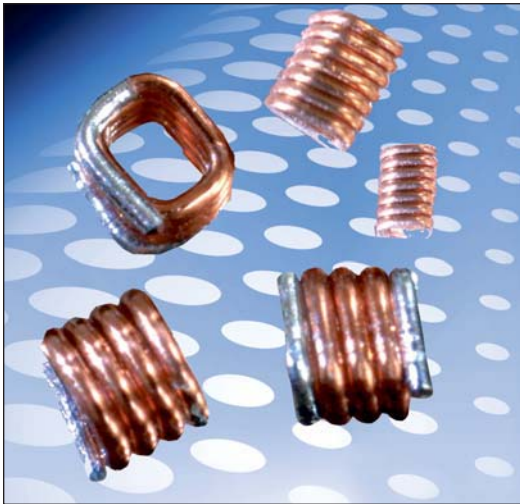


Square Air Core RF Inductors



AS Series



GENERAL DESCRIPTION

AVX Square Air Core RF Inductors, part of the wound air core inductor family, are ideal for RF circuits, broadband I/O filtering, frequency selection, or impedance matching. The unique square cross section of the air core inductor provides better performance, and offers manufacturing advantages over toroidal coils.

FEATURES

- Square cross section construction
- Available in 0806, 0807, and 0908 sizes
- 20 Inductance values ranging from 5.5nH to 27.3nH
- High Q
- High Current
- Excellent SRF

APPLICATIONS

- RF Applications
- RF Circuits
- Broadband I/O Filtering
- Impedance Matching

HOW TO ORDER

| | | | | | |
|--|-------------------------------------|---|-----------------------------|--|---|
| AS ┆ | 06 ┆ | 05N5 ┆ | J ┆ | T ┆ | R ┆ |
| Air Core Inductor (Square Cross Section) | Size Size | Inductance | Tolerance | Termination | Packaging |
| | 06 = 0806 07 = 0807 08 = 0908 | 05N5 = 5.5nH 06N0 = 6.0nH 12N3 = 12.3nH | G = 2% J = 5% K = 10% | T = Sn/Ag over Cu (96.5% Sn, 3% Ag, 0.5% Cu) | R = 7 inch reel (2000 pieces per reel) |



ELECTRICAL SPECIFICATIONS

| | |
|-----------------------|---|
| Technical Data | All technical data related to an ambient temperature of +25°C |
| Inductance Range | 5.5nH to 27.3nH |
| Inductance Tolerance | 2%, 5%, 10% |
| Rated Current | 2.7A, 2.9A, 4.4A |
| Operating Temperature | -40°C to +125°C |
| Termination | 96.5% Tin/3% Silver over 0.5% Copper |

ELECTRICAL SPECIFICATIONS

| AVX P/N | Turns | Inductance (nH) | Tolerance (%) | Q min. | Test Freq. (MHz) | DCR max (mΩ) | SRF (GHz) | I _r max (A) |
|-------------|-------|-----------------|---------------|--------|------------------|--------------|-----------|------------------------|
| AS0605N5*TR | 3 | 5.5 | G, J, K | 60 | 400 | 3.4 | 4.9 | 2.9 |
| AS0606N0*TR | 3 | 6 | G, J, K | 64 | 400 | 6 | 5.2 | 2.9 |
| AS0608N9*TR | 4 | 8.9 | G, J, K | 90 | 400 | 7 | 4.3 | 2.9 |
| AS0612N3*TR | 5 | 12.3 | G, J, K | 90 | 400 | 8 | 4.8 | 2.9 |
| AS0615N7*TR | 6 | 15.7 | G, J, K | 90 | 400 | 9 | 4.4 | 2.9 |
| AS0619N4*TR | 7 | 19.4 | G, J, K | 90 | 400 | 10 | 4 | 2.9 |
| AS0706N9*TR | 3 | 6.9 | G, J, K | 100 | 400 | 6 | 4.6 | 2.7 |
| AS0710N2*TR | 4 | 10.2 | G, J, K | 100 | 400 | 7 | 4 | 2.7 |
| AS0711N2*TR | 4 | 11.2 | G, J, K | 90 | 400 | 6.3 | 3.6 | 2.7 |
| AS0713N7*TR | 5 | 13.7 | G, J, K | 100 | 400 | 8 | 4.3 | 2.7 |
| AS0717N0*TR | 6 | 17 | G, J, K | 100 | 400 | 9 | 4 | 2.7 |
| AS0722N0*TR | 7 | 22 | G, J, K | 100 | 400 | 10 | 3.5 | 2.7 |
| AS0808N1*TR | 3 | 8.1 | G, J, K | 130 | 400 | 6 | 5.2 | 4.4 |
| AS0812N1*TR | 4 | 12.1 | G, J, K | 130 | 400 | 7 | 4.3 | 4.4 |
| AS0814N7*TR | 4 | 14.7 | G, J, K | 90 | 400 | 7.2 | 3 | 4.4 |
| AS0816N6*TR | 5 | 16.6 | G, J, K | 130 | 400 | 8 | 3.4 | 4.4 |
| AS0821N5*TR | 6 | 21.5 | G, J, K | 130 | 400 | 9 | 3.7 | 4.4 |
| AS0823N0*TR | 6 | 23 | G, J, K | 130 | 400 | 10 | 2.6 | 4.4 |
| AS0825N0*TR | 7 | 25 | G, J, K | 130 | 400 | 10 | 2.5 | 4.4 |
| AS0827N3*TR | 7 | 27.3 | G, J, K | 130 | 400 | 10 | 3.2 | 4.4 |

Note: 1. *Tolerance: G=±2%, J=±5%, K=±10%
 2. Inductance & Q measured on the HP4291B. With HP16193A test fixture.
 3. SRF measured using the HP8753E
 4. Operating Temperature range: -40°C to +125°C
 5. Electrical Specifications at 25°C
 6. MSL: Level 1

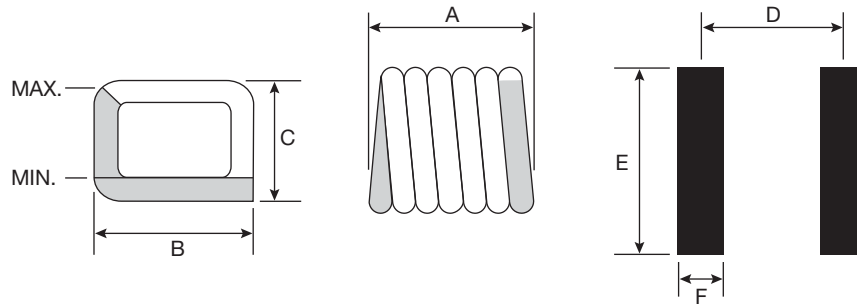


Square Air Core RF Inductors



AS Series

PHYSICAL DIMENSIONS



mm (inches)

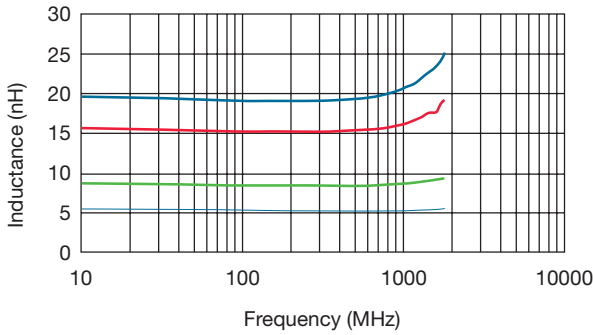
| Part Number | A | B | C | D | E | F |
|-------------|------------------------------|------------------------------|------------------------------|------------------|-----------------|-----------------|
| AS0605N5*TR | 1.346±0.102 (0.053±0.004) | 1.829±0.254 (0.072±0.01) | 1.397±0.102 (0.055±0.004) | 0.962 (0.038) | 2.60 (0.102) | 0.51 (0.020) |
| AS0606N0*TR | 1.295±0.102 (0.051±0.004) | 1.829±0.254 (0.072±0.01) | 1.397±0.102 (0.055±0.004) | 0.99 (0.390) | 2.60 (0.102) | 0.51 (0.020) |
| AS0608N9*TR | 1.626±0.152 (0.640±0.006) | 1.829±0.254 (0.072±0.01) | 1.397±0.102 (0.055±0.004) | 1.27 (0.050) | 2.60 (0.102) | 0.51 (0.020) |
| AS0612N3*TR | 1.930±0.152 (0.076±0.006) | 1.829±0.254 (0.072±0.01) | 1.397±0.102 (0.055±0.004) | 1.63 (0.064) | 2.60 (0.102) | 0.51 (0.020) |
| AS0615N7*TR | 2.286±0.152 (0.09±0.006) | 1.829±0.254 (0.072±0.01) | 1.397±0.102 (0.055±0.004) | 1.96 (0.070) | 2.60 (0.102) | 0.51 (0.020) |
| AS0619N4*TR | 2.591±0.152 (0.102±0.006) | 1.829±0.254 (0.072±0.01) | 1.397±0.102 (0.055±0.004) | 2.29 (0.090) | 2.60 (0.102) | 0.51 (0.020) |
| AS0706N9*TR | 1.295±0.102 (0.051±0.004) | 1.829±0.254 (0.072±0.01) | 1.524±0.254 (0.060±0.010) | 1.02 (0.040) | 2.60 (0.102) | 0.51 (0.020) |
| AS0710N2*TR | 1.626±0.152 (0.064±0.006) | 1.829±0.254 (0.072±0.01) | 1.524±0.254 (0.060±0.010) | 1.32 (0.052) | 2.60 (0.102) | 0.51 (0.020) |
| AS0711N2*TR | 1.549±0.152 (0.061±0.006) | 1.829±0.254 (0.072±0.01) | 1.524±0.254 (0.060±0.010) | 1.24 (0.049) | 2.60 (0.102) | 0.51 (0.020) |
| AS0713N7*TR | 1.930±0.152 (0.076±0.006) | 1.829±0.254 (0.072±0.01) | 1.524±0.254 (0.060±0.010) | 1.57 (0.062) | 2.60 (0.102) | 0.51 (0.020) |
| AS0717N0*TR | 2.286±0.152 (0.09±0.006) | 1.829±0.254 (0.072±0.01) | 1.524±0.254 (0.060±0.010) | 1.93 (0.076) | 2.60 (0.102) | 0.51 (0.020) |
| AS0722N0*TR | 2.591±0.152 (0.102±0.006) | 1.829±0.254 (0.072±0.01) | 1.524±0.254 (0.060±0.010) | 2.29 (0.090) | 2.60 (0.102) | 0.51 (0.020) |
| AS0808N1*TR | 1.473±0.152 (0.058±0.006) | 2.134±0.152 (0.084±0.006) | 1.829±0.152 (0.072±0.006) | 1.12 (0.044) | 2.80 (0.110) | 0.64 (0.025) |
| AS0812N0*TR | 1.854±0.152 (0.073±0.006) | 2.134±0.152 (0.084±0.006) | 1.829±0.152 (0.072±0.006) | 1.45 (0.570) | 2.80 (0.110) | 0.64 (0.025) |
| AS0814N7*TR | 1.549±0.152 (0.061±0.006) | 2.134±0.152 (0.084±0.006) | 1.829±0.152 (0.072±0.006) | 1.24 (0.049) | 2.80 (0.110) | 0.64 (0.025) |
| AS0816N6*TR | 2.210±0.152 (0.087±0.006) | 2.134±0.152 (0.084±0.006) | 1.829±0.152 (0.072±0.006) | 1.83 (0.072) | 2.80 (0.110) | 0.64 (0.025) |
| AS0821N5*TR | 2.565±0.152 (0.101±0.006) | 2.134±0.152 (0.084±0.006) | 1.829±0.152 (0.072±0.006) | 2.18 (0.086) | 2.80 (0.110) | 0.64 (0.025) |
| AS0823N0*TR | 2.235±0.152 (0.088±0.006) | 2.134±0.152 (0.084±0.006) | 1.829±0.152 (0.072±0.006) | 1.90 (0.075) | 2.80 (0.110) | 0.64 (0.025) |
| AS0825N0*TR | 2.972±0.152 (0.117±0.006) | 2.134±0.152 (0.084±0.006) | 1.829±0.152 (0.072±0.006) | 2.57 (0.101) | 2.80 (0.110) | 0.64 (0.025) |
| AS0827N3*TR | 2.972±0.152 (0.117±0.006) | 2.134±0.152 (0.084±0.006) | 1.829±0.152 (0.072±0.006) | 2.57 (0.101) | 2.80 (0.110) | 0.64 (0.025) |

7

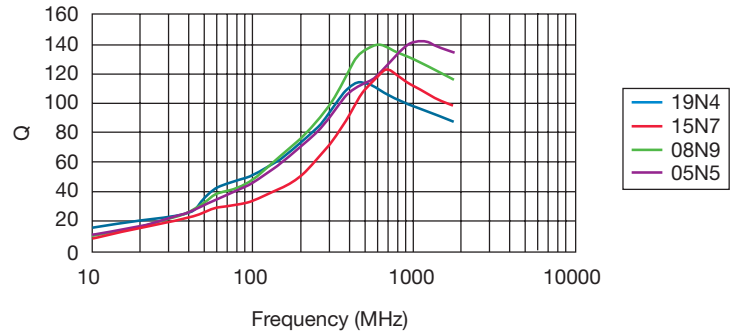
PERFORMANCE SPECIFICATIONS

AS06

Inductance vs. Frequency

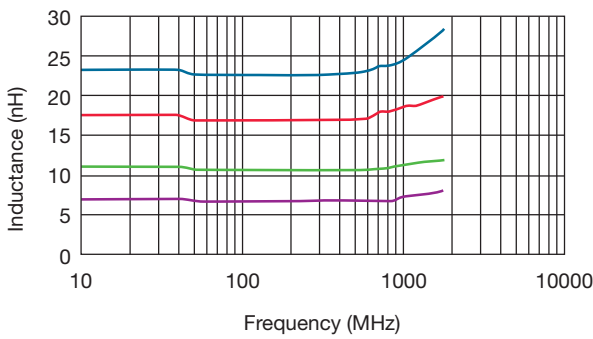


Typical Q vs. Frequency

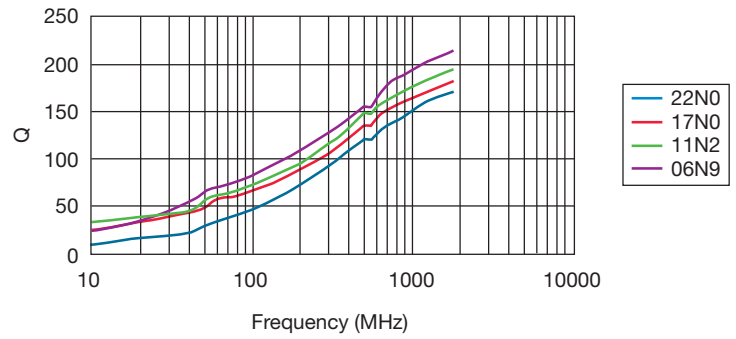


AS07

Inductance vs. Frequency

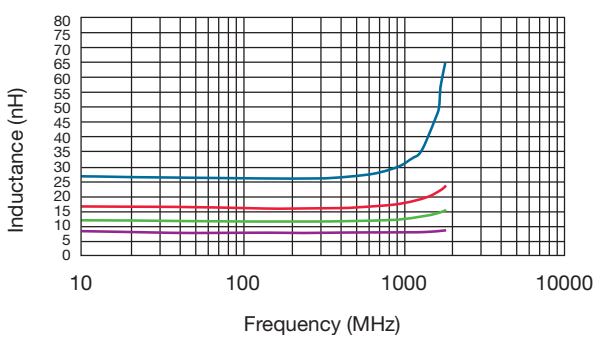


Typical Q vs. Frequency

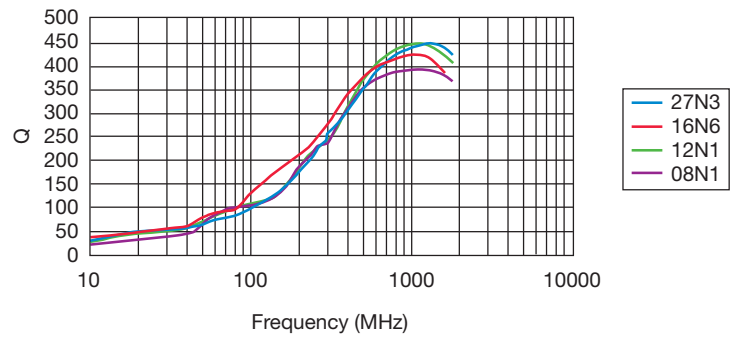


AS08

Inductance vs. Frequency



Typical Q vs. Frequency

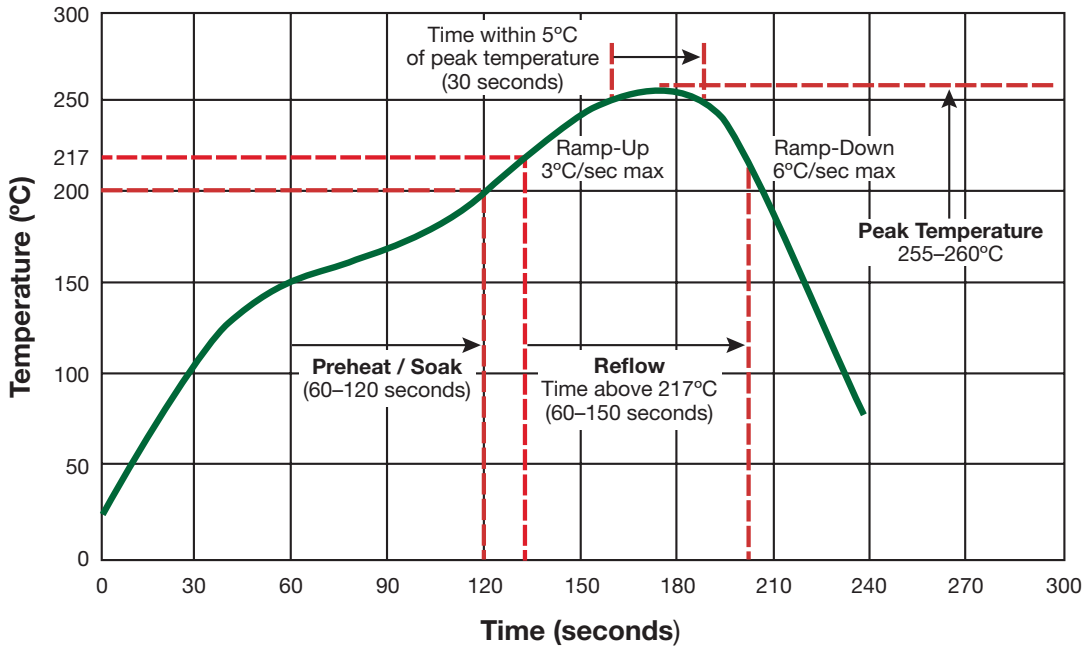


Square Air Core RF Inductors



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TYPICAL RoHS REFLOW PROFILE



7

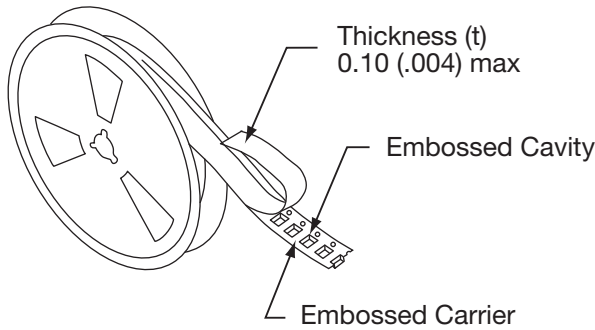


Square Air Core RF Inductors

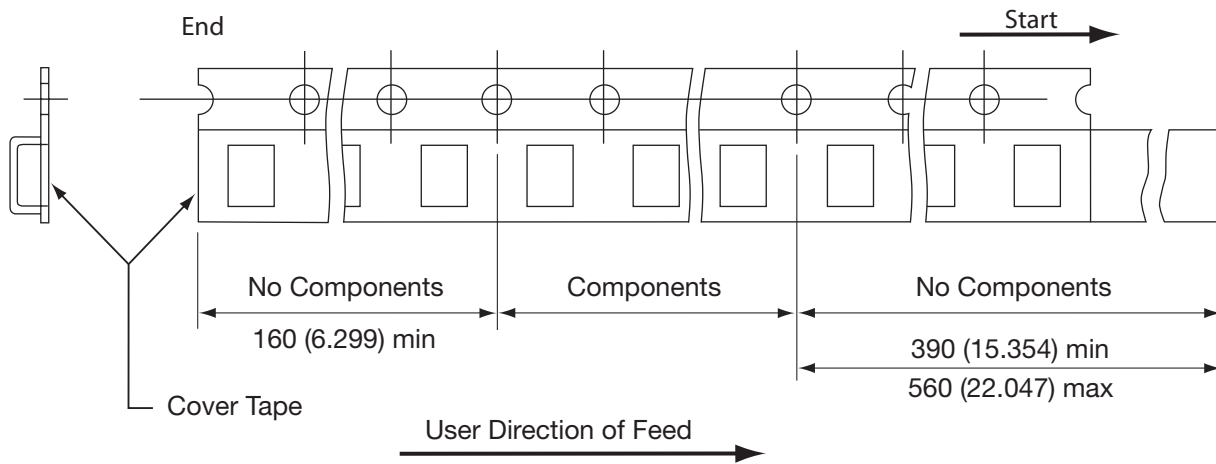
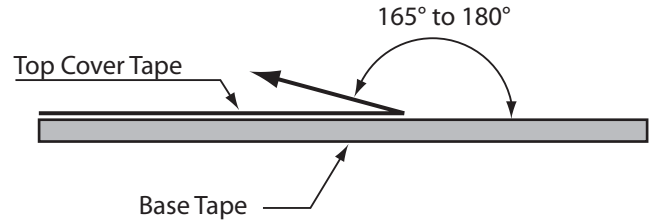


AS Series

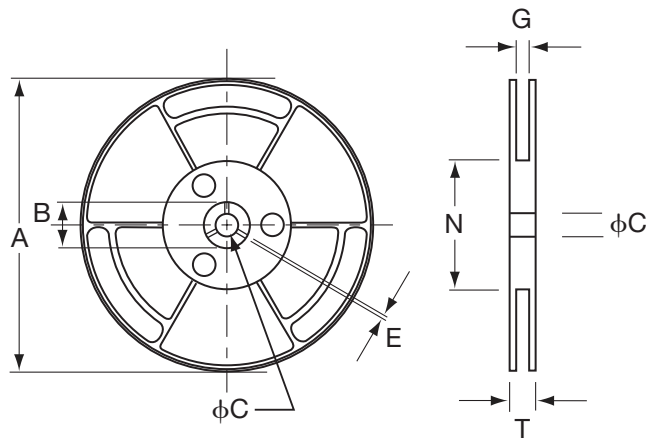
PACKAGING SPECIFICATIONS



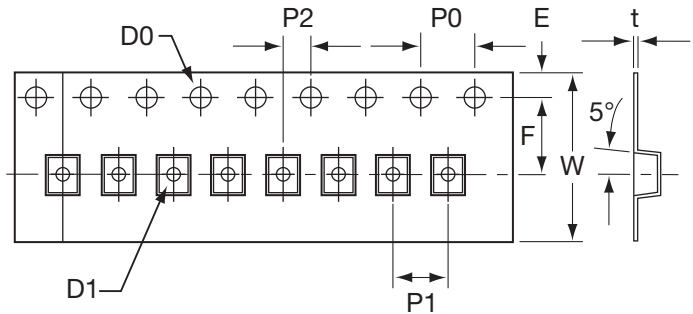
- The force for tearing off cover tape is 10 to 130 grams in the arrow direction



CARRIER TAPE REELS



DIMENSIONS OF CARRIER TAPE



mm (inches)

| ITEM | A | B | C | G | N | T | W | E | F | P1 | P2 | P0 | D0 | D1 | t |
|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| DIM. | 178 (7.008) | 25 (0.984) | 15 (0.591) | 12.5 (0.492) | 75 (2.953) | 16.4 (0.646) | 12.0 (0.472) | 1.75 (0.069) | 5.50 (0.217) | 4.00 (0.157) | 2.0 (0.079) | 4.0 (0.157) | 1.5 (0.059) | 1.0 (0.039) | 0.23 (0.009) |
| TOL. | ±2.0 (0.079) | ±1.0 (0.039) | ±0.5 (0.020) | ±1.5 (0.059) | ±2.0 (0.079) | ±1.5 (0.059) | ±0.2 (0.008) | ±0.1 (0.004) | ±0.1 (0.004) | ±0.1 (0.004) | ±0.1 (0.004) | ±0.1 (0.004) | ±0.1 (0.004) | ±0.1 (0.004) | ±0.05 (0.020) |