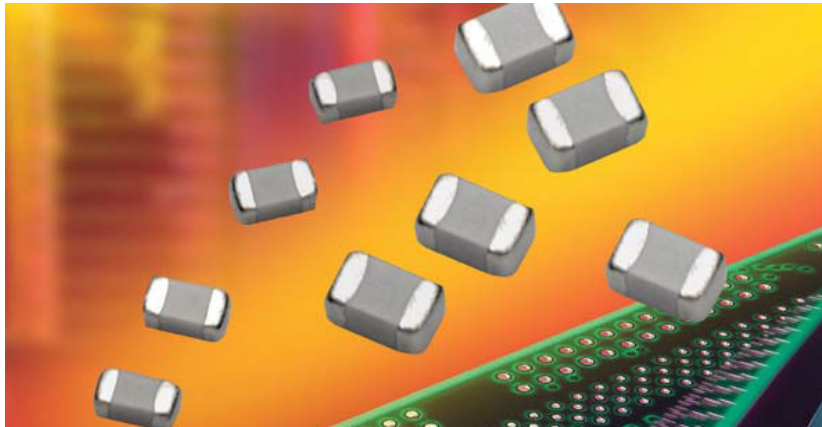


RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

SQCS (0603) SQCF (0805) Ultra Low ESR MLC



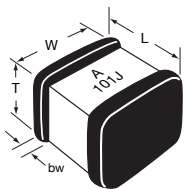
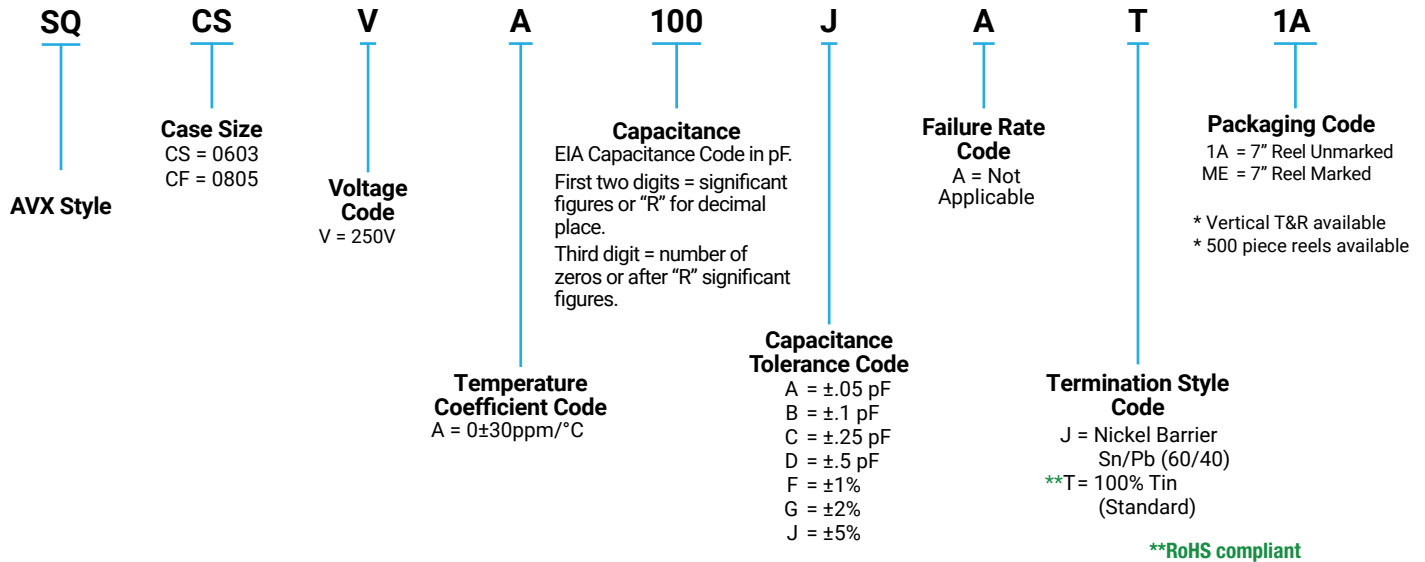
FEATURES:

- Low ESR
- High Q
- High Self Resonance
- Capacitance Range 0.1 pF to 240 pF
- EIA Size

APPLICATIONS:

- RF Power Amplifiers
- Low Noise Amplifiers
- Filter Networks
- Point to Point Radios

HOW TO ORDER



MECHANICAL DIMENSIONS:

inches (millimeters)

| Case | Length (L) | Width (W) | Thickness (T) | Band Width (bw) |
|------|--------------------------|--------------------------|---------------------|--------------------------|
| SQCS | .063±.006 (1.60±.152) | .032±.006 (.813±.152) | .030 Max. (.762) | .014±.006 (.357±.152) |
| SQCF | .079±.008 (2.01±.200) | .049±.008 (1.24±.200) | .045 Max. (1.14) | .014±.006 (.357±.152) |

TAPE & REEL: ALL TAPE AND REEL SPECIFICATIONS ARE IN COMPLIANCE WITH EIA RS481 (EQUIVALENT TO IEC 286 PART 3).

- 8mm carrier
- 7" reel = 4000 pcs (500 piece options)

Not RoHS Compliant



For RoHS compliant products,
please select correct termination style.



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

SQ Series Ultra Low ESR MLC



ELECTRICAL SPECIFICATIONS

| | |
|---------------------------------------|---|
| Temperature Coefficient (TCC) | (A) 0 ± 30 PPM/°C |
| Operating Temperature | -55°C to +125°C |
| Quality Factor (Q) | Greater than 10,000 at 1 MHz |
| Insulation Resistance (IR) | 0.1 pF to 240 pF 10 ⁵ Megohms min. @ 25°C at rated WVDC 10 ⁴ Megohms min. @ 125°C at rated WVDC |
| Working Voltage (WVDC) | See Capacitance Values table |
| Dielectric Withstanding Voltage (DWV) | 250% of rated WVDC for 5 secs |
| Aging Effects | None |
| Piezoelectric Effects | None |
| Capacitance Drift | ± (0.02% or 0.02 pF), whichever is greater |

ENVIRONMENTAL CHARACTERISTICS

AVX SQ will meet and exceed the requirements of EIA-198, MIL-PRF-55681 and MIL-PRF-123

| | |
|----------------------------------|---|
| Thermal Shock | Mil-STD-202, Method 107, Condition A |
| Moisture Resistance | Mil-STD-202, Method 106 |
| Low Voltage Humidity | Mil-STD-202, Method 103, condition A, with 1.5 VDC applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours |
| Life Test | Mil-STD-202, Method 108, for 2000 hours at 125°C |
| Shock | Mil-STD-202, Method 213, Condition J |
| Vibration | Mil-STD-202, Method 204, Condition B |
| Immersion | Mil-STD-202, Method 104, Condition B |
| Salt Spray | Mil-STD-202, Method 101, Condition B |
| Solderability | Mil-STD-202, Method 208 |
| Terminal Strength | Mil-STD-202, Method 211 |
| Temperature Cycling | Mil-STD-202, Method 102, Condition C |
| Barometric Pressure | Mil-STD-202, Method 105, Condition B |
| Resistance to Solder Heat | Mil-STD-202, Method 210, Condition C |

RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

SQ Series Available Capacitance/Size/WVDC/T.C.



TABLE I: TC: A (0±30PPM/°C) CASE SIZE S

| Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol. | WVDC |
|---------|-----------|------|---------|-----------|------|---------|-----------|------|
| 0.1 | A, B | 250 | 3.6 | A, B, C | 250 | 39 | F, G, J | 250 |
| 0.2 | A, B | 250 | 3.9 | A, B, C | 250 | 43 | F, G, J | 250 |
| 0.3 | A, B | 250 | 4.3 | A, B, C | 250 | 47 | F, G, J | 250 |
| 0.4 | A, B | 250 | 4.7 | A, B, C | 250 | 51 | F, G, J | 250 |
| 0.5 | A, B, C | 250 | 5.1 | A, B, C | 250 | 56 | F, G, J | 250 |
| 0.6 | A, B, C | 250 | 5.6 | A, B, C | 250 | 62 | F, G, J | 250 |
| 0.7 | A, B, C | 250 | 6.2 | A, B, C | 250 | 68 | F, G, J | 250 |
| 0.8 | A, B, C | 250 | 6.8 | B, C, D | 250 | 75 | F, G, J | 250 |
| 0.9 | A, B, C | 250 | 7.5 | B, C, D | 250 | 82 | F, G, J | 250 |
| 1.0 | A, B, C | 250 | 8.2 | B, C, D | 250 | 91 | F, G, J | 250 |
| 1.1 | A, B, C | 250 | 9.1 | B, C, D | 250 | 100 | F, G, J | 250 |
| 1.2 | A, B, C | 250 | 10 | F, G, J | 250 | | | |
| 1.3 | A, B, C | 250 | 11 | F, G, J | 250 | | | |
| 1.4 | A, B, C | 250 | 12 | F, G, J | 250 | | | |
| 1.5 | A, B, C | 250 | 13 | F, G, J | 250 | | | |
| 1.6 | A, B, C | 250 | 15 | F, G, J | 250 | | | |
| 1.7 | A, B, C | 250 | 16 | F, G, J | 250 | | | |
| 1.8 | A, B, C | 250 | 18 | F, G, J | 250 | | | |
| 1.9 | A, B, C | 250 | 20 | F, G, J | 250 | | | |
| 2.0 | A, B, C | 250 | 22 | F, G, J | 250 | | | |
| 2.2 | A, B, C | 250 | 24 | F, G, J | 250 | | | |
| 2.4 | A, B, C | 250 | 27 | F, G, J | 250 | | | |
| 2.7 | A, B, C | 250 | 30 | F, G, J | 250 | | | |
| 3.0 | A, B, C | 250 | 33 | F, G, J | 250 | | | |
| 3.3 | A, B, C | 250 | 36 | F, G, J | 250 | | | |

TABLE II: TC: A (0±30PPM/°C) CASE SIZE F

| Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol. | WVDC |
|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|
| 0.1 | A, B | 250 | 2.2 | A, B, C | 250 | 15 | F, G, J | 250 | 100 | F, G, J | 250 |
| 0.2 | A, B | 250 | 2.4 | A, B, C | 250 | 16 | F, G, J | 250 | 110 | F, G, J | 250 |
| 0.3 | A, B | 250 | 2.7 | A, B, C | 250 | 18 | F, G, J | 250 | 120 | F, G, J | 250 |
| 0.4 | A, B | 250 | 3.0 | A, B, C | 250 | 20 | F, G, J | 250 | 150 | F, G, J | 250 |
| 0.5 | A, B, C | 250 | 3.3 | A, B, C | 250 | 22 | F, G, J | 250 | 180 | F, G, J | 250 |
| 0.6 | A, B, C | 250 | 3.6 | A, B, C | 250 | 24 | F, G, J | 250 | 200 | F, G, J | 250 |
| 0.7 | A, B, C | 250 | 3.9 | A, B, C | 250 | 27 | F, G, J | 250 | 220 | F, G, J | 250 |
| 0.8 | A, B, C | 250 | 4.3 | A, B, C | 250 | 30 | F, G, J | 250 | 240 | F, G, J | 250 |
| 0.9 | A, B, C | 250 | 4.7 | A, B, C | 250 | 33 | F, G, J | 250 | | | |
| 1.0 | A, B, C | 250 | 5.1 | A, B, C | 250 | 36 | F, G, J | 250 | | | |
| 1.1 | A, B, C | 250 | 5.6 | A, B, C | 250 | 39 | F, G, J | 250 | | | |
| 1.2 | A, B, C | 250 | 6.2 | A, B, C | 250 | 43 | F, G, J | 250 | | | |
| 1.3 | A, B, C | 250 | 6.8 | B, C, D | 250 | 47 | F, G, J | 250 | | | |
| 1.4 | A, B, C | 250 | 7.5 | B, C, D | 250 | 51 | F, G, J | 250 | | | |
| 1.5 | A, B, C | 250 | 8.2 | B, C, D | 250 | 56 | F, G, J | 250 | | | |
| 1.6 | A, B, C | 250 | 9.1 | B, C, D | 250 | 62 | F, G, J | 250 | | | |
| 1.7 | A, B, C | 250 | 10 | F, G, J | 250 | 68 | F, G, J | 250 | | | |
| 1.8 | A, B, C | 250 | 11 | F, G, J | 250 | 75 | F, G, J | 250 | | | |
| 1.9 | A, B, C | 250 | 12 | F, G, J | 250 | 82 | F, G, J | 250 | | | |
| 2.0 | A, B, C | 250 | 13 | F, G, J | 250 | 91 | F, G, J | 250 | | | |

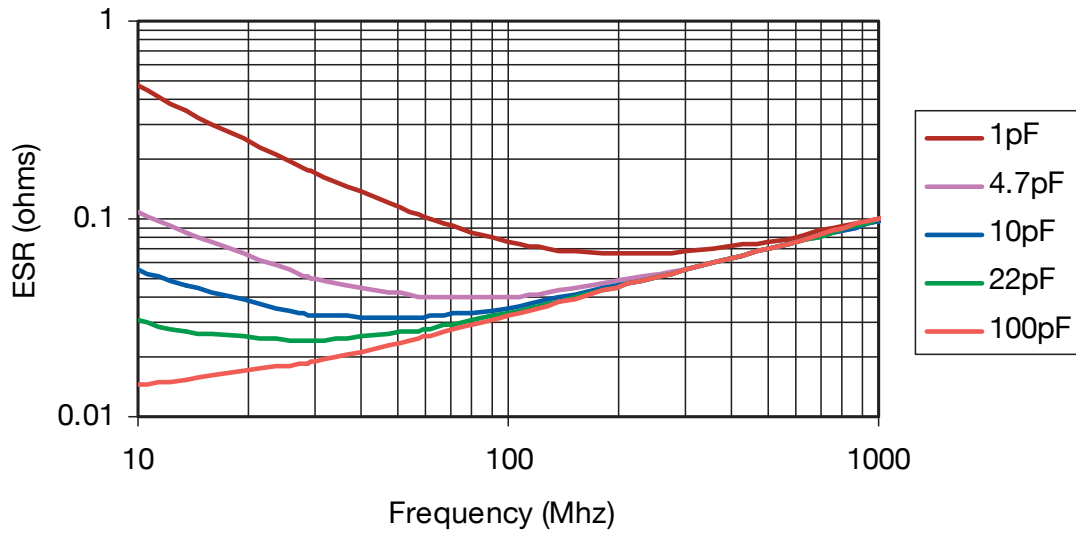
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

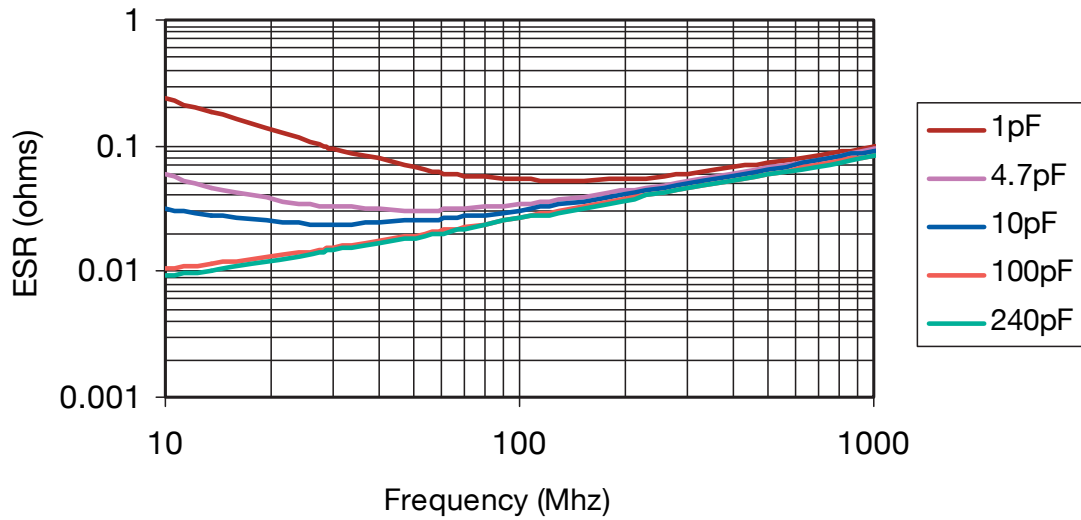
SQCS (0603) SQCF (0805) Ultra Low ESR MLC



Typical ESR SQCS



Typical ESR SQCF



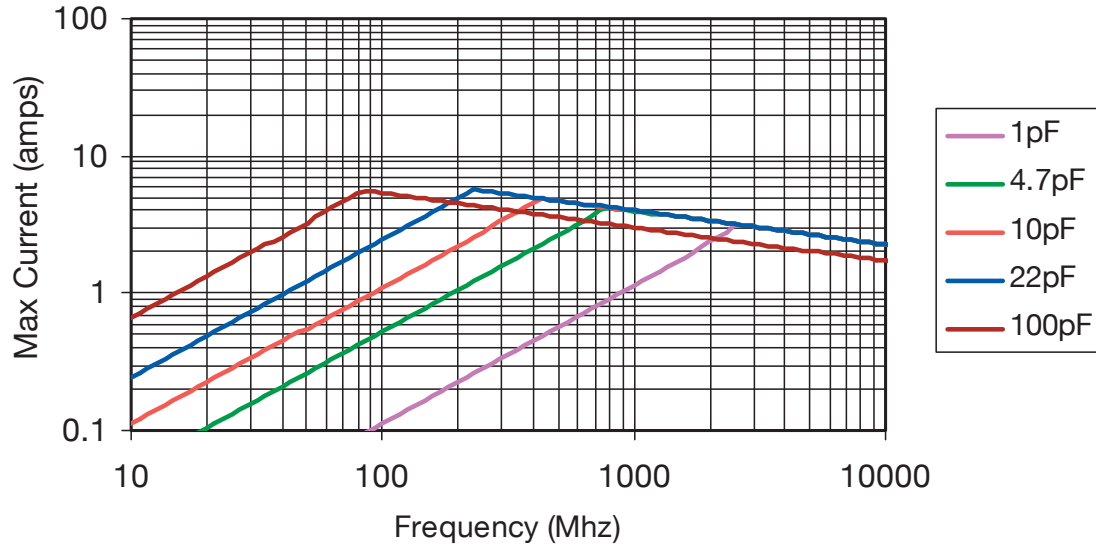
RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

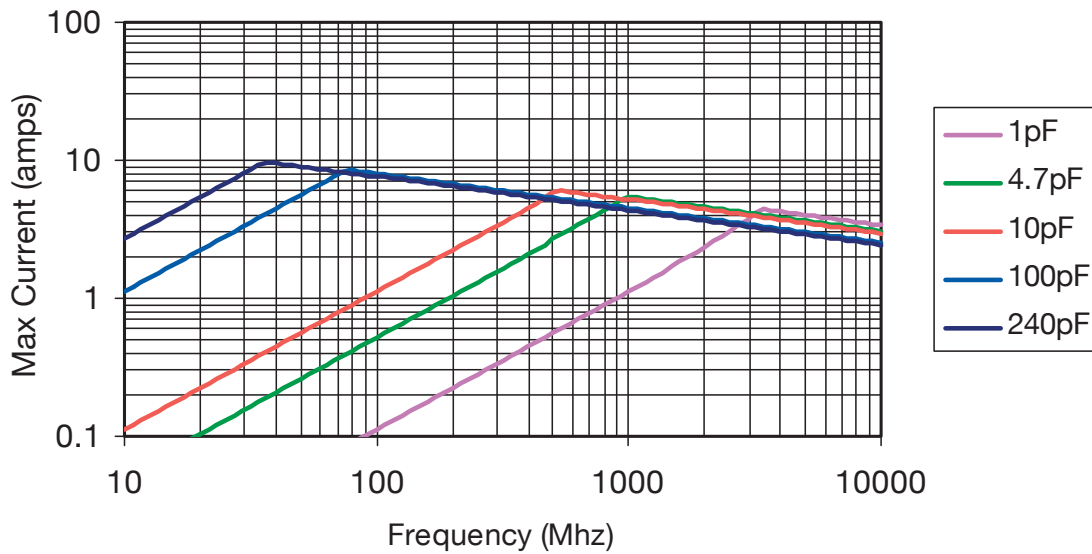
SQCS (0603) SQCF (0805) Ultra Low ESR MLC

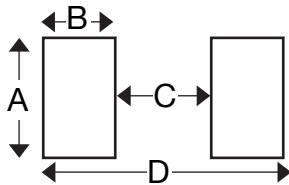
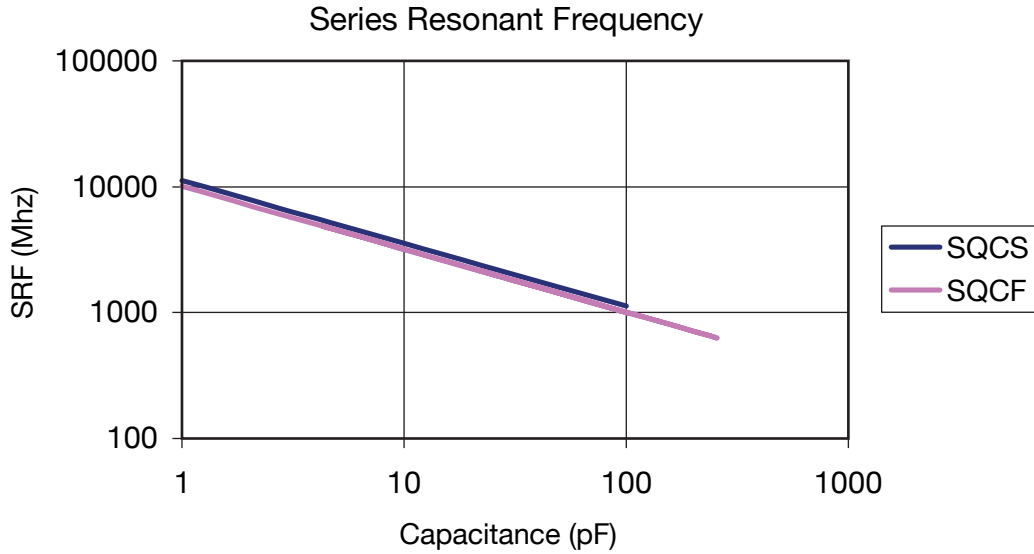


Max Current SQCS



Max Current SQCF





MOUNTING PAD DIMENSIONS: inches (millimeters)

| Case | A min | B min | C min | D min |
|------|---------------|---------------|---------------|---------------|
| SQCA | 0.082 (2.083) | 0.051 (1.295) | 0.032 (0.813) | 0.130 (3.302) |
| SQCB | 0.131 (3.327) | 0.051 (1.295) | 0.074 (1.880) | 0.177 (4.496) |
| SQCS | 0.038 (0.965) | 0.043 (1.092) | 0.025 (0.635) | 0.112 (2.845) |
| SQCF | 0.059 (1.499) | 0.051 (1.295) | 0.024 (0.610) | 0.125 (3.175) |

SQCS & SQCF ENGINEERING KITS

| PN | Series | Diel | Term | Range | Different Values | # per value |
|--------------|--------|------|---------------|-------------|------------------|-------------|
| Kit SQ1800LF | SQCF | C0G | 100% Tin RoHS | .1 to 10pF | 27 | 15 |
| Kit SQ1900LF | SQCF | C0G | 100% Tin RoHS | 10 to 240pF | 22 | 15 |
| Kit SQ1500LF | SQCS | C0G | 100%Tin RoHS | .1 to 10pF | 27 | 15 |
| Kit SQ1600LF | SQCS | C0G | 100%Tin RoHS | 10 to 100pF | 16 | 15 |

| Tolerance per PF: | |
|-------------------|------------------|
| B from .1 to 3.3 | J from 10 to 240 |
| C from 3.9 to 8.2 | |

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[CGA2B2C0G1H070D](#) [CGA2B2C0G1H151J](#) [CGA2B2C0G1H1R5C](#) [CGA2B2C0G1H2R2C](#) [CGA2B2C0G1H3R3C](#) [CGA2B2C0G1H680J](#)
[CGA2B2C0G1H6R8D](#) [CGA2B2X8R1H221K](#) [CGA2B2X8R1H472K](#) [CGA3E1X7R1C474K](#) [CGA3E2C0G1H561JT0Y0N](#)
[CGA4J2X7R2A104K](#)