

Features:

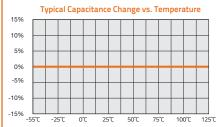
- RoHS Compliant and Halogen Free
- Capacitance range: 0.1pF to 220uF
- Voltage range: 4V to 100V
- Terminations: 100% matte Tin (Sn), Palladium (Pd-Ag), Gold (Au) and Lead (Pb)
- Very low ESR in X7R/X5R (<10mΩ typical)
- Ceramic monolithic structure provides excellent reliability
- High-speed automated placement capabilities

Part Number Structure

| | 0805 | COG | | 00 | | _ 10 |)1 | | J | | | | N | | | | | Р | | | |
|-----|---------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------|------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------|--------------------|---------------------------------|---------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------|
| ies | Size | Temperature | | ated Volt | age | Ca | pacitan | ce | То | leran | ce | | T | ermina | tion | | | Pa | ckagir | ng | Optional |
| xar | 01005 0201 0402 0504 0603 0805 1206 1210 1812 2220 2221 | Characteristi (Dielectric) COG X7R X5R Y5V Z5U | 1 a fc n 4 6 1 2 5 6 1 1 | st two dipre significations of the signification of the significant of the signifi | zeroes /DCW /DCW DCW DCW DCW DCW DCW DCW | 1s ard foll nu ze 10 R de 6R | t two destroyed to the | igits cant, by f .g: pF | * * | B = ± C = ± D = ± F = ± G = ± J = ± J = ± E M = ± N = ± Z = +8 For va | 0.25 0.5p 1% 2% 5% 10% 20% 30% 30 - | pF DF 3 20% 5 belov | * | N = 10 Tin (Si P = Pa G = Go Pb = 9 Lead (Pd/Ag termii limite availa | n) ove alladic old ove 90% Ti Pb) g & Go nation d valu | er Nick um Silv er Nic n (Sn). old ns hav | ver kel /10% | Tap E = Tap P = Tap R = Tap U = | Emb De (7" Pape De (7" Pape De (13 | " Reel; ossed Reel) er Reel) | Leave blank for standard thickness. Designate "-" for Min. "*" for Max. followed by Thickness Code |
| | | | | | | On | tional T | hickr | ness | ldent | ifier | Codes | : | | | | | | | | thickness |
| С | ODE: | C D | Е | F G | Н | 1 | J | K | L | М | N | 0 | Р | Q | R | S | Т | U | V | 6 | of .026") |
| | ENSION: | .015 .020 | .026 | .030 .039 | .040 | .045 | .050 .0 | 055 . | 060 | .065 | .07 | 0 .075 | .080 | .085 | .090 | .095 | .100 | .105 | .110 | .023 | |

Electrical Specifications





Operating Temperature Range:

-55°C to +125°C

Temperature Coefficient:

0 ±30PPM/°C

Temperature Voltage Coefficient:

0 ±30PPM/°C

Insulation Resistance:

>1000 Ω -F or 100 G Ω , for values $\leq 0.047 uF$

(whichever is less at 25°C, WDCV).

For Capacitance values > 0.047uF, the 500Ω -F rule applies. (The IR at 125°C is 10% of the

value at 25°C)

Ageing:

None

Withstanding Voltage:

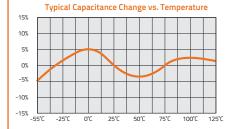
>2.5 times VDCW

Capacitance Tolerance:

B,C,D,F,G,J,K Dissipation Factor:

0.1% max

Electrical Specifications



Operating Temperature Range: -55°C to +125°C

Temperature Coefficient:

0 ±15%Δ°C MAX.

Temperature Voltage Coefficient:

X7R not applicable Insulation Resistance:

>100 Ω -F or 10 G Ω , whichever is less at 25°C, VDCW. (The IR at 125°C is 10% of the value at 25°C)

Ageing:

2.5% per decade hour, typical

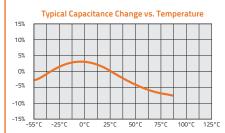
Withstanding Voltage:

>2.5 times VDCW

Capacitance Tolerance:

| Rated Voltage | D.F. | | Exception of D.F. |
|------------------|--------|------|----------------------------------------------------------------------|
| ≥50V | ≤2.5% | ≤3% | 0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF |
| | | ≤5% | 0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF |
| | | ≤5% | 0201≥0.01uF; 0805≥1uF; 1210≥4.7uF |
| 25V | ≤2.5% | ≤10% | 0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF |
| 16V | <3.5% | ≤5% | 0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF |
| 160 | \$3.5% | ≤10% | 0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF |
| 10V | ≤5% | ≤10% | 0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF |
| 6.3V | ≤10% | 02 | .01≥0.1uF; 0402≥1uF; 0603≥10uF; 0805≥4.7uF; 1206≥47uF; 1210≥100uF |

X₅R



Operating Temperature Range:

-55°C to +85°C

Temperature Coefficient:

0 ±15%Δ°C MAX.

Temperature Voltage Coefficient:

X5R not applicable

Insulation Resistance:

>100 $\Omega\text{-F}$ or 10 GΩ, whichever is less at 25°C, VDCW. (The IR at 125°C is 10% of the value at 25°C)

2.5% per decade hour, typical

Withstanding Voltage:

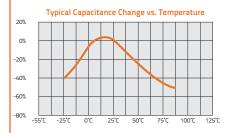
>2.5 times VDCW

Capacitance Tolerance:

K.M

| Rated Voltage | D.F. | | Exception of D.F. |
|------------------|-------|------|----------------------------------------------------------------------|
| ≥50V | ≤2.5% | ≤3% | 0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF |
| | | ≤5% | 0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF |
| | | ≤5% | 0201≥0.01uF; 0805≥1uF; 1210≥4.7uF |
| 25V | ≤2.5% | ≤10% | 0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF |
| 45)/ | -2.5% | ≤5% | 0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF |
| 16V | ≤3.5% | ≤10% | 0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF |
| 10V | ≤5% | ≤10% | 0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF |
| 6.3V | ≤10% | 02 | .01≥0.1uF; 0402≥1uF; 0603≥10uF; 0805≥4.7uF; 1206≥47uF; 1210≥100uF |

Z5U



Operating Temperature Range:

+10°C to +85°C

Temperature Coefficient:

+22% - 56%Δ°C MAX.

Insulation Resistance:

>100 Ω -F or 10 G Ω , whichever is less at 25°C, WDCV. (The IR at 125°C is 10% of the value at 25°C)

Ageing:

5% per decade hour, typical

Withstanding Voltage:

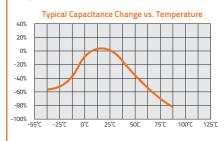
>2.5 times VDCW

Capacitance Tolerance:

| Rated Voltage | D.F. | | Exception of D.F. |
|------------------|--------|--------|----------------------------------------------------------------|
| ≥50V | ≤5% | ≤9% | 0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF; |
| 25V | ≤5% | ≤9% | 0402≥0.047uF; 0603≥0.1uF; 0805≥0.33uF; 1206≥1uF; 1210≥4.7uF |
| 16V | ≤9% | ≤12.5% | 0603≥2.2uF; 0805≥3.3uF; 1206≥10uF; 1210≥22uF; 1812≥47uF |
| 10V | ≤12.5% | ≤16% | 0603≥2.2uF; 0805≥3.3uF; 1206≥4.7uF; 1210≥10uF; 1812≥47uF |
| 6.3V | ≤16% | | |

Electrical Specifications

Y5V



Operating Temperature Range:

-30°C to +85°C

Temperature Coefficient: +22% - 82%Δ°C MAX.

Insulation Resistance:

>100 Ω -F or 10 G Ω , whichever is less at 25°C, WDCV. (The IR at 125°C is 10% of the value at 25°C)

Ageing:

7% per decade hour, typical Withstanding Voltage: >2.5 times VDCW

Capacitance Tolerance: M.Z

| Rated Voltage | D.F. | | Exception of D.F. |
|------------------|--------|--------|----------------------------------------------------------------|
| ≥50V | ≤5% | ≤9% | 0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF; |
| 25V | ≤5% | ≤9% | 0402≥0.047uF; 0603≥0.1uF; 0805≥0.33uF; 1206≥1uF; 1210≥4.7uF |
| 16V | ≤9% | ≤12.5% | 0603≥2.2uF; 0805≥3.3uF; 1206≥10uF; 1210≥22uF; 1812≥47uF |
| 10V | ≤12.5% | ≤16% | 0603≥2.2uF; 0805≥3.3uF; 1206≥4.7uF; 1210≥10uF; 1812≥47uF |
| 6.3V | ≤16% | | |

Test Parameters

Test parameters for Multilayer Ceramic Capacitors - X7R, X5R and Y5V:

1KHz ± 100Hz at 1.0 ± 0.2 Vrms < 10uF (10 V min.) 1KHz ± 100Hz at 0.5 ± 0.1 Vrms < 10uF (6.3V max.)

120Hz ± 24Hz at 1.0 ± 0.1 Vrms ≥ 10uF

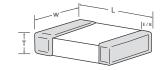
1MHz ± 100KHz at 1.0 ± 0.2 Vrms ≤ 1000pF, 25°C 1KHz ± 100Hz at 1.0 ± 0.2 Vrms > 1000pF, 25°C

Test parameters for Multilayer Ceramic Capacitors - NPO/COG:

Note: To ensure proper capacitance readings, the voltage level must be held constant. The HP4284 and Agilent E4980 has a "ALC" (Automatic Level Control) function and should be switched to the "ON" position for accurate capacitance readings.

Voltage and Capacitance Range

COG (NPO) Dielectric



Values that are typically available.

(All measurements in inches)

| | | | | | | | | Γ | | | | | | | | | | | | | | surements | |
|-------------|------|-------------|-------|--------|----------------------|--------------------|-----|-----|-----------------------|------|------|-------|-----|------|-----|-----------------------|------|-------------|--------|------|-------------------|-----------|---------------------|
| | S | Size | | (± 0.0 | 0 05 0008) | 02 (± 0. | | | 0402 (± 0.004) | | (± 0 | .008) | | 006) | | 0805 (± 0.008) | | 12 (± 0. | | | 10 008) | | 8 12 012) |
| | | L | | .0 | 16 | .0: | 24 | | .040 | | .0 | 53 | .0 | 63 | | .080 | | .1 | 26 | .1 | 26 | .1 | 77 |
| | | W | | .0 | 08 | .0 | 12 | | .020 | | .0 | 40 | .0 | 32 | | .050 | | .0 | 63 | .0 | 98 | .1 | 26 |
| | T (ı | max) | | .0. | 08 | .0 | 12 | | .025 | | .0 | 40 | .0 | 33 | | .055 | | .0 | 70 | .0 | 75 | .0: | 85 |
| | Mir | n E/E | 3 | .0 | 02 | .0 | 02 | | .004 | | .0 | 05 | .0 | 08 | .0 | 020 ± .01 | 0 | .020 | ± .010 | .020 | ± .010 | .024 | ± .015 |
| | VDCV | V (M | AX) | 6.3V | 16V | 25V | 50V | 25V | 50V | 100V | 50V | 100V | 50V | 100V | 25V | 50V | 100V | 50V | 100V | 50V | 100V | 50V | 100V |
| ^ | OR1 | Ŷ | 0.1pF | | | | | | | | | | | | | | | | | | | | |
| l Ï | 0R2 | | 0.2pF | | | | | | | | | | | | | | | | | | | | |
| | 0R3 | | 0.3pF | | | | | | | | | | | | | | | | | | | | |
| | 0R4 | | 0.4pF | | | | | | | | | | | | | | | | | | | | |
| | 0R5 | | 0.5pF | | | | | | | | | | | | | | | | | | | | |
| | 1R0 | | 1.0pF | | | | | | | | | | | | | | | | | | | | |
| | 1R2 | | 1.2 | | | | | | | | | | | | | | | | | | | | |
| | 1R5 | | 1.5 | | | | | | | | | | | | | | | | | | | | |
| | 1R8 | | 1.8 | | | | | | | | | | | | | | | | | | | | |
| CODE- | 2R2 | VALUE- | 2.2 | | | | | | | | | | | | | | | | | | | | |
| | 2R7 | VA | 2.7 | | | | | | | | | | | | | | | | | | | | |
| CAPACITANCE | 3R3 | CAPACITANCE | 3.3 | | | | | | | | | | | | | | | | | | | | |
| \CIT\ | 3R9 | CITA | 3.9 | | | | | | | | | | | | | | | | | | | | |
| AP/ | 4R7 | APA | 4.7 | | | | | | | | | | | | | | | | | | | | |
| | 5R0 | | 5.0 | | | | | | | | | | | | | | | | | | | | |
| | 5R6 | | 5.6 | | | | | | | | | | | | | | | | | | | | |
| | 6R8 | | 6.8 | | | | | | | | | | | | | | | | | | | | |
| | 8R2 | | 8.2 | | | | | | | | | | | | | | | | | | | | |
| | 100 | | 10pF | | | | | | | | | | | | | | | | | | | | |
| | 120 | | 12 | | | | | | | | | | | | | | | | | | | | |
| | 150 | | 15 | | | | | | | | | | | | | | | | | | | | |
| | 180 | | 18 | | | | | | | | | | | | | | | | | | | | |
| \ \ | 220 | · | 22 | | | | | | | | | | | | | | | | | | | | |

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.



Voltage and Capacitance Range

COG (NPO) Dielectric



| | | | | | | | | | | | | | | | | _ | | | | | | | | | |
|------------------|------------|------------------|--------------|------|---------------------|-----|----------------------|------|-----------------------|-------|----------|-------|--------------------|------|-----|------------------|------|------------|----------------------|-----|---------------------|------------|------------|-----------------|-----------|
| | | | | | | | | | | | | | | | | | | | | | | | (All measu | rements i | n inches) |
| | | Size | | | 005 0008) | | 2 01 .002) | | 0402 (± 0.004) | | | .008) | 06 (± 0. | | | 0805 (± 0.008 | | | . 06 .008) | | 2 10 008) | 18 (±0. | 12 | 2220 / (±0.0 | |
| | | L | | | 016 | | 024 | | .040 | | - | 053 | | 063 | | .080 | | | 126 | | 126 | | 177 | | / .225 |
| | | w | | | 008 | | 012 | | .020 | | | 040 | |)32 | | .050 | | | 063 | | 098 | | 126 | | / .210 |
| | 1 | (max |) | | 008 | | 012 | | .025 | | - | 040 | |)33 | | .055 | | | 070 | | 075 | | 085 | | /.108 |
| | | lin E/I | | | 002 | | 002 | | .004 | | | 005 | | 008 | | 020 ± .0 | 10 | | ± .010 | | ± .010 | | ± .015 | | ± .015 |
| | | | | | | | T | 251/ | | 1001/ | | | | | | | | | | | | | | | |
| | _ | W (M | _ | 6.3V | 16V | 25V | 50V | 25V | 50V | 100V | 50V | 100V | 50V | 100V | 25V | 50V | 100V | 50V | 100V | 50V | 100V | 50V | 100V | 50V | 100V |
| 1 | 270 330 | 1 | 27 33 | | | | | | | | | | | | | | | | | | | | | | |
| | 390 | 11 | 39 | | | | | | | | | | | | | | | | | | | | | | |
| | 470 |] [| 47 | | | | | | | | | | | | | | | | | | | | | | |
| | 560 | - | 56 | | | | | | | | | | | | | | | | | | | | | | |
| | 680 820 | + | 68 82 | | | | | | | | | | | | | | | | | | | | | | |
| | 101 | | 100pF | | | | | | | | | | | | | | | | | | | | | | |
| | 121 |] [| 120 | | | | | | | | | | | | | | | | | | | | | | |
| | 151 |] | 150 | | | | | | | | | | | | | | | | | | | | | | |
| | 181 | - | 180 | | | | | | | | | | | | | | | | | | | | | | |
| | 221 | $\exists \ \ $ | 220 270 | | | | | | | | | | | | | | | | | | | | | | |
| | 331 | 11 | 330 | | | | | | | | | | | | | | | | | | | | | | |
| | 391 | | 390 | | | | | | | | | | | | | | | | | | | | | | |
| | 471 | - | 470 | | | | | | | | | | | | | | | | | | | | | | |
| | 561 681 | - | 560 680 | | | | | | | | | | | | | | | | | | | | | | |
| | 821 | \exists | 820 | | | | | | | | | | | | | | | | | | | | | | |
| | 102 | | 1000pF | | | | | | | | | | | | | | | | | | | | | | |
| | 122 |] [| 1200 | | | | | | | | | | | | | | | | | | | | | | |
| | 152 | + | 1500 | | | | | | | | | | | | | | | | | | | | | | |
| | 182 | \exists | 1800 2200 | | | | | | | | | | | | | | | | | | | | | | |
| | 272 |] [| 2700 | | | | | | | | | | | | | | | | | | | | | | |
| | 332 | _ | 3300 | | | | | | | | | | | | | | | | | | | | | | |
| CAPACITANCE CODE | 392 | VALUE- | 3900 | | | | | | | | | | | | | | | | | | | | | | |
| NE NE | 472 562 | 빌 | 4700 5600 | | | | | | | | | | | | | | | | | | | | | | |
| CITA | 682 | CAPACITANCE | 6800 | | | | | | | | | | | | | | | | | | | | | | |
| APA | 822 | APA | 8200 | | | | | | | | | | | | | | | | | | | | | | |
| | 103 | - | .01uF | | | | | | | | | | | | | | | | | | | | | | |
| H | 123 153 | \exists | .012 | | | | | | | | | | | | | | | | | | | | | | |
| | 183 | 1 | .018 | | | | | | | | | | | | | | | | | | | | | | |
| | 223 |] [| .022 | | | | | | | | | | | | | | | | | | | | | | |
| | 273 | - | .027 | | | | | | | | | | | | | | | | | | | | | | |
| П | 333 393 | - | .033 | | | | | | | | | | | | | | | | | | | | | | |
| | 473 | 1 | .047 | | | | | | | | | | | | | | | | | | | | | | |
| | 563 | | .056 | | | | | | | | | | | | | | | | | | | | | | |
| | 683 | - | .068 | | | | | | | | | | | | | | | | | | | | | | |
| | 823 104 | - | .082 | | | | | | | | | | | | | | | 25V 50V | | | | | | | |
| | 124 | - | .120 | | | | | | | | | | | | | | | 50V | | | | | | | |
| | 154 | | .150 | | | | | | | | | | | | | | | | | | | | | | |
| | 184 | - | .180 | | | | | | | | | | | | | | | | | | | | | | |
| | 224 | - | .220 | | | | | | | | | | | | | | | | | | | | | | |
| | 334 | 1 | .330 | | | | | | | | | | | | | | | | | | | | | | |
| | 394 | | .390 | | | | | | | | | | | | | | | | | | | | | | |
| | 474 | - | .470 | | | | | | | | | | | | | | | | | | | | | | |
| | 564 684 | + | .560 .680 | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 824 | - ↓ | .820 | | | | | | | | | | | | | | | | | | | | | | |



Voltage and Capacitance Range

X7R Dielectric Values that are typically available. (All measurements in inches) 01005 Size (± 0.002) (± 0.004) (± 0.0008) (± 0.008) (± 0.006) (± 0.008) .016 .024 .040 .053 .063 .080 .020 W .008 .012 .040 .032 .050 T (max) .008 .012 .025 .040 .038 .058 .002 .002 .004 .008 Min E/B .005 .020 ± .010 VDCW (MAX) 6.3V 10V 6.3V 25V 25V 50V 100V 50V 25V 50V 100V 10V 16V 100V 10V 16V 50V 100V 101 100pF 121 120 151 150 181 180 220 270 331 330 391 390 471 470 561 560 681 680 821 820 102 1000pF CAPACITANCE CODE 122 1200 1500 182 1800 2200 272 332 3300 392 472 4700 562 5600 682 6800 822 8200 103 .01uF 123 .012 153 .015 183 .018 223 .022 273 .027



Voltage and Capacitance Range

X7R Dielectric



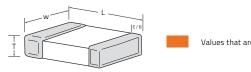
| Size | l | | | | | | | | | | | | | | | | | | | | | (All meas | surements i | in inches) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|------|---------|----|------|-----|------|-----|------|-----|-----|------|-----|-----|-----|-----|------|------|-----|--------|-----------|-------------|------------|
| Time | | Siz | ze | | | | | | | | | | | | | | | | | | | | | |
| Time Time | | L | | | | .024 | | | | .040 | | | | | .0 | 63 | | | | | .08 | 30 | | |
| Value Valu | | V | I | | | .012 | | | | .020 | | | | | .0 | 32 | | | | | .0 | 50 | | |
| VDCW MAX | | T (m | ax)* | | | .012 | | | | .025 | | | | | .0 | 38 | | | | | .0 | 58 | | |
| 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 | | Min | E/B | | | .002 | | | | .004 | | | | | .0 | 08 | | | | | .020 : | ± .010. ± | | |
| 473 0.047 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 | | VDCW | (MAX | () | 4V | 6.3V | 10V | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V | 100V | 6.3V | 10V | 16V | 25V | 50V | 100V |
| Sea Control | î | 393 | Ŷ | .039 | | | | | | | | | | | | | | | | | | | | |
| Control Cont | | 473 | | .047 | | | | | | | | | | | | | | | | | | | | |
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| 104 124 154 154 159 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 150 | | 683 | | .068 | | | | | | | | | | | | | | | | | | | | |
| 124 | | 823 | | .082 | | | | | | | | | | | | | | | | | | | | |
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| 224 274 274 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 270 | | 154 | | .150 | | | | | | | | | | | | | | | | | | | | |
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| No. | | 274 | | .270 | | | | | | | | | | | | | | | | | | | | |
| 105 | 🛓 | 334 | | .330 | | | | | | | | | | | | | | | | | | | | |
| 105 | Ö | 394 | ALU | .390 | | | | | | | | | | | | | | | | | | | | |
| 105 | l l | 474 | | .470 | | | | | | | | | | | | | | | | | | | | |
| 105 | | 564 | TAN | .560 | | | | | | | | | | | | | | | | | | | | |
| 105 | APA | 684 | PACI | .680 | | | | | | | | | | | | | | | | | | | | |
| 1.20 | ΙĮΫ | 824 | Ā | .820 | | | | | | | | | | | | | | | | | | | | |
| 155 1.50 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.80 1.8 | | 105 | | 1.00uF | | | | | | | | | | | | | | | | | | | | |
| 185 2.20 2.20 3.30 3.30 3.4.70 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.80 3.5.8 | | 125 | | 1.20 | | | | | | | | | | | | | | | | | | | | |
| 225 335 3.30 3 3 3 3 3 3 3 3 3 | | 155 | | 1.50 | | | | | | | | | | | | | | | | | | | | |
| 335 4.70 4.70 6.80 6.80 6.80 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6 | | 185 | | 1.80 | | | | | | | | | | | | | | | | | | | | |
| 4.70 | | 225 | | 2.20 | | | | | | | | | | | | | | | | | | | | |
| 685 6.80 10.0uF 15.0uF | | 335 | | 3.30 | | | | | | | | | | | | | | | | | | | | |
| 106 10.0uF 15.0uF 15.0uF | | 475 | | 4.70 | | | | | | | | | | | | | | | | | | | | |
| 156 226 22.0uF 22.0uF 2476 47.0uF 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | | 685 | | 6.80 | | | | | | | | | | | | | | | | | | | | |
| 226 476 47.0uF 22.0uF 2 | | 106 | | 10.0uF | | | | | | | | | | | | | | | | | | | | |
| 476 47.0uF 47.0uF | | 156 | | 15.0uF | | | | | | | | | | | | | | | | | | | | |
| | | 226 | | 22.0uF | | | | | | | | | | | | | | | | | | | | |
| v 107 v 100 0 u E | | 476 | | 47.0uF | | | | | | | | | | | | | | | | | | | | |
| | ļ | 107 | ; | 100.0uF | | | | | | | | | | | | | | | | | | | | |

^{*} For values above 1uF, thickness may be greater than specified above.

T(max): 0603 – 0.040" 0805 – 0.060"

Voltage and Capacitance Range

X7R Dielectric



| (All r | measurem | ents i | n inches) | | | | | | | | | | | | | | | - | _ | | | | |
|--------------------|------------|--------------------|-----------|-----|-----|-------------------|-----|------|-----|-----|----------------------|-----|------|------|-----|------|---------------------|-----|------|-----|------|-------------------------|------|
| | S | ize | | | | 1206 (± 0.008) | | | | | 1210 (±0.008) | | | | | | 8 12 012) | | | | | / 222 1 .016) | |
| | | L | | | | .126 | | | | | .126 | | | | | .1 | 77 | | | | .225 | .225 | |
| | | W | | | | .063 | | | | | .098 | | | | | .1 | 26 | | | | .200 | .210 | |
| | T (n | nax)* | • | | | .070 | | | | | .125 | | | | | .0 | 85 | | | | .108 | /.108 | |
| | Mir | n E/E | 3 | | .0 | 020 ± .01 | 0 | | | | 020 ± .01 | 0 | | | | .024 | ± .015 | | | | .025 | ± .015 | |
| | VDCV | V (MA | AX) | 10V | 16V | 25V | 50V | 100V | 10V | 16V | 25V | 50V | 100V | 6.3V | 10V | 16V | 25V | 50V | 100V | 16V | 25V | 50V | 100V |
| ^ | 102 | î | 1000pF | | | | | | | | | | | | | | | | | | | | |
| | 122 | | 1200 | | | | | | | | | | | | | | | | | | | | |
| П | 152 | | 1500 | | | | | | | | | | | | | | | | | | | | |
| | 182 | | 1800 | | | | | | | | | | | | | | | | | | | | |
| | 222 | | 2200 | | | | | | | | | | | | | | | | | | | | |
| | 272 | | 2700 | | | | | | | | | | | | | | | | | | | | |
| Ш | 332 | | 3300 | | | | | | | | | | | | | | | | | | | | |
| | 392 | | 3900 | | | | | | | | | | | | | | | | | | | | |
| | 472 | | 4700 | | | | | | | | | | | | | | | | | | | | |
| | 562 | | 5600 | | | | | | | | | | | | | | | | | | | | |
| | 682 | | 6800 | | | | | | | | | | | | | | | | | | | | |
| | 822 | | 8200 | | | | | | | | | | | | | | | | | | | | |
| | 103 | | .01uF | | | | | | | | | | | | | | | | | | | | |
| 1 | 123 | Ä | .012 | | | | | | | | | | | | | | | | | | | | |
| 00 | 153 | /ALL | .015 | | | | | | | | | | | | | | | | | | | | |
| Ę | 183 | (E) | .018 | | | | | | | | | | | | | | | | | | | | |
| IIAI | 223 | ITA | .022 | | | | | | | | | | | | | | | | | | | | |
| -CAPACITANCE CODE- | 273 | CAPACITANCE VALUE- | .027 | | | | | | | | | | | | | | | | | | | | |
| ٦ | 333 | Ď | .033 | | | | | | | | | | | | | | | | | | | | |
| | 393 | | .039 | | | | | | | | | | | | | | | | | | | | |
| | 473 | | .047 | | | | | | | | | | | | | | | | | | | | |
| | 563 683 | | .056 | | | | | | | | | | | | | | | | | | | | |
| | 823 | | .082 | | | | | | | | | | | | | | | | | | | | |
| | 104 | | .100uF | | | | | | | | | | | | | | | | | | | | |
| | 124 | | .120 | | | | | | | | | | | | | | | | | | | | |
| | 154 | | .150 | | | | | | | | | | | | | | | | | | | | |
| | 184 | | .180 | | | | | | | | | | | | | | | | | | | | |
| | 224 | | .220 | | | | | | | | | | | | | | | | | | | | |
| | 274 | | .270 | | | | | | | | | | | | | | | | | | | | |
| \ ! | 334 | ļ | .330 | | | | | | | | | | | | | | | | | | | | |
| | | | .550 | | | | | | | | | | | | | | | | | | | | |

^{*} For values above 1uF, thickness may be greater than specified above. T(max): 1206 – 0.075" 1812 – 0.130" 1210 – 0.125" 2220 – 0.135"



Voltage and Capacitance Range

X7R Dielectric



| | | | | | | | | | | | | | | | | | | | | | | | (All meası | rements ir | n inches) |
|-------------|------|-------------------|---------|------|-----|------|--------|-----|------|------|-----|-------------|--------|-----|------|------|-----|------|---------------------|-----|------|-----|------------------|------------|-----------|
| | S | ize | | | | | .008) | | | | | 12 (±0.0 | | | | | | | 1 12 012) | | | | 2220 (±0. | | |
| | | L | | | | .1 | 26 | | | | | .1: | 26 | | | | | .1 | 77 | | | | .225 | / .225 | |
| | | W | | | | .0 | 63 | | | | | .0: | 98 | | | | | .1 | 26 | | | | .200 | / .210 | |
| | T (n | nax)* | | | | .0 | 70 | | | | | .1. | 25 | | | | | .0 | 95 | | | | .108 | /.108 | |
| | Mir | ı E/B | | | | .020 | ± .010 | | | | | .020 : | ± .010 | | | | | .024 | ± .015 | | | | .025 | ± .015 | |
| | VDCV | V (MA | X) | 6.3V | 10V | 16V | 25V | 50V | 100V | 6.3V | 10V | 16V | 25V | 50V | 100V | 6.3V | 10V | 16V | 25V | 50V | 100V | 16V | 25V | 50V | 100V |
| î | 394 | Ŷ | .390 | | | | | | | | | | | | | | | | | | | | | | |
| | 474 | | .470 | | | | | | | | | | | | | | | | | | | | | | |
| | 564 | | .560 | | | | | | | | | | | | | | | | | | | | | | |
| | 684 | | .680 | | | | | | | | | | | | | | | | | | | | | | |
| | 824 | | .820 | | | | | | | | | | | | | | | | | | | | | | |
| | 105 | | 1.00uF | | | | | | | | | | | | | | | | | | | | | | |
| CODE | 125 | Ü. | 1.20 | | | | | | | | | | | | | | | | | | | | | | |
| | 155 | VAI | 1.50 | | | | | | | | | | | | | | | | | | | | | | |
| ANC | 185 | NCE | 1.80 | | | | | | | | | | | | | | | | | | | | | | |
| CAPACITANCE | 225 | CAPACITANCE VALUE | 2.20 | | | | | | | | | | | | | | | | | | | | | | |
| CAP, | 335 | APA | 3.30 | | | | | | | | | | | | | | | | | | | | | | |
| | 475 | Ĭ | 4.70 | | | | | | | | | | | | | | | | | | | | | | |
| | 685 | | 6.80 | | | | | | | | | | | | | | | | | | | | | | |
| | 106 | | 10.0uF | | | | | | | | | | | | | | | | | | | | | | |
| | 156 | | 15.0uF | | | | | | | | | | | | | | | | | | | | | | |
| | 226 | | 22.0uF | | | | | | | | | | | | | | | | | | | | | | |
| | 476 | | 47.0uF | | | | | | | | | | | | | | | | | | | | | | |
| , | 107 | Ľ | 100.0uF | | | | | | | | | | | | | | | | | | | | | | |

^{*} For values above 1uF, thickness may be greater than specified above. T(max): 1206 – 0.075" 1812 – 0.130" 1210 - 0.125" 2220 - 0.135"

Voltage and Capacitance Range

X5R Dielectric



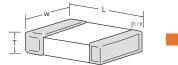
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | neasureme | | |
|------------------|------|--------------------|--------|---------------|-----|----|------|------------------------|-----|-----|----|------|-----|----------------------|-----|-----|------|-------------|-----|-----|------|--------------------|--------|-----|------|-------------|---------------|-----|------|---------------------|-------------|--------|
| | S | ize | | 010 (± 0.0 | | | | 0201 ± 0.002 | 2) | | | | | 4 02 .004) | | | | 06 (± 0. | | | | 08 (± 0. | | | | 12 (± 0. | .006 .008) | | | 210 .016) | 18 (±0.0 | |
| | | L | | .0 | 16 | | | .024 | | | | | .0 |)40 | | | | .0 | 63 | | | .0 | 80 | | | .1 | 26 | | .′ | 126 | .17 | 77 |
| | | W | | | 08 | | | .012 | | | | | |)20 | | | | | 32 | | | .0 | | | | | 63 | | |)98 | .12 | |
| | T (| max) | | .0 | 80 | | | .012 | | | | | .0 |)25 | | | | .0. | 40 | | | .0 | 50 | | | .0 | 72 | | | 125 | .02 | _ |
| | Mir | n E/E | 3 | .0 | 02 | | | .002 | | | | | .0 | 004 | | | | .0 | 80 | | | .020 | ± .010 | | | .020 | ± .010 | | .020 | ± .010 | .02 | |
| | VDCV | V (M | AX) | 6.3V | 10V | 4V | 6.3V | 10V | 16V | 25V | 4V | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 6.3V | 10V | 16V | 25V | 6.3V | 10V | 16V | 25V | 16V | 25V | 16V | 25V |
| î | 102 | î | 1000pF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 122 | | 1200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 152 | | 1500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 182 | | 1800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 222 | | 2200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 272 | | 2700 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 332 | | 3300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 392 | | 3900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 472 | | 4700 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 562 | | 5600 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 682 | | 6800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 822 | | 8200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAPACITANCE CODE | 103 | -CAPACITANCE VALUE | .01uF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANCE | 153 | NGE | .015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PACIT | 223 | ACIT/ | ,022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 333 | -CAP | .033 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 393 | | .039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 473 | | .047 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 104 | | 0.10uF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 154 | | .150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 224 | | .220 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 334 | | .330 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 474 | | .470 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 684 | | .680 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 105 | | 1.00uF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 125 | | 1.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | \neg |
| | 155 | | 1.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 185 | | 1.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 225 | | 2.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - |
| | 335 | | 3.30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ľ | ددد | Ľ | 5.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

For values above 1uF, thickness may be greater than specified above. T(max): 1206 – 0.075" 1812 – 0.130" 1210 – 0.125" 2220 – 0.135"



Voltage and Capacitance Range

X5R Dielectric (0402 - 1206)



Values that are typically available.

| | | | | | | | | | | | | | | | | | | (All m | ieasurer | nents ir | n inches) | |
|-------------------|-----|--------------------|---------|----|-------------------------|-----|----|------|------------------------|-----|-----|----|------|------|----------------------|-----|-----|--------|----------|------------------------|-----------|-----|
| | ! | Size | | (| 0402 (± 0.009 | | | (: | 0603 ± 0.006 | 5) | | | | | 3 05 .008) | | | | (| 1206 ± 0.008 | | |
| | | L | | | .040 | | | | .063 | | | | | .0 | 80 | | | | | .126 | | |
| | | W | | | .020 | | | | .032 | | | | | .0 | 50 | | | | | .063 | | |
| | Т | (max) | | | .027 | | | | .040 | | | | | .0 | 60 | | | | | .072 | | |
| | Mi | in E/E | 3 | | .004 | | | | .008 | | | | | .020 | ± .010 | | | | .0. | 20 ± .0 |)10 | |
| | VDC | w (M | AX) | 4V | 6.3V | 10V | 4V | 6.3V | 10V | 16V | 25V | 4V | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V |
| î | 395 | ^ | 3.90uF | | | | | | | | | | | | | | | | | | | |
| | 475 | | 4.70uF | | | | | | | | | | | | | | | | | | | |
| | 685 | | 6.80uF | | | | | | | | | | | | | | | | | | | |
| ODE | 106 | ALUE- | 10.0uF | | | | | | | | | | | | | | | | | | | |
| -CAPACITANCE CODE | 156 | -CAPACITANCE VALUE | 15.0uF | | | | | | | | | | | | | | | | | | | |
| PACIT/ | 226 | ACITA | 22.0uF | | | | | | | | | | | | | | | | | | | |
| CA | 476 | CAF | 47.0uF | | | | | | | | | | | | | | | | | | | |
| | 107 | | 100.0uF | | | | | | | | | | | | | | | | | | | |
| | 157 | | 150.0uF | | | | | | | | | | | | | | | | | | | |
| | 227 | > | 220.0uF | | | | | | | | | | | | | | | | | | | |

X5R Dielectric (1210 - 2221)

(All measurements in inches)

| | | Size | | | | 1210 (±0.016 | 5) | | | | 8 12 016) | | | | / 2221 016) | | |
|--------------|------------|---------------------|---------|--|-----|------------------------|-----|-----|------|------|---------------------|-----|------|------|-----------------------|-----|--|
| | | L | | | | .126 | | | | .1 | 77 | | | .225 | / .225 | | |
| | | W | | | | .098 | | | | .1 | 26 | | | .200 | / .210 | | |
| | Т | (max) | | | | .125 | | | | .1 | 30 | | | .135 | | | |
| | М | in E/E | 3 | | .0 | 20 ± .0 | 10 | | | .024 | ± .015 | | | .025 | ± .015 | | |
| | VDCW (MAX) | | | | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 6.3V | 10V | 25V | 50V | |
| î | 395 | î | 3.90uF | | | | | | | | | | | | | | |
| | 475 | | 4.70uF | | | | | | | | | | | | | | |
| | 685 | | 6.80uF | | | | | | | | | | | | | | |
| CODE- | 106 | /ALUE | 10.0uF | | | | | | | | | | | | | | |
| ANCE (| 156 | -CAPACITANCE VALUE- | 15.0uF | | | | | | | | | | | | | | |
| -CAPACITANCE | 226 | PACIT, | 22.0uF | | | | | | | | | | | | | | |
| CA | 476 | Y | 47.0uF | | | | | | | | | | | | | | |
| | 107 | | 100.0uF | | | | | | | | | | | | | | |
| | 157 | | 150.0uF | | | | | | | | | | | | | | |
| ļ | 227 | - | 220.0uF | | | | | | | | | | | | | | |

For values above 1uF, thickness may be greater than specified above. 2220 - 0.135"

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available. All components manufactured with the X7R dielectric are also available as an X5R dielectric.



1210 - 0.125"

Voltage and Capacitance Range

Z5U Dielectric



| | | | | | | | | | | | | | | | | (All measurem | |
|------------------|------|-------------------|--------|--------------------|-----|-----|----------------------|-------------|--------|-------------|--------------------|------------|--------|------------|---------------------|---------------|-----------------------|
| | Si | ze | | 05 (± 0. | | | 5 03 .006) | 08 (± 0. | .008) | 12 (± 0. | 0 6 008) | 12 (±0. | | 18 (±0. | 1 12 016) | 2220 (±0. | / 2221 016) |
| | ı | L | | .0 | 50 | .с | 163 | .0 | 80 | .1 | 26 | .1 | 26 | .1 | 77 | .225 | / .225 |
| | V | N | | .0. | 40 | .0 | 132 | .0 | 50 | .0 | 63 | .0 | 98 | .1: | 26 | .200 | / .210 |
| | T (n | nax) | | .0. | 40 | .0 | 138 | .0 | 58 | .0 | 70 | .0 | 75 | .0 | 85 | .108 | /.108 |
| | Min | E/B | | .0 | 05 | .С | 108 | .020 | ± .010 | .020 | ± .010 | .020 | ± .010 | .024 : | ± .015 | .025 | ± .015 |
| | VDCW | (MA | X) | 25V | 50V | 25V | 50V | 25V | 50V | 25V | 50V | 25V | 50V | 25V | 50V | 25V | 50V |
| ^ | 102 | ^- | 1000pF | | | | | | | | | | | | | | |
| | 122 | | 1200 | | | | | | | | | | | | | | |
| | 152 | | 1500 | | | | | | | | | | | | | | |
| | 182 | | 1800 | | | | | | | | | | | | | | |
| | 222 | | 2200 | | | | | | | | | | | | | | |
| | 272 | | 2700 | | | | | | | | | | | | | | |
| | 332 | | 3300 | | | | | | | | | | | | | | |
| | 392 | | 3900 | | | | | | | | | | | | | | |
| | 472 | | 4700 | | | | | | | | | | | | | | |
| | 562 | | 5600 | | | | | | | | | | | | | | |
| | 682 | | 6800 | | | | | | | | | | | | | | |
| | 822 | | 8200 | | | | | | | | | | | | | | |
| | 103 | | .01uF | | | | | | | | | | | | | | |
| DDE- | 123 | CAPACITANCE VALUE | .012 | | | | | | | | | | | | | | |
| CAPACITANCE CODE | 153 | ΕVΑ | .015 | | | | | | | | | | | | | | |
| IANC | 183 | ANC | .018 | | | | | | | | | | | | | | |
| 'ACI | 223 | ACIT | .022 | | | | | | | | | | | | | | |
| -CAP | 273 | CAP | .027 | | | | | | | | | | | | | | |
| | 333 | | .033 | | | | | | | | | | | | | | |
| | 393 | | .039 | | | | | | | | | | | | | | |
| | 473 | | .047 | | | | | | | | | | | | | | |
| | 563 | | .056 | | | | | | | | | | | | | | |
| | 683 | | .068 | | | | | | | | | | | | | | |
| | 823 | | .082 | | | | | | | | | | | | | | |
| | 104 | | .100uF | | | | | | | | | | | | | | |
| | 124 | | .120 | | | | | | | | | | | | | | |
| | 154 | | .150 | | | | | | | | | | | | | | |
| | 184 | | .180 | | | | | | | | | | | | | | |
| | 224 | | .220 | | | | | | | | | | | | | | |
| | 274 | > | .270 | | | | | | | | | | | | | | |
| Ľ | 334 | | .330 | | | | | | | | | | | | | | |

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.



Voltage and Capacitance Range **Z5U Dielectric** Values that are typically available. (All measurements in inches) 2220 / 2221 Size (± 0.008) (± 0.008) (± 0.006) (± 0.008) (±0.016) (±0.016) (±0.016) .050 .063 .080 .126 .126 .177 .225 / .225 W .040 .032 .050 .126 .200 / .210 T (max) .040 .038 .058 .070 .075 .085 .108 /.108 Min E/B .005 .008 .020 ± .010 .020 ± .010 .020 ± .010 .024 ± .015 .025 ± .015 VDCW (MAX) 25V 394 .390 474 .470 564 .560 684 .680 .820 105 155 1.50 185 1.80 225 2.20 335 3.30 395 3.90 475 4.70 685 6.80 106 10.0uF

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available. For values above 1uF, thickness may be greater than specified above.

156

226

476

107

15.0uF

22.0uF

47.0uF

100.0uF

Voltage and Capacitance Range

Y5V Dielectric



| | | | | | | | | | | | | | | | | | | | | | | | | | | | /All m | | ents in ii | nehoe) |
|------------------|------|--------------------|--------|-----------|------|-----|---------|-----|-----|------|-----|---------|-----|-----|------|-----|---------|-----|-----|-----|-------|--------|-----|------|------|--------|----------|------|------------|--------|
| | Siz | | | 0201 | | | 0402 | | | | | 0603 | | | | | 0805 | | | | 12 | | | | | 210 | (All III | | 1812 | |
| | 314 | ze . | | (± 0.002) | | (± | ± 0.004 | +) | | | (: | ± 0.006 | i) | | | (: | ± 0.008 | 3) | | | (± 0. | 008) | | | (±0. | 016) | | (| ±0.016) |) |
| | L | L | | .024 | | | .040 | | | | | .063 | | | | | .080 | | | | .1 | 26 | | | .1 | 126 | | | .177 | |
| | v | V | | .012 | | | .020 | | | | | .032 | | | | | .050 | | | | .0 | 63 | | | .0 |)98 | | | .126 | |
| | T (m | nax) | | .012 | | | .025 | | | | | .038 | | | | | .058 | | | | .0 | 70 | | | .0 | 096 | | | .085 | |
| | Min | E/B | | .002 | | | .004 | | | | | .008 | | | | .0 | 20 ± .0 | 010 | | | .020 | ± .010 | | | .020 | ± .010 | | .0 | 24 ± .0 | 115 |
| | VDCW | (MA | X) | 10V | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 6.3V | 10V | 25V |
| î | 102 | î | 1000pF | | | | | | | | | | | | | | | | | | | | | | | | | | ш | |
| | 122 | | 1200 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 152 | | 1500 | | | | | | | | | | | | | | | | | | | | | | | | | | ш | |
| | 182 | | 1800 | | | | | | | | | | | | | | | | | | | | | | | | | | ш | |
| | 222 | | 2200 | | | | | | | | | | | | | | | | | | | | | | | | | | \square | |
| | 272 | | 2700 | | | | | | | | | | | | | | | | | | | | | | | | | | \square | |
| | 332 | | 3300 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 392 | | 3900 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 472 | | 4700 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 562 | | 5600 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 682 | | 6800 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 822 | | 8200 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 103 | 4 | .01uF | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 123 | /ALL | .012 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Į Š | 153 | Ę. | .015 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Į, | 183 | ITAN | .018 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAPACITANCE CODE | 223 | CAPACITANCE VALUE- | .022 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 273 | 5 | .027 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 333 | | .033 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 393 | | .039 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 473 | | .047 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 563 | | .056 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 683 | | .068 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 823 | | .082 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 104 | | .100uF | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 124 | | .120 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 154 | | .150 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 184 | | .180 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 224 | | .220 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 274 | | .270 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ľ | 334 | \ \ | .330 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available. For values above 1uF, thickness may be greater than specified above.



Voltage and Capacitance Range

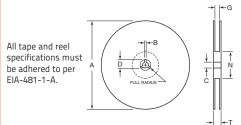
Y5V Dielectric



| | | | | 0704 | | 0/02 | | | | | | | | | 0005 | | | | | | | | | 4240 | | (All m | easuren | nents in i | |
|------------------|------|---------------------|---------|-----------------------|------|-------------------------|-----|------|-----|-------------------------|-----|-----|------|-----|------------------------|-----|-----|-----|-----|----------------------|-----|------|-----|------------------------|-----|--------|---------|------------------------|-----|
| | | Size | | 0201 (± 0.002) | (| 0402 (± 0.004 | | | | 0603 (± 0.006 | 5) | | | (| 0805 ± 0.008 | 3) | | | | 2 06 .008) | | | | 1210 (±0.016 | | | | 1812 (±0.016 | |
| | | L | | .024 | | .040 | | | | .063 | | | | | .080 | | | | .1 | 26 | | | | .126 | | | | .177 | |
| | _ | W | | .012 | | .020 | | | | .032 | | | | | .050 | | | | | 063 | | | | .098 | | | | .126 | |
| - | - | max) | | .012 | | .025 | | | | .038 | | | | | .058 | | | | | 070 | | | | 0.10 | | | | .085 | |
| | | n E/B | | .002 | | .004 | | | | .008 | | | | | 20 ± .C | | | | | ± .010 | | | |)20 ± .0 | | | | 24 ± .0 | |
| | VDC\ | N (MA | XX) | 10V | 6.3V | 10V | 16V | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V | 10V | 16V | 25V | 50V | 6.3V | 10V | 16V | 25V | 50V | 6.3V | 10V | 25V |
| Î | 394 | ^ | .390 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 474 | | .470 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 564 | | .560 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 684 | | .680 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 824 | | .820 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 105 | | 1.00uF | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 125 | | 1.20 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CODE | 155 | /ALUE | 1.50 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANCE | 185 | ANCE | 1.80 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAPACITANCE CODE | 225 | -CAPACITANCE VALUE- | 2.20 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Α) | 335 | CA | 3.30 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 395 | | 3.90 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 475 | | 4.70 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 685 | | 6.80 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 106 | | 10.0uF | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 156 | | 15.0uF | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 226 | | 22.0uF | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 476 | | 47.0uF | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 107 | > | 100.0uF | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available. For values above 1uF, thickness may be greater than specified above.

Tape and Reel Specifications

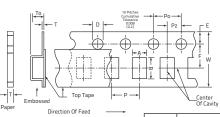


Reel Dimensions

Unit: mm (inch)

| Таре | B min | С | A (7") | A (13") | D min | N min | G | T max |
|------|----------------|-----------------------------|-------------------------|-------------------------|---------------------------|--------------|-----------------------------|------------------------|
| 4mm | 2.0 (0.079) | 13 ± 0.05 (0.512 ± 0.02) | 178 ±2.0 (7 ± 0.079) | - | 21 ± 0.8 (0.82 ± 0.03) | 50 (1.97) | 5.0 ± 1.5 (0.196 ± 0.05) | 8.0 max (0.315 max) |
| 8mm | 2.0 (0.07) | 13 ± 0.05 (0.512 ± 0.02) | 178 ±2.0 (7 ± 0.079) | 330 ± 2.0 (13± 0.08) | 20.2 (0.795) | 50 (1.97) | 10 ± 1.5 (0.394 ± 0.059) | 14.9 (0.587) |
| 12mm | 2.0 (0.07) | 13 ± 0.05 (0.512 ± 0.02) | 178 ±2.0 (7 ± 0.079) | 330 ± 2.0 (13± 0.08) | 20.2 (0.795) | 50 (1.97) | 10 ± 1.5 (0.394 ± 0.059) | 14.9 (0.587) |

Taping Specifications



7 in. Reel Quantities **

| Size | 01005 (E) | 01005 (P) | 0201 | 0402 | 0603 | 0805 | 1206 | 1210 | 1812 | 2221 |
|---------------------|-----------|-----------|--------|--------|-------|-------|-------|-------|-------|-------|
| Tape Size | 4mm | 8mm | 8mm | 8mm | 8mm | 8mm | 8mm | 8mm | 12mm | 12mm |
| Min Qty Per Reel | 40,000* | 20000* | 15,000 | 5,000 | 3,000 | 2,000 | 2,000 | 1,000 | 1,000 | 1,000 |
| Max Qty Per Reel | 40,000* | 20000* | 15,000 | 10,000 | 4,000 | 5,000 | 5,000 | 5,000 | 3,000 | 1,000 |

Note: ** Quantity dependent on thickness

*Smaller quantities may be available. Please contact us.

Unit: mm (inch)

Paper Tape Carrier **Dimensions** (8mm)

| Size (inches) | А | В | w | F | E | Po | Pz | D | t | Р |
|------------------|----------------------------------------|-------------------------------|----------------------------|---------------------------------------|-----------------------------|----------------------------|---------------------------------------------|----------------------------|------------------------|-----------------------------|
| 01005 | 0.25 ± 0.05 (0.010 ± .002) | 0.45 ± 0.05 (0.018 ± .002) | 8.0 ± 0.2 (.315 ± .008) | 3.5 ± 0.1 (.138 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 - 0.0 (.039 ± .002) 000 | 1.5 + 0.1 | 1.15 MAX (.045 MAX) | 2.0 ± 0.05 (.079 ± .002) |
| 0201 | 0.37 ± 0.05 (0.014 ± .002) | 0.67 ± 0.05 (0.026 ± .002) | 8.0 ± 0.2 (.315 ± .008) | 3.5 ± 0.1 (.138 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 - 0.0 (.039 ± .002) 000 | 1.5 + 0.1 | 1.15 MAX (.045 MAX) | 2.0 ± 0.05 (.079 ± .002) |
| 0402 | $\frac{0.65 \pm 0.1}{(.026 \pm .004)}$ | 1.10 ± 0.2 (.043 ± .008) | 8.0 ± 0.2 (.315 ± .008) | 3.5 ± 0.1 (.138 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 - 0.0 (.039 ± .002) 000 | 1.5 + 0.1 | 1.15 MAX (.045 MAX) | 2.0 ± 0.05 (.079 ± .002) |
| 0603 | 1.10 ± 0.2 (.043 ± .008) | 1.90 ± 0.2 (.075 ± .008) | 8.0 ± 0.2 (.315 ± .008) | 3.5 ± 0.1 (.138 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 - 0.0 (.039 ± .002) 000 | 1.5 + 0.1 | 1.15 MAX (.045 MAX) | 4.0 ± 0.1 (.157 ± .004) |
| 0805 | 1.16 ± 0.2 (.046 ± .008) | 2.4 ± 0.2 (.095 ± .008) | 8.0 ± 0.2 (.315 ± .008) | 3.5 ± 0.1 (.138 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 - 0.0 (.039 ± .002) 000 | 1.5 + 0.1 (.064 + .004) | 1.15 MAX (.045 MAX) | 4.0 ± 0.1 (.157 ± .004) |
| 1206 | 2.0 ± 0.2 (.079 ± .008) | 3.6 ± 0.2 (.142 ± .008) | 8.0 ± 0.2 (.315 ± .008) | $\frac{3.5 \pm 0.1}{(.138 \pm .004)}$ | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 - 0.0 (.039 ± .002) 000 | 1.5 + 0.1 (.064 + .004) | 1.15 MAX (.045 MAX) | 4.0 ± 0.1 (.157 ± .004) |

Embossed Carrier **Dimensions** (4mm, 8mm & 12mm)

| Size (inches) | А | В | w | F | E | Po | Pz | D | То | Т | Р |
|------------------|-----------------------------|----------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------------------|-----------------------------|-------------------------------------------|------------------------|-----------------------------|----------------------------|
| 01005 | 0.23 (0.009) | <u>0.43</u> (0.016) | 4.0 ± 0.05 (0.157 ± 0.002) | 1.8 ± 0.02 (0.070 ± 0.001) | 0.9 ± 0.05 (0.035 ± 0.002) | $\frac{2.0 \pm 0.04}{(0.079 \pm 0.001)}$ | 2.00 (0.079) | 0.8 ± 0.04 (0.031 ± 0.001) | 0.5 max (0.019 max) | 0.15 ~0.4 (0.005 ~0.015) | 1.00 (0.039) |
| 0805 | 1.48 ± 0.2 (.058 ± .008) | 2.3 ± 0.2 (.091 ± .008) | 8.0 ± 0.2 (.315 ± .008) | 3.5 ± .0.1 (.138 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 (.079 ± .002) | 1.5 + 0.1 - 0.0 (.06 + .004) 000 | 2.5 MAX (.098 MAX) | 0.6 MAX (.024 MAX) | 4.0 ± 0.1 (.157 ± .004) |
| 1206 | 2.0 ± 0.2 (.079 ± .008) | 3.6 ± 0.2 (.142 ± .008) | 8.0 ± 0.2 (.315 ± .008) | 3.5 ± .0.1 (.138 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 (.079 ± .002) | 1.5 + 0.1 - 0.0 (.06 + .004) 000 | 2.5 MAX (.098 MAX) | 0.6 MAX (.024 MAX) | 4.0 ± 0.1 (.157 ± .004) |
| 1210 | 2.9 ± 0.2 (.114 ± .008) | 3.6 ± 0.2 (.142 ± .008) | 8.0 ± 0.2 (.315 ± .008) | 3.5 ± .0.1 (.138 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 (.079 ± .002) | 1.5 + 0.1 - 0.0 (.06 + .004) 000 | 2.5 MAX (.098 MAX) | 0.6 MAX (.024 MAX) | 4.0 ± 0.1 (.157 ± .004) |
| 1812 | 3.6 ± 0.2 (.142 ± .008) | 4.9 ± 0.2 (.193 ± .008) | 12.0 ± 0.3 (.472 ± .012) | 5.6 ± .0.1 (.221 ± .004) | 1.75 ± 0.1 (.069 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 2.0 ± 0.05 (.079 ± .002) | 1.5 + 0.1 - 0.0 (.06 + .004) 000 | 3.8 MAX (.150 MAX) | 0.6 MAX (.024 MAX) | 8.0 ± 0.1 (.315 ± .004) |

