
# type 500

## screw terminal can style

The 500 range of computer grade aluminium electrolytic capacitors is designed for long life applications which require high ripple current, low E.S.R. and high CV product at 85°C continuous operation. The 500X range covers the higher capacitance values and the 500R has minimum E.S.R. ratings. Life tests are either 1500 hours at 85°C with rated d.c. voltage and full rated ripple current or 2000 hours at 85°C with rated d.c. voltage and 85% of rated ripple current. Standard tolerances are +75, −10% and +50, −10%,

Leakage current = $.006\ CV + 4\ \mu A$ CV ≤250,000 μF−V
= $3\ \sqrt{CV}\ (\mu A)$ CV >250,000 μF−V

For more detailed information request Bulletin 2236E.

## Type 500X High Capacitance Ratings

| Capacitance μF | Case Code | Max. ESR (ohms) 120Hz | Ripple Current (rms amps) 120Hz, 85°C |
|---|---|---|---|
| **5 VDC — 6.3 VDC SURGE** | | | |
| 20,000 | AA | .120 | 3.00 |
| 37,000 | AB | .060 | 4.00 |
| 53,000 | AC | .041 | 6.00 |
| 61,000 | AD | .035 | 6.30 |
| 69,000 | AE | .031 | 6.90 |
| 72,000 | BB | .042 | 5.50 |
| 77,000 | AF | .028 | 7.60 |
| 110,000 | BC | .025 | 8.10 |
| 120,000 | CB | .023 | 7.40 |
| 125,000 | BD | .022 | 8.70 |
| 145,000 | BE | .020 | 9.70 |
| 160,000 | BF | .018 | 10.00 |
| 178,000 | CC | .014 | 11.00 |
| 210,000 | CD | .012 | 12.00 |
| 240,000 | CE | .011 | 13.00 |
| 270,000 | CF | .010 | 14.50 |
| 270,000 | DC | .012 | 12.50 |
| 315,000 | DD | .011 | 13.70 |
| 360,000 | DE | .010 | 15.00 |
| 400,000 | DF | .009 | 16.00 |
| **10 VDC — 15 VDC SURGE** | | | |
| 13,000 | AA | .120 | 3.0 |
| 25,000 | AB | .065 | 4.2 |
| 37,000 | AC | .048 | 5.5 |
| 42,000 | AD | .040 | 6.0 |
| 48,000 | AE | .036 | 6.5 |
| 50,000 | BB | .045 | 5.3 |
| 53,000 | AF | .032 | 7.2 |
| 75,000 | BC | .027 | 7.8 |
| 82,000 | CB | .025 | 7.0 |
| 86,000 | BD | .023 | 8.5 |
| 100,000 | BE | .021 | 9.4 |
| 112,000 | BF | .019 | 10.4 |
| 120,000 | CC | .015 | 10.5 |
| 140,000 | CD | .014 | 11.3 |
| 160,000 | CE | .011 | 13.0 |
| 180,000 | CF | .010 | 14.5 |
| 180,000 | DC | .013 | 12.0 |
| 220,000 | DD | .012 | 13.2 |
| 250,000 | DE | .011 | 14.3 |
| 280,000 | DF | .010 | 15.5 |
| **15 VDC — 20 VDC SURGE** | | | |
| 9,500 | AA | .130 | 2.9 |
| 17,000 | AB | .068 | 4.1 |
| 25,000 | AC | .049 | 5.5 |
| 29,000 | AD | .041 | 5.8 |
| 32,000 | AE | .038 | 6.3 |
| 33,000 | BB | .047 | 5.2 |
| 37,000 | AF | .033 | 7.0 |
| 50,000 | BC | .028 | 7.7 |
| 57,000 | CB | .027 | 6.8 |
| 59,000 | BD | .024 | 8.4 |
| 67,000 | BE | .022 | 9.2 |
| 76,000 | BF | .019 | 10.4 |
| 85,000 | CC | .016 | 10.5 |
| 100,000 | CD | .015 | 11.0 |
| 114,000 | CE | .012 | 12.5 |
| 127,000 | CF | .011 | 13.8 |
| 127,000 | DC | .013 | 12.0 |
| 150,000 | DD | .012 | 13.2 |
| 174,000 | DE | .011 | 14.3 |
| 190,000 | DF | .010 | 15.5 |

| Capacitance μF | Case Code | Max. ESR (ohms) 120Hz | Ripple Current (rms amps) 120Hz, 85°C |
|---|---|---|---|
| **20 VDC — 30 VDC SURGE** | | | |
| 7,000 | AA | .140 | 2.6 |
| 12,000 | AB | .072 | 4.0 |
| 18,000 | AC | .050 | 5.4 |
| 21,000 | AD | .042 | 5.7 |
| 24,000 | AE | .040 | 6.1 |
| 24,000 | BB | .048 | 5.1 |
| 27,000 | AF | .035 | 6.8 |
| 36,000 | BC | .029 | 7.5 |
| 41,000 | CB | .029 | 6.6 |
| 43,000 | BD | .026 | 8.0 |
| 48,000 | BE | .023 | 9.6 |
| 55,000 | BF | .020 | 10.1 |
| 62,000 | CC | .017 | 9.9 |
| 72,000 | CD | .015 | 10.5 |
| 82,000 | CE | .013 | 12.0 |
| 93,000 | CF | .011 | 13.6 |
| 93,000 | DC | .014 | 11.6 |
| 110,000 | DD | .012 | 13.2 |
| 120,000 | DE | .011 | 14.3 |
| 140,000 | DF | .010 | 15.5 |
| **25 VDC — 35 VDC SURGE** | | | |
| 5,900 | AA | .140 | 2.8 |
| 10,000 | AB | .074 | 3.9 |
| 15,000 | AC | .051 | 5.4 |
| 18,000 | AD | .045 | 5.6 |
| 20,000 | AE | .043 | 5.9 |
| 20,000 | BB | .052 | 4.9 |
| 23,000 | AF | .037 | 6.6 |
| 31,000 | BC | .030 | 7.4 |
| 35,000 | CB | .030 | 6.5 |
| 36,000 | BD | .027 | 7.9 |
| 41,000 | BE | .024 | 8.8 |
| 46,000 | BF | .021 | 9.8 |
| 52,000 | CC | .018 | 9.5 |
| 61,000 | CD | .016 | 10.6 |
| 70,000 | CE | .014 | 11.6 |
| 79,000 | CF | .012 | 13.2 |
| 79,000 | DC | .014 | 11.6 |
| 92,000 | DD | .013 | 12.6 |
| 105,000 | DE | .012 | 13.7 |
| 120,000 | DF | .011 | 14.7 |
| **30 VDC — 40 VDC SURGE** | | | |
| 5,200 | AA | .150 | 2.7 |
| 9,300 | AB | .078 | 3.8 |
| 13,000 | AC | .054 | 5.2 |
| 15,000 | AD | .049 | 5.4 |
| 17,000 | AE | .044 | 5.8 |
| 18,000 | BB | .055 | 4.7 |
| 19,000 | AF | .039 | 6.5 |
| 28,000 | BC | .031 | 7.3 |
| 30,000 | CB | .030 | 6.5 |
| 33,000 | BD | .027 | 7.9 |
| 37,000 | BE | .024 | 8.8 |
| 42,000 | BF | .022 | 9.7 |
| 45,000 | CC | .018 | 9.6 |
| 52,000 | CD | .016 | 10.5 |
| 60,000 | CE | .014 | 11.6 |
| 67,000 | CF | .012 | 13.2 |
| 69,000 | DC | .015 | 11.2 |
| 80,000 | DD | .013 | 13.1 |
| 90,000 | DE | .012 | 13.7 |
| 103,000 | DF | .011 | 14.4 |


# type 500

## screw terminal can style

The 500 range of computer grade aluminium electrolytic capacitors is designed for long life applications which require high ripple current, low E.S.R. and high CV product at 85°C continuous operation. The 500X range covers the higher capacitance values and the 500R has minimum E.S.R. ratings. Life tests are either 1500 hours at 85°C with rated d.c. voltage and full rated ripple current or 2000 hours at 85°C with rated d.c. voltage and 85% of rated ripple current. Standard tolerances are +75, −10% and +50, −10%,

Leakage current = $.006\,CV + 4\ \mu A$ CV ≤250,000 μF−V
= $3\ \sqrt{CV}\ (\mu A)$ CV >250,000 μF−V

For more detailed information request Bulletin 2236E.

## Type 500X High Capacitance Ratings

| Capacitance μF | Case Code | Max. ESR (ohms) 120Hz | Ripple Current (rms amps) 120Hz, 85°C |
|---|---|---|---|
| **5 VDC — 6.3 VDC SURGE** | | | |
| 20,000 | AA | .120 | 3.00 |
| 37,000 | AB | .060 | 4.00 |
| 53,000 | AC | .041 | 6.00 |
| 61,000 | AD | .035 | 6.30 |
| 69,000 | AE | .031 | 6.90 |
| 72,000 | BB | .042 | 5.50 |
| 77,000 | AF | .028 | 7.60 |
| 110,000 | BC | .025 | 8.10 |
| 120,000 | CB | .023 | 7.40 |
| 125,000 | BD | .022 | 8.70 |
| 145,000 | BE | .020 | 9.70 |
| 160,000 | BF | .018 | 10.00 |
| 178,000 | CC | .014 | 11.00 |
| 210,000 | CD | .012 | 12.00 |
| 240,000 | CE | .011 | 13.00 |
| 270,000 | CF | .010 | 14.50 |
| 270,000 | DC | .012 | 12.50 |
| 315,000 | DD | .011 | 13.70 |
| 360,000 | DE | .010 | 15.00 |
| 400,000 | DF | .009 | 16.00 |
| **10 VDC — 15 VDC SURGE** | | | |
| 13,000 | AA | .120 | 3.0 |
| 25,000 | AB | .065 | 4.2 |
| 37,000 | AC | .048 | 5.5 |
| 42,000 | AD | .040 | 6.0 |
| 48,000 | AE | .036 | 6.5 |
| 50,000 | BB | .045 | 5.3 |
| 53,000 | AF | .032 | 7.2 |
| 75,000 | BC | .027 | 7.8 |
| 82,000 | CB | .025 | 7.0 |
| 86,000 | BD | .023 | 8.5 |
| 100,000 | BE | .021 | 9.4 |
| 112,000 | BF | .019 | 10.4 |
| 120,000 | CC | .015 | 10.5 |
| 140,000 | CD | .014 | 11.3 |
| 160,000 | CE | .011 | 13.0 |
| 180,000 | CF | .010 | 14.5 |
| 180,000 | DC | .013 | 12.0 |
| 220,000 | DD | .012 | 13.2 |
| 250,000 | DE | .011 | 14.3 |
| 280,000 | DF | .010 | 15.5 |
| **15 VDC — 20 VDC SURGE** | | | |
| 9,500 | AA | .130 | 2.9 |
| 17,000 | AB | .068 | 4.1 |
| 25,000 | AC | .049 | 5.5 |
| 29,000 | AD | .041 | 5.8 |
| 32,000 | AE | .038 | 6.3 |
| 33,000 | BB | .047 | 5.2 |
| 37,000 | AF | .033 | 7.0 |
| 50,000 | BC | .028 | 7.7 |
| 57,000 | CB | .027 | 6.8 |
| 59,000 | BD | .024 | 8.4 |
| 67,000 | BE | .022 | 9.2 |
| 76,000 | BF | .019 | 10.4 |
| 85,000 | CC | .016 | 10.5 |
| 100,000 | CD | .015 | 11.0 |
| 114,000 | CE | .012 | 12.5 |
| 127,000 | CF | .011 | 13.8 |
| 127,000 | DC | .013 | 12.0 |
| 150,000 | DD | .012 | 13.2 |
| 174,000 | DE | .011 | 14.3 |
| 190,000 | DF | .010 | 15.5 |
| **20 VDC — 30 VDC SURGE** | | | |
| 7,000 | AA | .140 | 2.6 |
| 12,000 | AB | .072 | 4.0 |
| 18,000 | AC | .050 | 5.4 |
| 21,000 | AD | .042 | 5.7 |
| 24,000 | AE | .040 | 6.1 |
| 24,000 | BB | .048 | 5.1 |
| 27,000 | AF | .035 | 6.8 |
| 36,000 | BC | .029 | 7.5 |
| 41,000 | CB | .029 | 6.6 |
| 43,000 | BD | .026 | 8.0 |
| 48,000 | BE | .023 | 9.6 |
| 55,000 | BF | .020 | 10.1 |
| 62,000 | CC | .017 | 9.9 |
| 72,000 | CD | .015 | 10.5 |
| 82,000 | CE | .013 | 12.0 |
| 93,000 | CF | .011 | 13.6 |
| 93,000 | DC | .014 | 11.6 |
| 110,000 | DD | .012 | 13.2 |
| 120,000 | DE | .011 | 14.3 |
| 140,000 | DF | .010 | 15.5 |
| **25 VDC — 35 VDC SURGE** | | | |
| 5,900 | AA | .140 | 2.8 |
| 10,000 | AB | .074 | 3.9 |
| 15,000 | AC | .051 | 5.4 |
| 18,000 | AD | .045 | 5.6 |
| 20,000 | AE | .043 | 5.9 |
| 20,000 | BB | .052 | 4.9 |
| 23,000 | AF | .037 | 6.6 |
| 31,000 | BC | .030 | 7.4 |
| 35,000 | CB | .030 | 6.5 |
| 36,000 | BD | .027 | 7.9 |
| 41,000 | BE | .024 | 8.8 |
| 46,000 | BF | .021 | 9.8 |
| 52,000 | CC | .018 | 9.5 |
| 61,000 | CD | .016 | 10.6 |
| 70,000 | CE | .014 | 11.6 |
| 79,000 | CF | .012 | 13.2 |
| 79,000 | DC | .014 | 11.6 |
| 92,000 | DD | .013 | 12.6 |
| 105,000 | DE | .012 | 13.7 |
| 120,000 | DF | .011 | 14.7 |
| **30 VDC — 40 VDC SURGE** | | | |
| 5,200 | AA | .150 | 2.7 |
| 9,300 | AB | .078 | 3.8 |
| 13,000 | AC | .054 | 5.2 |
| 15,000 | AD | .049 | 5.4 |
| 17,000 | AE | .044 | 5.8 |
| 18,000 | BB | .055 | 4.7 |
| 19,000 | AF | .039 | 6.5 |
| 28,000 | BC | .031 | 7.3 |
| 30,000 | CB | .030 | 6.5 |
| 33,000 | BD | .027 | 7.9 |
| 37,000 | BE | .024 | 8.8 |
| 42,000 | BF | .022 | 9.7 |
| 45,000 | CC | .018 | 9.6 |
| 52,000 | CD | .016 | 10.5 |
| 60,000 | CE | .014 | 11.6 |
| 67,000 | CF | .012 | 13.2 |
| 69,000 | DC | .015 | 11.2 |
| 80,000 | DD | .013 | 13.1 |
| 90,000 | DE | .012 | 13.7 |
| 103,000 | DF | .011 | 14.4 |

# ordering codes and dimensions

## screw terminal can styles

**How to order**
Order by complete part number as shown.

**XXX 322 U 050 AA 2 B**

- **Terminal:** A = Low screw insert, B = High screw insert
- **Style Number:** polypropylene coated insulation .012″ + .004″, −.002″
- **Case Code:** See Table of Dimensions.
- **DC Voltage Rating:** This is expressed in volts, where necessary, to complete the three digit blocks; zeros are used to precede the voltage rating.
- **Capacitance Tolerance:** U = +75, −10%, T = +50, −10%, M = ±20% *
- **Capacitance:** This is expressed in microfarads. The first digits are significant figures, the last digit is the number of zeros.
- **Sangamo Type**

*See individual ranges for list of available tolerances.

**OUTLINE DIMENSIONS**

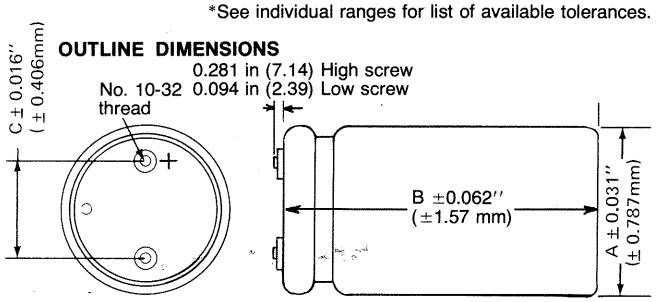



**Table 1: Uninsulated Case Dimensions**

| Case Code | Dim. in Inches | | | Dim. in Millimeters | | |
|---|---|---|---|---|---|---|
| | A | B | C | A | B | C |
| AK | 1.375 | 1.625 | 0.500 | 34.93 | 41.28 | 12.7 |
| AA | 1.375 | 2.125 | 0.500 | 34.93 | 53.98 | 12.7 |
| AH | 1.375 | 2.625 | 0.500 | 34.93 | 66.68 | 12.7 |
| AB | 1.375 | 3.125 | 0.500 | 34.93 | 79.38 | 12.7 |
| AJ | 1.375 | 3.625 | 0.500 | 34.93 | 92.08 | 12.7 |
| AC | 1.375 | 4.125 | 0.500 | 34.93 | 104.78 | 12.7 |
| AD | 1.375 | 4.625 | 0.500 | 34.93 | 117.48 | 12.7 |
| AE | 1.375 | 5.125 | 0.500 | 34.93 | 130.18 | 12.7 |
| AF | 1.375 | 5.625 | 0.500 | 34.93 | 142.88 | 12.7 |
| EA | 1.750 | 2.125 | 0.750 | 44.45 | 53.98 | 19.05 |
| EH | 1.750 | 2.625 | 0.750 | 44.45 | 66.68 | 19.05 |
| EB | 1.750 | 3.125 | 0.750 | 44.45 | 79.38 | 19.05 |
| EJ | 1.750 | 3.625 | 0.750 | 44.45 | 92.05 | 19.05 |
| EC | 1.750 | 4.125 | 0.750 | 44.45 | 104.78 | 19.05 |
| ED | 1.750 | 4.625 | 0.750 | 44.45 | 117.48 | 19.05 |
| EE | 1.750 | 5.125 | 0.750 | 44.45 | 130.18 | 19.05 |
| EF | 1.750 | 5.625 | 0.750 | 44.45 | 142.88 | 19.05 |
| BA | 2.000 | 2.125 | 0.875 | 50.80 | 53.98 | 22.23 |
| BH | 2.000 | 2.625 | 0.875 | 50.80 | 66.68 | 22.23 |
| BB | 2.000 | 3.125 | 0.875 | 50.80 | 79.38 | 22.23 |
| BJ | 2.000 | 3.625 | 0.875 | 50.80 | 92.08 | 22.23 |
| BC | 2.000 | 4.125 | 0.875 | 50.80 | 104.78 | 22.23 |
| BD | 2.000 | 4.625 | 0.875 | 50.80 | 117.48 | 22.23 |
| BE | 2.000 | 5.125 | 0.875 | 50.80 | 130.18 | 22.23 |
| BF | 2.000 | 5.625 | 0.875 | 50.80 | 142.88 | 22.23 |
| CB | 2.500 | 3.125 | 1.125 | 63.50 | 79.38 | 28.58 |
| CJ | 2.500 | 3.625 | 1.125 | 63.50 | 92.08 | 28.58 |
| CC | 2.500 | 4.125 | 1.125 | 63.50 | 104.78 | 28.58 |
| CD | 2.500 | 4.625 | 1.125 | 63.50 | 117.48 | 28.58 |
| CE | 2.500 | 5.125 | 1.125 | 63.50 | 130.18 | 28.58 |
| CF | 2.500 | 5.625 | 1.125 | 63.50 | 142.88 | 28.58 |
| DJ | 3.000 | 3.625 | 1.250 | 76.20 | 92.08 | 31.75 |
| DC | 3.000 | 4.125 | 1.250 | 76.20 | 104.78 | 31.75 |
| DD | 3.000 | 4.625 | 1.250 | 76.20 | 117.48 | 31.75 |
| DE | 3.000 | 5.125 | 1.250 | 76.20 | 130.18 | 31.75 |
| DF | 3.000 | 5.625 | 1.250 | 76.20 | 142.88 | 31.75 |
| DG | 3.000 | 8.625 | 1.250 | 76.20 | 219.08 | 31.75 |

**Table 2: Insulated Case Dimensions**

| | Dim. in Inches | | Dim. in Millimeters | |
|---|---|---|---|---|
| Polypropylene coated or plastic film insulation | Add to Dim. A | Add to Dim. B | Add to Dim. A | Add to Dim. B |
| | .024 | .030 | .510 | .762 |

## axial leaded styles

**How to order**

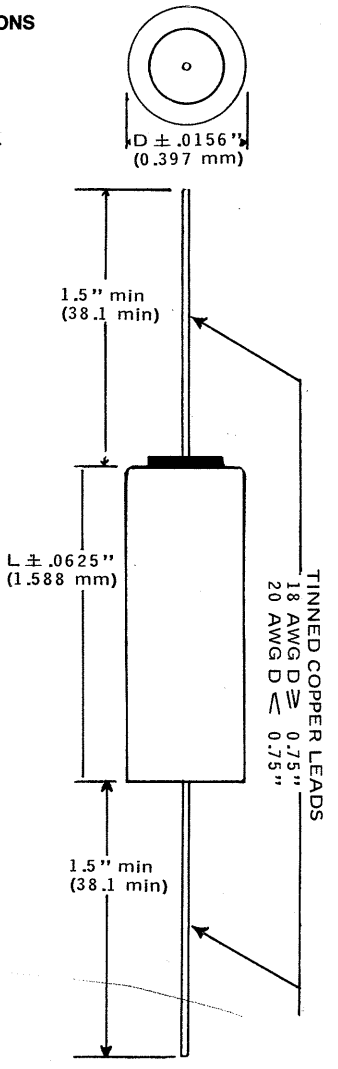
**XXX GP 391 T 005 A E**

- **Epoxy:** Optional
- **Container Insulation:** A — None; B — Plastic insulation .003 inches thick (without epoxy)
- **DC Voltage Rating:** This is expressed in volts with 7R5 signifying 7.5 volts. Zeros are used to precede the voltage rating to complete the three number block when necessary.
- **Capacitance Tolerance:** U = −10% +75%, T = −10% +50%, S = −10% +30%
- **Capacitance:** The capacitance is expressed in microfarads; the first two digits represent significant figures and the third and last digit specifies the number of zeros.
- **Case Code:** See table of dimensions.
- **Sangamo Type Number**

**OUTLINE DIMENSIONS**

| Case Code | D ins. | D mm | L ins. | L mm |
|---|---|---|---|---|
| EE | .500 | 12.7 | 1.125 | 28.6 |
| EJ | .500 | 12.7 | 1.625 | 41.3 |
| EL | .500 | 12.7 | 2.125 | 54.0 |
| FE | .625 | 15.88 | 1.125 | 28.6 |
| FJ | .625 | 15.88 | 1.625 | 41.3 |
| FL | .625 | 15.88 | 2.125 | 54.0 |
| FP | .625 | 15.88 | 2.625 | 66.7 |
| FS | .625 | 15.88 | 3.125 | 79.4 |
| FT | .625 | 15.88 | 3.625 | 92.1 |
| GE | .750 | 19.1 | 1.125 | 28.6 |
| GJ | .750 | 19.1 | 1.625 | 41.3 |
| GL | .750 | 19.1 | 2.125 | 54.0 |
| GP | .750 | 19.1 | 2.625 | 66.7 |
| GS | .750 | 19.1 | 3.125 | 79.4 |
| GT | .750 | 19.1 | 3.625 | 92.1 |
| HE | .875 | 22.2 | 1.125 | 28.6 |
| HJ | .875 | 22.2 | 1.625 | 41.3 |

| Case Code | D ins. | D mm | L ins. | L mm |
|---|---|---|---|---|
| HL | .875 | 22.2 | 2.125 | 54.0 |
| HP | .875 | 22.2 | 2.625 | 66.7 |
| HS | .875 | 22.2 | 3.125 | 79.4 |
| HT | .875 | 22.2 | 3.625 | 92.1 |
| JJ | 1.000 | 25.4 | 1.625 | 41.3 |
| JL | 1.000 | 25.4 | 2.125 | 54.0 |
| JP | 1.000 | 25.4 | 2.625 | 66.7 |
| JS | 1.000 | 25.4 | 3.125 | 79.4 |
| JT | 1.000 | 25.4 | 3.625 | 92.1 |
| DC | .375 | 9.53 | .812 | 20.62 |
| DD | .375 | 9.53 | .937 | 23.80 |
| DE | .375 | 9.53 | 1.125 | 28.58 |
| DG | .375 | 9.53 | 1.375 | 34.93 |
| DJ | .375 | 9.53 | 1.625 | 41.28 |
| DL | .375 | 9.53 | 2.187 | 55.55 |
| DX | .375 | 9.53 | 2.687 | 68.25 |




Marking: Capacitors will be marked with the following minimum information unless otherwise specified
(1) Manufacturer's name
(2) Capacitance and voltage
(3) Complete part number
(4) Manufacturer's EIA code and date code