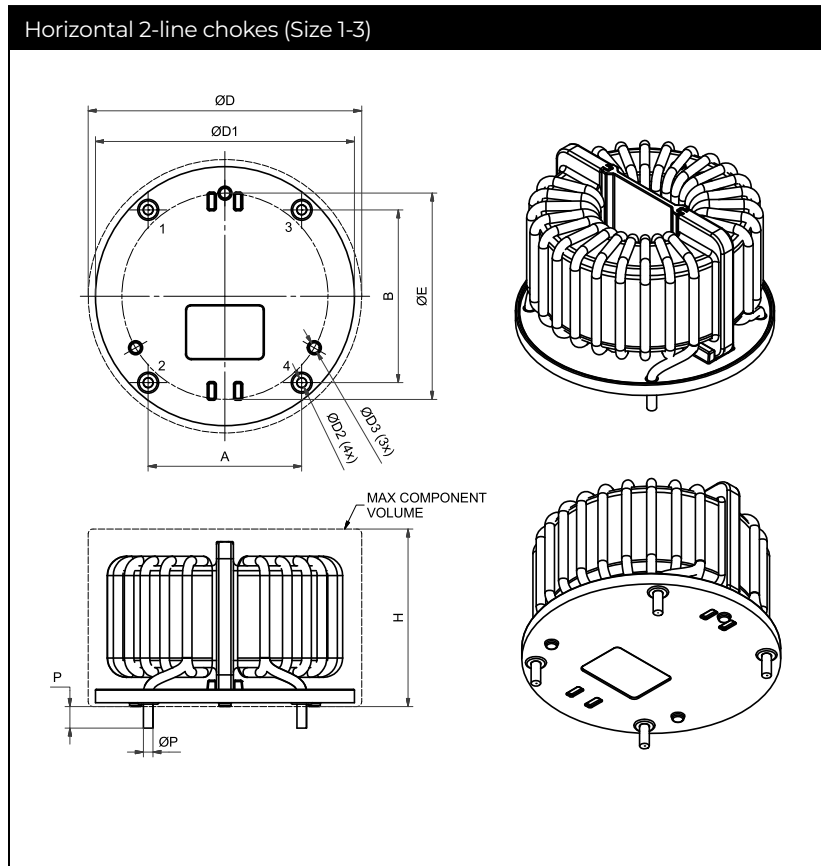
RT 8132 and RT 8532 > 20 A



Mechanical Data: Horizontal Chokes (2-line And 3-line Up To Size 12)

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m



Dimensions

| | A | B | ØD | H | ØD1 | ØD2 | ØD3 | ØE |
|---|--------|--------|-------|-------|--------|-----|-----|----|
| | (±0.5) | (±0.5) | (max) | (max) | (±0.5) | | | |
| Size1 (RT8122-6-10M0, RT8122-8-8M0, RT8122-10-6M0) | 21 | 25 | 45 | 34 | 42 | 1.5 | 2.5 | 36 |
| Size2 (RT8122-12-5M0, RT8122-16-4M0) | 26 | 30 | 51 | 33 | 48 | 1.9 | 2.5 | 40 |
| Size3 (RT8122-20-3M0) | 32 | 36 | 57 | 37 | 54 | 2.1 | 2.5 | 43 |
| Size 7 (RT8132-6-6M0, RT8132-8-4M8) | 38 | - | 46 | 34 | 43 | 1.4 | 2.5 | 35 |
| Size 8 (RT8132-10-4M0, RT8132-12-3M6) | 44 | - | 51 | 33 | 48 | 1.7 | 2.5 | 40 |
| Size 9 (RT8132-16-3M0, RT8132-20-2M5) | 49 | - | 57 | 37 | 54 | 2.3 | 2.5 | 44 |

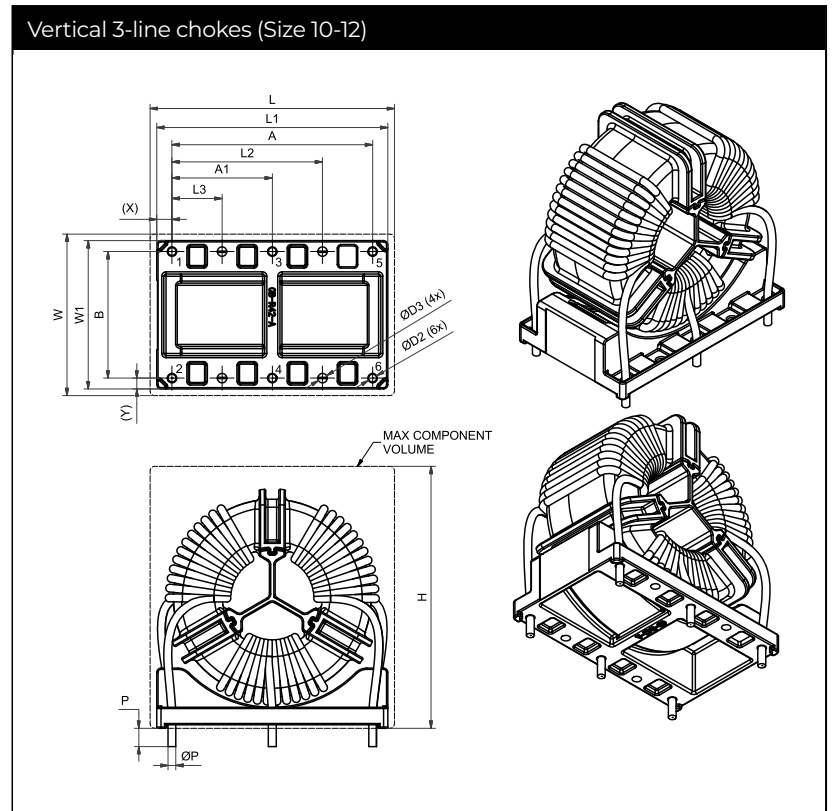
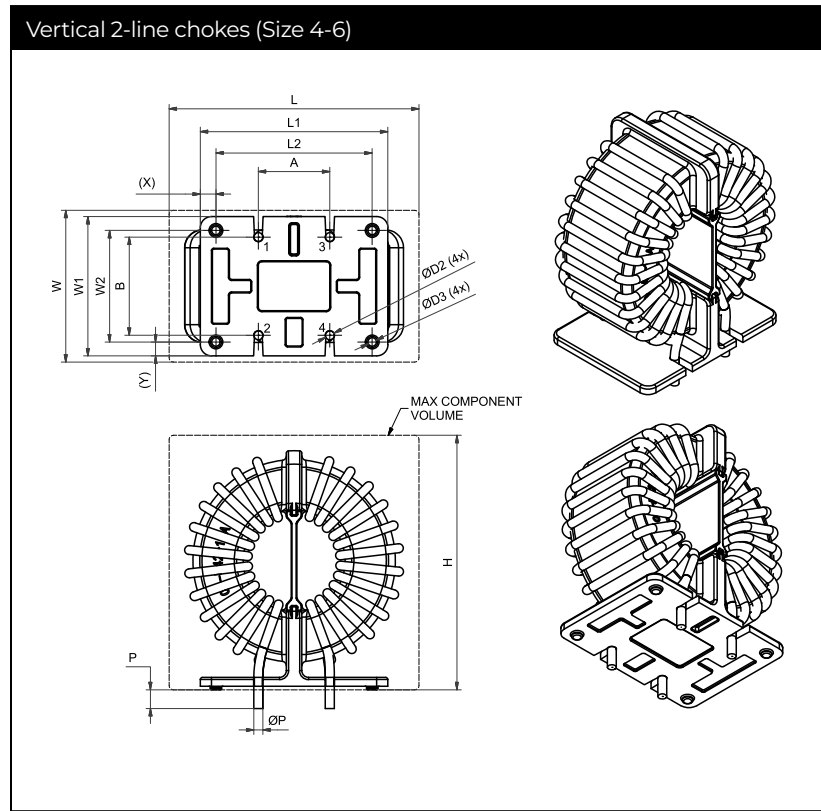
Pin material: Copper (base), Sn (final plating typical thickness 0.15 mm; composition: Sn-1.2Ag-4Cu or SN-3Cu-0.25Ni)

Please visit www.schaffner.com to find more details on filter connections.

Mechanical Data: Vertical Chokes (2-line And 3-line Up To Size 12)

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m



Dimensions

| | A | A1 | B | L | W | H | L1 | L2 | L3 | W1 | W2 | ØD2 | ØD3 | X | Y |
|---|--------|--------|--------|-------|-------|-------|--------|--------|------|--------|--------|-----|-----|-----|-----|
| | (±0.5) | (±0.5) | (±0.5) | (max) | (max) | (max) | (±0.5) | (±0.5) | | (±0.5) | (±0.5) | | | | |
| Size 4 (RT8522-6-10M0, RT8522-8-8M0, RT 8522-10-6M0) | 16 | - | 20 | 43 | 32 | 44 | 32 | 26 | - | 27.8 | 22 | 1.5 | 2.5 | 3 | 2.9 |
| Size 5 (RT8522-12-5M0, RT8522-16-4M0) | 16 | - | 22 | 50 | 32 | 52 | 39 | 33 | - | 27 | 23 | 1.9 | 2.5 | 3 | 2 |
| Size 6 (RT8522-20-3M0) | 16 | - | 22 | 56 | 32 | 57 | 42 | 35 | - | 31.2 | 25 | 2.1 | 2.5 | 3.5 | 3.1 |
| Size 10 (RT8532-6-6M0, RT8532-8-4M8) | 36 | 18 | 24 | 44 | 32 | 47 | 41 | 27 | 9 | 29 | - | 1.4 | 1.4 | 2.5 | 2.5 |
| Size 11 (RT8532-10-4M0, RT8532-12-3M6) | 38 | 19 | 24 | 49 | 34 | 53 | 46 | 28.5 | 9.5 | 31 | - | 1.7 | 1.7 | 4 | 3.5 |
| Size 12 (RT8532-16-3M0, RT8532-20-2M5) | 46 | 23 | 29 | 56 | 37 | 60 | 53 | 34.5 | 11.5 | 34 | - | 2.2 | 2.2 | 3.5 | 2.5 |

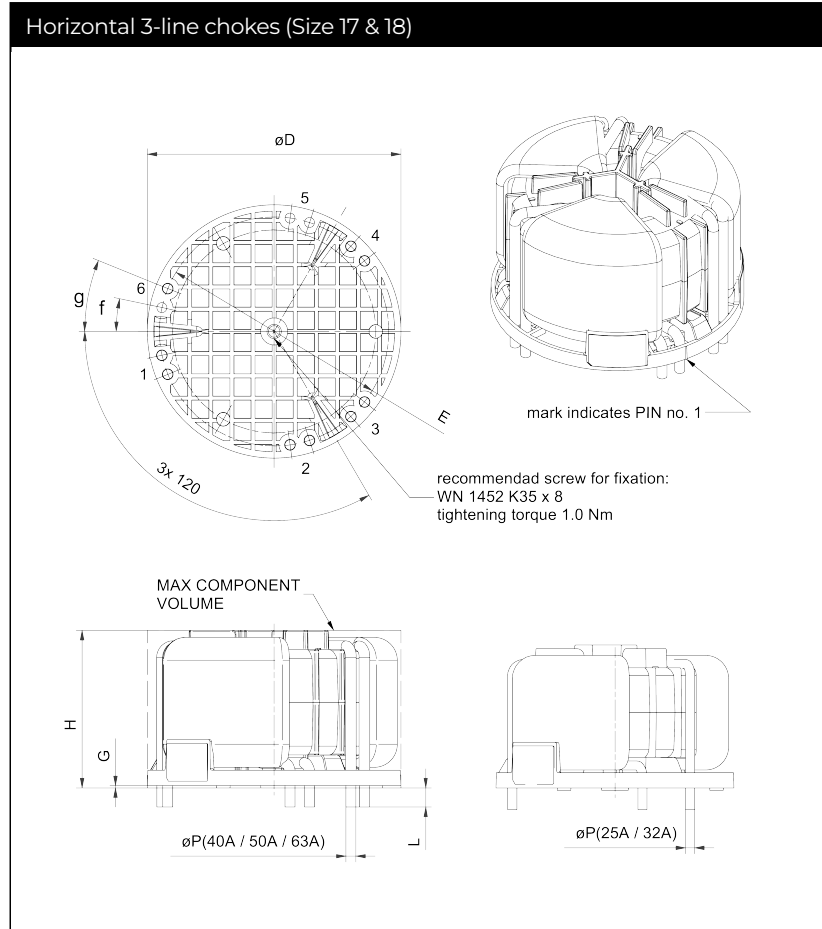
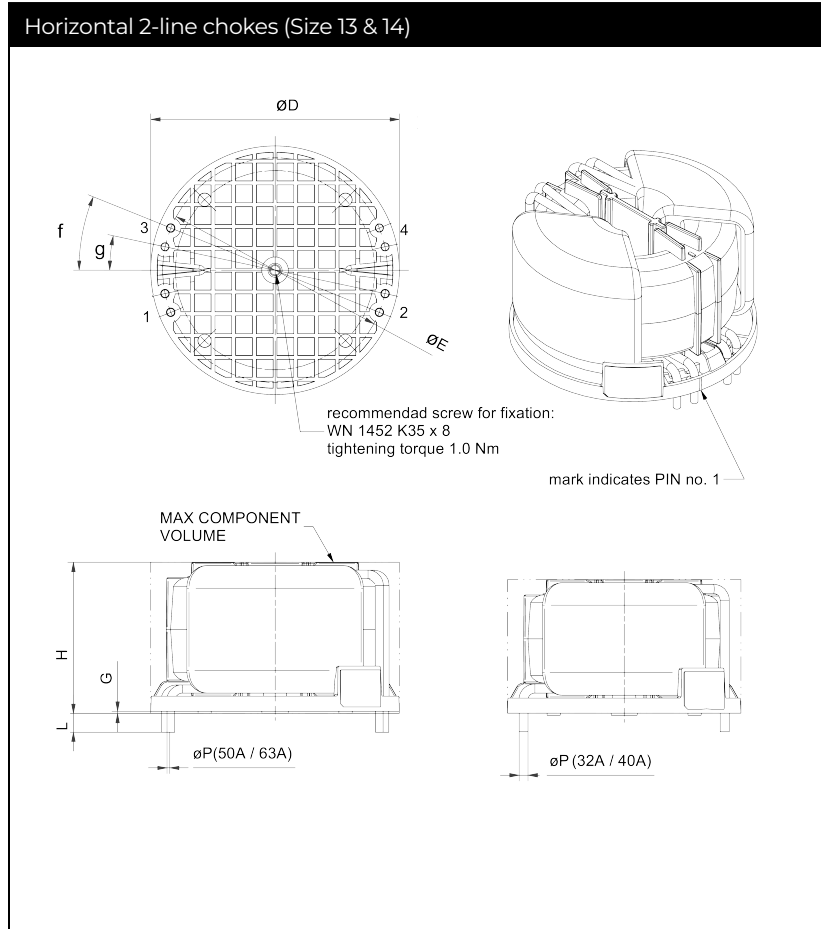
Pin material: Copper (base), Sn (final plating typical thickness 0.15 mm; composition: Sn-1.2Ag-4Cu or SN-3Cu-0.25Ni)

Please visit www.schaffner.com to find more details on filter connections.

Mechanical Data: Vertical And Horizontal Chokes

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m



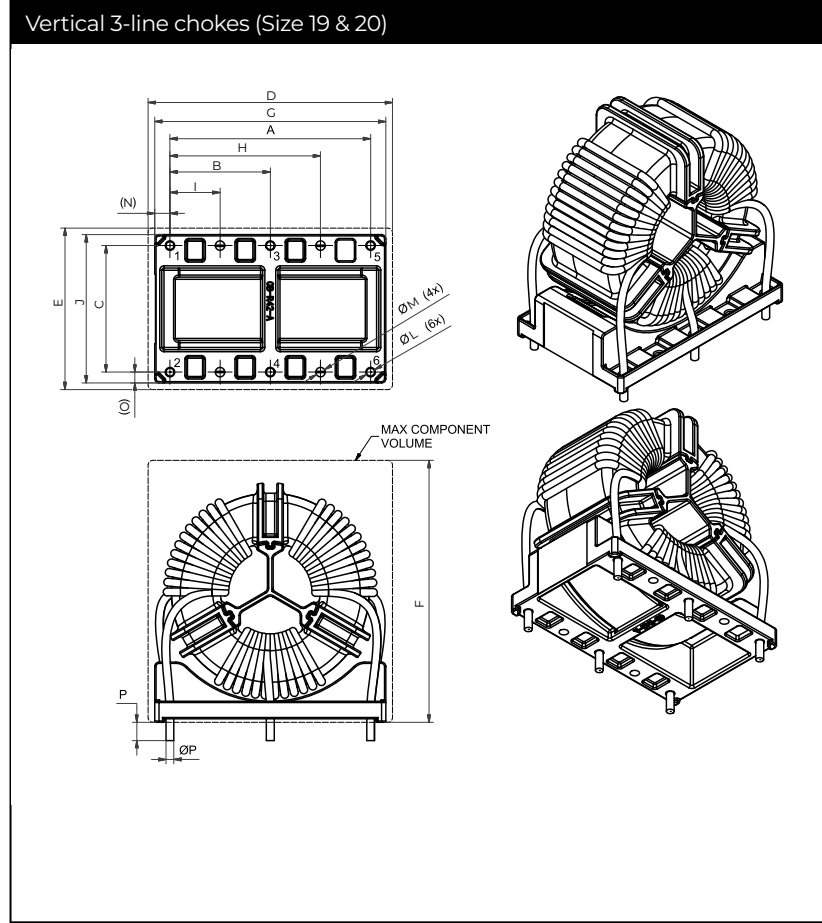
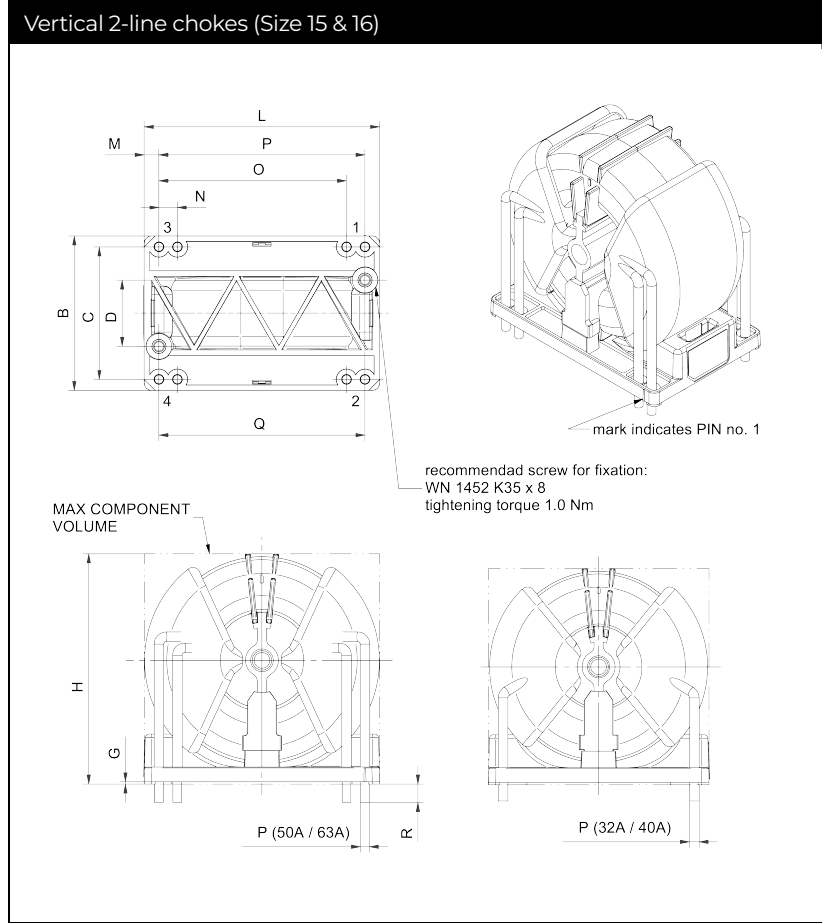
Dimensions

| | $\varnothing D$ | H | G | $\varnothing E$ | f | g | L | ΦP | ΦP | ΦP | ΦP | ΦP |
|--|-----------------|-------|-----------|-----------------|----------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | | | | | (25A) | (32A) | (40A) | (50A) | (63A) |
| | ± 0.2 | (max) | ± 0.1 | ± 0.2 | $\pm 10^\circ$ | $\pm 10^\circ$ | ± 0.5 | ± 0.1 | ± 0.1 | ± 0.1 | ± 0.1 | ± 0.1 |
| Size 13 (RT8122-32-1M5, RT8122-40-1M2) | 62 | 37 | 0.6 | 55.4 | 150° | | 5 | | 2.4 | 2.8 | | |
| Size 14 (RT8122-50-1M0, RT8122-63-0M5) | 66 | 41 | 0.6 | 59.8 | 120° | 220° | 5 | | | | 2.2 | 2.2 |
| Size 17 (RT8132-25-1M5, RT8132-32-1M2) | 62 | 38 | 0.6 | 55.4 | 150° | | 5 | 2.4 | 2.4 | | | |
| Size 18 (RT8132-40-0M7, RT8132-40-0M5, RT8132-63-0M3) | 66 | 42 | 0.6 | 59.8 | 120° | 220° | 5 | | | 1.9 | 2.2 | 2.6 |

Mechanical Data: Vertical And Horizontal Chokes

All dimensions in mm; 1 inch = 25.4 mm

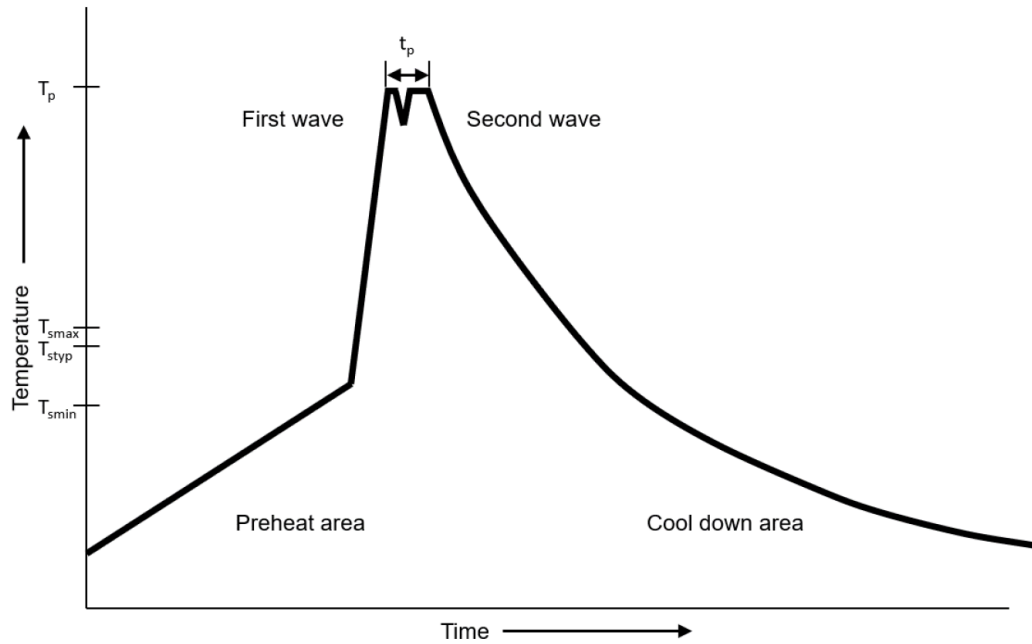
Tolerances according: ISO 2768-m/EN 22768-m



Dimensions

| | H | G | B | C | D | L | M | N | O | P | Q | S | T | R | øP (25A) | øP (32A) | øP (40A) | øP (50A) | øP (63A) |
|--|----|------|------|------|------|------|------|------|------|------|------|------|------|------|-------------|-------------|-------------|-------------|-------------|
| | | ±0.1 | ±0.2 | ±0.4 | ±0.2 | ±0.2 | ±0.1 | ±0.4 | ±0.4 | ±0.4 | ±0.4 | ±0.4 | ±0.2 | ±0.5 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 |
| Size 15 (RT8522-32-1M5, RT8522-40-1M2) | 60 | 0.6 | 38 | 32 | 12 | 60 | 4 | | | 52 | 46 | | | 5 | | 2.4 | 2.8 | | |
| Size 16 (RT8522-50-1M0, RT8522-63-0M5) | 64 | 0.6 | 42 | 36 | 18 | 64 | 4 | 5 | 51 | 56 | 56 | | | 5 | | | | 2.2 | 2.2 |
| Size 19 (RT8532-25-1M5, RT8532-32-1M2) | 63 | 0.6 | 38 | 32 | 12 | 60 | 4 | | 26 | | | 52 | 46 | 5 | 2.4 | 2.4 | | | |
| Size 20 (RT8532-40-0M7, RT8532-50-0M5, RT8532-63-0M3) | 67 | 0.6 | 42 | 36 | 18 | 64 | 4 | 5 | 25.5 | 30.5 | 51 | 56 | 56 | 5 | | | 1.9 | 2.2 | 2.6 |

Soldering Profile



Reference IEC61760-1:2020

Wave Soldering Profile:

| Profile Feature | Standard SnPb Solder | Lead (Pb) Free Solder |
|--|--|-----------------------|
| Preheat | Temperature min. (T_{smin}) | 100 °C |
| | Temperature typ. (T_{styp}) | 120 °C |
| | Temperature max. (T_{smax}) | 130 °C |
| Time (T_{smin} to T_{smax})(t_s) | 70 seconds | 70 seconds |
| Δ Preheat to max Temperature | 150 °C max. | 150 °C max. |
| Peak temperature (T_p) | 235 °C – 260 °C | 250 °C – 260 °C |
| Time at peak temperature (t_p) | 6 seconds max. | 6 seconds max. |
| | 2 seconds each wave | 2 seconds each wave |
| Ramp-up rate | the temperature gradient of increasing slope shall not exceed 3 K/s. | |
| Ramp-down rate | ~ 2 K/s min. | ~ 2 K/s min. |
| | ~ 3.5 K/s typ. | ~ 3.5 K/s typ. |
| | ~ 5 K/s max. | ~ 5 K/s max. |
| Time 25 °C to 25 °C | 4 minutes | 4 minutes |

Manual solder

370 °C \pm 10 °C, 10 seconds \pm 1s (by soldering iron).

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