

Metal Oxide Varistors



MVR Series
Description

MERITEK

FEATURES

- Fast response to rapidly rising surge voltage
- High performance clamping voltage characteristics
- Operating / storage temperature: -40 ~ +85°C / -40 ~ +125°C
- Varistor voltage: 18V to 1800 V

APPLICATIONS

- Transistor, diode, IC, thyristor and triac semiconductor protection
- Surge protection in consumer electronics, industrial electronics, communication, home appliances
- Electrostatic discharge and noise spike suppression
- Relay and electromagnetic valve surge absorption



UL1414 E197475
CSA 225125
VDE 40013638
UL1449 3rd Edition E326004

PART NUMBERING SYSTEM

MVR **05** **D** **471** **K** **Y** **-S**

Meritek Series

Element Dia

| CODE | 05 | 07 | 10 | 14 | 18 | 20 | 25 | 32 | 40 | 53 | 34 |
|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| mm | Ø5.0 | Ø7.0 | Ø10.0 | Ø14.0 | Ø18.0 | Ø20.0 | Ø25.0 | Ø32.0 | Ø40.0 | Ø53.0 | Ø34.0 |

| CODE | D | S | A | X |
|------|---------------------|---------------|------|---------|
| | Disk or dual square | Single square | Bare | Special |

Varistor Voltage

The first two digits are significant figures and the third one denotes the number of zeros following.

Decimal point is represented by R:

| CODE | 330 | 471 | 102 |
|------|------------------------|-------------------------|--------------------------|
| | $33 \times 10^0 = 33V$ | $47 \times 10^1 = 470V$ | $10 \times 10^2 = 1000V$ |

Tolerance

| CODE | K | M | |
|------|------|------|------------------------------|
| | ±10% | ±20% | Customer special requirement |

Lead Type

| CODE | Blank | Q | G | Y | O | I |
|------|---|-------|------|--------|----------|---------|
| | Straight Wire: Less than 25mm Strap: More than 25mm | Strap | Wire | Y kink | Out kink | In kink |

... - S High Surge

* Notes: A suffix may be added to denote custom features.

Metal Oxide Varistors

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• 05D SPECIFICATION

| Part No. | Maximum Allowable Voltage | | Varistor Voltage V@1ma (V) | Clamping Voltage (Max.) | | | Maximum Peak Current (8/20 μ s)(A) | | Maximum Energy (10/1000 s J) | | Rated Power (w) | Typical Capacitance @1KHz (pF) |
|----------|---------------------------|-----------|----------------------------------|-------------------------|-----------------------|----------|---|----------|---------------------------------|------|--------------------|--------------------------------------|
| | Acrms (V) | DC (V) | | VC (V) | I _p (A) | standard | high surge | standard | high surge | | | |
| 05D 180K | 11 | 14 | 18(15~21) | 40 | 1 | 100 | 250 | 0.4 | 0.6 | 0.01 | 1400 | |
| 05D 220K | 14 | 18 | 22(20~24) | 48 | | | | 0.5 | 0.7 | | 1150 | |
| 05D 270K | 17 | 22 | 27(24~30) | 60 | | | | 0.6 | 0.9 | | 930 | |
| 05D 330K | 20 | 26 | 33(30~36) | 73 | | | | 0.8 | 1.1 | | 760 | |
| 05D 390K | 25 | 31 | 39(35~43) | 86 | | | | 0.9 | 1.2 | | 640 | |
| 05D 470K | 30 | 38 | 47(42~52) | 104 | | | | 1.1 | 1.5 | | 530 | |
| 05D 560K | 35 | 45 | 56(50~62) | 123 | | | | 1.3 | 1.8 | | 450 | |
| 05D 680K | 40 | 56 | 68(61~75) | 150 | | | | 1.6 | 2.2 | | 370 | |
| 05D 820K | 50 | 65 | 82(74~90) | 145 | 5 | 400 | 800 | 2.5 | 4.0 | 0.10 | 300 | |
| 05D 101K | 60 | 85 | 100(90~110) | 175 | | | | 3.0 | 4.1 | | 250 | |
| 05D 121K | 75 | 100 | 120(108~132) | 210 | | | | 4.0 | 4.9 | | 210 | |
| 05D 151K | 95 | 125 | 150(135~165) | 260 | | | | 4.8 | 6.5 | | 165 | |
| 05D 181K | 115 | 150 | 180(162~198) | 320 | | | | 5.9 | 7.5 | | 140 | |
| 05D 201K | 130 | 170 | 200(185~225) | 355 | | | | 6.5 | 8.5 | | 125 | |
| 05D 221K | 140 | 180 | 220(198~242) | 380 | | | | 7.0 | 9.0 | | 110 | |
| 05D 241K | 150 | 200 | 240(216~264) | 415 | | | | 8.0 | 10.5 | | 100 | |
| 05D 271K | 175 | 225 | 270(243~297) | 475 | | | | 8.5 | 11.0 | | 95 | |
| 05D 301K | 190 | 250 | 300(270~330) | 520 | | | | 9.0 | 12.0 | | 85 | |
| 05D 331K | 210 | 275 | 330(297~363) | 570 | | | | 9.5 | 13.0 | | 75 | |
| 05D 361K | 230 | 300 | 360(324~396) | 620 | | | | 10.0 | 16.0 | | 70 | |
| 05D 391K | 250 | 320 | 390(351~429) | 675 | | | | 12.0 | 17.0 | | 65 | |
| 05D 431K | 275 | 350 | 430(387~473) | 745 | | | | 13.0 | 20.0 | | 60 | |
| 05D 471K | 300 | 385 | 470(423~517) | 810 | | | | 15.0 | 21.0 | | 55 | |
| 05D 511K | 320 | 415 | 510(459~561) | 845 | | | | 16.0 | 22.5 | | 50 | |
| 05D 561K | 350 | 460 | 560(504~616) | 920 | 16.0 | 24.0 | 45 | | | | | |

Metal Oxide Varistors

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• 07D SPECIFICATION

| Part No. | Maximum Allowable Voltage | | Varistor Voltage V@1ma (V) | Clamping Voltage (Max.) | | | Maximum Peak Current (8/20 μ s)(A) | | Maximum Energy (10/1000 s J) | | Rated Power (w) | Typical Capacitance @1KHz (pF) |
|----------|---------------------------|-----------|----------------------------------|-------------------------|-----------|----------|--|----------|------------------------------|------|--------------------|--------------------------------------|
| | Acrms (V) | DC (V) | | VC (V) | Ip (A) | standard | high surge | standard | high surge | | | |
| 07D 180K | 11 | 14 | 18(15~21) | 36 | 2.5 | 250 | 500 | 0.9 | 3.0 | 0.02 | 2800 | |
| 07D 220K | 14 | 18 | 22(20~24) | 43 | | | | 1.1 | 2.4 | | 2300 | |
| 07D 270K | 17 | 22 | 27(24~30) | 53 | | | | 1.4 | 3.0 | | 1800 | |
| 07D 330K | 20 | 26 | 33(30~36) | 65 | | | | 1.7 | 3.5 | | 1500 | |
| 07D 390K | 25 | 31 | 39(35~43) | 77 | | | | 2.1 | 4.0 | | 1300 | |
| 07D 470K | 30 | 38 | 47(42~52) | 93 | | | | 2.5 | 5.0 | | 1100 | |
| 07D 560K | 35 | 45 | 56(50~62) | 110 | | | | 3.1 | 6.0 | | 890 | |
| 07D 680K | 40 | 56 | 68(61~75) | 135 | | | | 3.6 | 7.0 | | 740 | |
| 07D 820K | 50 | 65 | 82(74~90) | 135 | 10 | 1200 | 1750 | 5.5 | 10.0 | 0.25 | 600 | |
| 07D 101K | 60 | 85 | 100(90~110) | 165 | | | | 6.5 | 12.0 | | 500 | |
| 07D 121K | 75 | 100 | 120(108~132) | 200 | | | | 7.8 | 13.0 | | 420 | |
| 07D 151K | 95 | 125 | 150(135~165) | 250 | | | | 9.7 | 13.0 | | 330 | |
| 07D 181K | 115 | 150 | 180(162~198) | 300 | | | | 11.7 | 16.0 | | 280 | |
| 07D 201K | 130 | 170 | 200(185~225) | 340 | | | | 13.0 | 17.0 | | 250 | |
| 07D 221K | 140 | 180 | 220(198~242) | 360 | | | | 14.0 | 19.0 | | 230 | |
| 07D 241K | 150 | 200 | 240(216~264) | 395 | | | | 15.0 | 21.0 | | 210 | |
| 07D 271K | 175 | 225 | 270(243~297) | 455 | | | | 18.0 | 24.0 | | 185 | |
| 07D 301K | 190 | 250 | 300(270~330) | 500 | | | | 20.0 | 26.0 | | 165 | |
| 07D 331K | 210 | 275 | 330(297~363) | 550 | | | | 23.0 | 28.0 | | 150 | |
| 07D 361K | 230 | 300 | 360(324~396) | 595 | | | | 25.0 | 32.0 | | 140 | |
| 07D 391K | 250 | 320 | 390(351~429) | 650 | | | | 25.0 | 35.0 | | 130 | |
| 07D 431K | 275 | 350 | 430(387~473) | 710 | | | | 28.0 | 40.0 | | 115 | |
| 07D 471K | 300 | 385 | 470(423~517) | 775 | | | | 30.0 | 42.0 | | 105 | |
| 07D 511K | 320 | 415 | 510(459~561) | 845 | | | | 30.0 | 45.0 | | 100 | |
| 07D 561K | 350 | 460 | 560(504~616) | 920 | 30.0 | 49.0 | 90 | | | | | |
| 07D 621K | 385 | 505 | 620(558~682) | 1025 | 33.0 | 55.0 | 80 | | | | | |
| 07D 681K | 420 | 560 | 680(612~748) | 1120 | 33.0 | 60.0 | 75 | | | | | |

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• 10D SPECIFICATION

| Part No. | Maximum Allowable Voltage | | Varistor Voltage V@1ma (V) | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 μ s)(A) | | Maximum Energy (10/1000 s J) | | Rated Power (w) | Typical Capacitance @1KHz (pF) |
|----------|---------------------------|-----------|----------------------------------|-------------------------|-----------------------|---|------------|---------------------------------|------------|--------------------|--------------------------------------|
| | Acrms (V) | DC (V) | | VC (V) | I _p (A) | standard | high surge | standard | high surge | | |
| 10D 180K | 11 | 14 | 18(15~21) | 36 | 5 | 500 | 1000 | 2.1 | 3.0 | 0.05 | 5600 |
| 10D 220K | 14 | 18 | 22(20~24) | 43 | | | | 2.5 | 5.0 | | 4500 |
| 10D 270K | 17 | 22 | 27(24~30) | 53 | | | | 3.0 | 6.0 | | 3700 |
| 10D 330K | 20 | 26 | 33(30~36) | 65 | | | | 4.0 | 7.0 | | 3000 |
| 10D 390K | 25 | 31 | 39(35~43) | 77 | | | | 4.6 | 9.0 | | 2400 |
| 10D 470K | 30 | 38 | 47(42~52) | 93 | | | | 5.5 | 11.0 | | 2100 |
| 10D 560K | 35 | 45 | 56(50~62) | 110 | | | | 7.0 | 13.0 | | 1800 |
| 10D 680K | 40 | 56 | 68(61~75) | 135 | | | | 8.2 | 15.0 | | 1500 |
| 10D 820K | 50 | 65 | 82(74~90) | 135 | 25 | 2500 | 3500 | 12.0 | 17.0 | 0.4 | 1200 |
| 10D 101K | 60 | 85 | 100(90~110) | 165 | | | | 15.0 | 18.0 | | 1000 |
| 10D 121K | 75 | 100 | 120(108~132) | 200 | | | | 18.0 | 21.0 | | 830 |
| 10D 151K | 95 | 125 | 150(135~165) | 250 | | | | 22.0 | 25.0 | | 670 |
| 10D 181K | 115 | 150 | 180(162~198) | 300 | | | | 27.0 | 30.0 | | 560 |
| 10D 201K | 130 | 170 | 200(185~225) | 340 | | | | 30.0 | 35.0 | | 500 |
| 10D 221K | 140 | 180 | 220(198~242) | 360 | | | | 32.0 | 39.0 | | 450 |
| 10D 241K | 150 | 200 | 240(216~264) | 395 | | | | 35.0 | 42.0 | | 420 |
| 10D 271K | 175 | 225 | 270(243~297) | 455 | | | | 40.0 | 49.0 | | 370 |
| 10D 301K | 190 | 250 | 300(270~330) | 500 | | | | 40.0 | 54.0 | | 330 |
| 10D 331K | 210 | 275 | 330(297~363) | 550 | | | | 43.0 | 58.0 | | 300 |
| 10D 361K | 230 | 300 | 360(324~396) | 595 | | | | 47.0 | 65.0 | | 280 |
| 10D 391K | 250 | 320 | 390(351~429) | 650 | | | | 60.0 | 70.0 | | 260 |
| 10D 431K | 275 | 350 | 430(387~473) | 710 | | | | 65.0 | 80.0 | | 230 |
| 10D 471K | 300 | 385 | 470(423~517) | 775 | | | | 70.0 | 85.0 | | 210 |
| 10D 511K | 320 | 415 | 510(459~561) | 845 | | | | 70.0 | 90.0 | | 200 |
| 10D 561K | 350 | 460 | 560(504~616) | 925 | | | | 70.0 | 92.0 | | 180 |
| 10D 621K | 385 | 505 | 620(558~682) | 1025 | | | | 70.0 | 95.0 | | 160 |
| 10D 681K | 420 | 560 | 680(612~748) | 1120 | | | | 70.0 | 98.0 | | 150 |
| 10D 751K | 460 | 615 | 750(675~825) | 1240 | | | | 75.0 | 100.0 | | 130 |
| 10D 781K | 485 | 640 | 780(702~858) | 1290 | 80.0 | 105.0 | 130 | | | | |
| 10D 821K | 510 | 670 | 820(738~902) | 1355 | 85.0 | 110.0 | 120 | | | | |
| 10D 911K | 550 | 745 | 910(819~1001) | 1500 | 93.0 | 130.0 | 110 | | | | |
| 10D 102K | 625 | 825 | 1000(900~1100) | 1650 | 102.0 | 140.0 | 100 | | | | |
| 10D 112K | 680 | 895 | 1100(990~1210) | 1815 | 115.0 | 155.0 | 90 | | | | |

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• 14D SPECIFICATION

| Part No. | Maximum Allowable Voltage | | Varistor Voltage V@1ma (V) | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 μ s)(A) | | Maximum Energy (10/1000 s J) | | Rated Power (w) | Typical Capacitance @1KHz (pF) |
|----------|---------------------------|-----------|----------------------------------|-------------------------|-----------------------|---|------------|---------------------------------|------------|--------------------|--------------------------------------|
| | Acrms (V) | DC (V) | | VC (V) | I _p (A) | standard | high surge | standard | high surge | | |
| 14D 180K | 11 | 14 | 18(15~21) | 36 | 10 | 1000 | 2000 | 4.0 | 7.0 | 0.1 | 11100 |
| 14D 220K | 14 | 18 | 22(20~24) | 43 | | | | 5.0 | 8.0 | | 9100 |
| 14D 270K | 17 | 22 | 27(24~30) | 53 | | | | 6.0 | 10.0 | | 7400 |
| 14D 330K | 20 | 26 | 33(30~36) | 65 | | | | 7.5 | 12.0 | | 6100 |
| 14D 390K | 25 | 31 | 39(35~43) | 77 | | | | 8.6 | 13.0 | | 5100 |
| 14D 470K | 30 | 38 | 47(42~52) | 93 | | | | 10.0 | 17.0 | | 4300 |
| 14D 560K | 35 | 45 | 56(50~62) | 110 | | | | 11.0 | 20.0 | | 3600 |
| 14D 680K | 40 | 56 | 68(61~75) | 135 | | | | 14.0 | 24.0 | | 2900 |
| 14D 820K | 50 | 65 | 82(74~90) | 135 | 50 | 4500 | 6000 | 22.0 | 27.0 | 0.6 | 2400 |
| 14D 101K | 60 | 85 | 100(90~110) | 165 | | | | 28.0 | 33.0 | | 2000 |
| 14D 121K | 75 | 100 | 120(108~132) | 200 | | | | 32.0 | 40.0 | | 1700 |
| 14D 151K | 95 | 125 | 150(135~165) | 250 | | | | 40.0 | 53.0 | | 1300 |
| 14D 181K | 115 | 150 | 180(162~198) | 300 | | | | 50.0 | 60.0 | | 1100 |
| 14D 201K | 130 | 170 | 200(185~225) | 340 | | | | 57.0 | 70.0 | | 1000 |
| 14D 221K | 140 | 180 | 220(198~242) | 360 | | | | 60.0 | 78.0 | | 900 |
| 14D 241K | 150 | 200 | 240(216~264) | 395 | | | | 63.0 | 84.0 | | 830 |
| 14D 271K | 175 | 225 | 270(243~297) | 455 | | | | 70.0 | 99.0 | | 740 |
| 14D 301K | 190 | 250 | 300(270~330) | 500 | | | | 77.0 | 108.0 | | 670 |
| 14D 331K | 210 | 275 | 330(297~363) | 550 | | | | 85.0 | 115.0 | | 610 |
| 14D 361K | 230 | 300 | 360(324~396) | 595 | | | | 93.0 | 130.0 | | 560 |
| 14D 391K | 250 | 320 | 390(351~429) | 650 | | | | 100.0 | 140.0 | | 510 |
| 14D 431K | 275 | 350 | 430(387~473) | 710 | | | | 115.0 | 155.0 | | 460 |
| 14D 471K | 300 | 385 | 470(423~517) | 775 | | | | 125.0 | 175.0 | | 430 |
| 14D511K | 320 | 415 | 510(459~561) | 845 | | | | 125.0 | 180.0 | | 390 |
| 14D 561K | 350 | 460 | 560(504~616) | 925 | | | | 125.0 | 185.0 | | 360 |
| 14D 621K | 385 | 505 | 620(558~682) | 1025 | | | | 125.0 | 190.0 | | 320 |
| 14D 681K | 420 | 560 | 680(612~748) | 1120 | | | | 130.0 | 200.0 | | 290 |
| 14D 751K | 460 | 615 | 750(675~825) | 1240 | | | | 143.0 | 210.0 | | 270 |
| 14D 781K | 485 | 640 | 780(702~858) | 1290 | | | | 148.0 | 220.0 | | 260 |
| 14D 821K | 510 | 670 | 820(738~902) | 1355 | | | | 157.0 | 235.0 | | 240 |
| 14D 911K | 550 | 745 | 910(819~1001) | 1500 | | | | 175.0 | 255.0 | | 220 |
| 14D 102K | 625 | 825 | 1000(900~1100) | 1650 | | | | 190.0 | 280.0 | | 200 |
| 14D 112K | 680 | 895 | 1100(990~1210) | 1815 | 213.0 | 310.0 | 180 | | | | |

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• 20D SPECIFICATION

| Part No. | Maximum Allowable Voltage | | Varistor Voltage V@1ma (V) | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 μ s)(A) | | Maximum Energy (10/1000 s J) | | Rated Power (w) | Typical Capacitance @1KHz (pF) |
|----------|---------------------------|-----------|----------------------------------|-------------------------|-----------|---|------------|---------------------------------|------------|--------------------|--------------------------------------|
| | Acrms (V) | DC (V) | | VC (V) | Ip (A) | standard | high surge | standard | high surge | | |
| 20D 180K | 11 | 14 | 18(16~20) | 36 | 20 | 2000 | 3000 | 11.0 | 13.0 | 0.2 | 28500 |
| 20D 220K | 14 | 18 | 22(20~24) | 43 | | | | 14.0 | 16.0 | | 18500 |
| 20D 270K | 17 | 22 | 27(24~30) | 53 | | | | 16.0 | 19.0 | | 13000 |
| 20D 330K | 20 | 26 | 33(30~36) | 65 | | | | 23.0 | 24.0 | | 11500 |
| 20D 390K | 25 | 31 | 39(35~43) | 77 | | | | 26.0 | 28.0 | | 8500 |
| 20D 470K | 30 | 38 | 47(42~52) | 93 | | | | 30.0 | 34.0 | | 7400 |
| 20D 560K | 35 | 45 | 56(50~62) | 110 | | | | 41.0 | 41.0 | | 6500 |
| 20D 680K | 40 | 56 | 68(61~75) | 135 | | | | 46.0 | 49.0 | | 5800 |
| 20D 820K | 50 | 65 | 82(74~90) | 135 | 100 | 6500 | 10000 | 38.0 | 56.0 | 1.0 | 4900 |
| 20D 101K | 60 | 85 | 100(90~110) | 165 | | | | 45.0 | 70.0 | | 4000 |
| 20D 121K | 75 | 100 | 120(108~132) | 200 | | | | 55.0 | 85.0 | | 3300 |
| 20D 151K | 95 | 125 | 150(135~165) | 250 | | | | 70.0 | 106.0 | | 2700 |
| 20D 181K | 115 | 150 | 180(162~198) | 300 | | | | 85.0 | 130.0 | | 2200 |
| 20D 201K | 130 | 170 | 200(185~225) | 340 | | | | 95.0 | 140.0 | | 2000 |
| 20D 221K | 140 | 180 | 220(198~242) | 360 | | | | 100.0 | 155.0 | | 1800 |
| 20D 241K | 150 | 200 | 240(216~264) | 395 | | | | 108.0 | 168.0 | | 1650 |
| 20D 271K | 175 | 225 | 270(243~297) | 455 | | | | 127.0 | 190.0 | | 1500 |
| 20D 301K | 190 | 250 | 300(270~330) | 500 | | | | 136.0 | 210.0 | | 1300 |
| 20D 331K | 210 | 275 | 330(297~363) | 550 | | | | 150.0 | 228.0 | | 1200 |
| 20D 361K | 230 | 300 | 360(324~396) | 595 | | | | 163.0 | 255.0 | | 1100 |
| 20D 391K | 250 | 320 | 390(351~429) | 650 | | | | 180.0 | 275.0 | | 1000 |
| 20D 431K | 275 | 350 | 430(387~473) | 710 | | | | 190.0 | 305.0 | | 930 |
| 20D 471K | 300 | 385 | 470(423~517) | 775 | | | | 220.0 | 350.0 | | 850 |
| 20D 511K | 320 | 415 | 510(459~561) | 845 | | | | 220.0 | 360.0 | | 780 |
| 20D 561K | 350 | 460 | 560(504~616) | 925 | | | | 220.0 | 380.0 | | 710 |
| 20D 621K | 385 | 505 | 620(558~682) | 1025 | | | | 220.0 | 390.0 | | 650 |
| 20D 681K | 420 | 560 | 680(612~748) | 1120 | | | | 230.0 | 400.0 | | 600 |
| 20D 751K | 460 | 615 | 750(675~825) | 1240 | | | | 255.0 | 420.0 | | 530 |
| 20D 781K | 485 | 640 | 780(702~858) | 1290 | 265.0 | 440.0 | 510 | | | | |
| 20D 821K | 510 | 670 | 820(738~902) | 1355 | 282.0 | 460.0 | 500 | | | | |
| 20D 911K | 550 | 745 | 910(819~1001) | 1500 | 310.0 | 510.0 | 440 | | | | |
| 20D 102K | 625 | 825 | 1000(900~1100) | 1650 | 342.0 | 565.0 | 400 | | | | |
| 20D 112K | 680 | 895 | 1100(990~1210) | 1815 | 383.0 | 620.0 | 360 | | | | |

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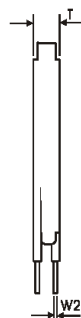
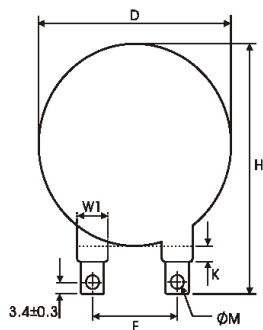
| Part No. | Maximum Allowable Voltage | | Varistor Voltage V @1ma (V) | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 s)(A) | | Max. Energy (10/1000 s J) | Rated Power (w) | Typical Capacitance (Reference) (pF) @1KHz |
|----------|---------------------------|--------|--------------------------------|-------------------------|--------------------|----------------------------------|--------|------------------------------|--------------------|--|
| | AC (V) | DC (V) | | VC (V) | I _p (A) | I _n . | I max. | | | |
| 25D 201K | 130 | 170 | 200(185~225) | 340 | 150 | 10000 | 18000 | 190 | 1.2 | 3200 |
| 25D 221K | 140 | 180 | 220(198~242) | 360 | | | | 2900 | | |
| 25D 241K | 150 | 200 | 240(216~264) | 395 | | | | 2650 | | |
| 25D 271K | 175 | 225 | 270(243~297) | 455 | | | | 2400 | | |
| 25D 301K | 190 | 250 | 300(270~330) | 500 | | | | 2100 | | |
| 25D 331K | 210 | 275 | 330(297~363) | 550 | | | | 1900 | | |
| 25D 361K | 230 | 300 | 360(324~396) | 595 | | | | 1750 | | |
| 25D 391K | 250 | 320 | 390(351~429) | 650 | | | | 1600 | | |
| 25D 431K | 275 | 350 | 430(387~473) | 710 | | | | 1500 | | |
| 25D 471K | 300 | 385 | 470(423~517) | 775 | | | | 1400 | | |
| 25D 511K | 320 | 415 | 510(459~561) | 845 | | | | 1250 | | |
| 25D 561K | 350 | 460 | 560(504~616) | 925 | | | | 1150 | | |
| 25D 621K | 385 | 505 | 620(558~682) | 1025 | | | | 1050 | | |
| 25D 681K | 420 | 560 | 680(612~748) | 1120 | | | | 950 | | |
| 25D 751K | 460 | 615 | 750(675~825) | 1240 | | | | 850 | | |
| 25D 781K | 485 | 640 | 780(702~858) | 1290 | | | | 800 | | |
| 25D 821K | 510 | 670 | 820(738~902) | 1355 | | | | 750 | | |
| 25D 911K | 550 | 745 | 910(819~1001) | 1500 | | | | 700 | | |
| 25D 102K | 625 | 825 | 1000(900~1100) | 1650 | | | | 650 | | |
| 25D 112K | 680 | 895 | 1100(990~1210) | 1815 | | | | 600 | | |

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| Part No. | Maximum Allowable Voltage | | Varistor Voltage V @1ma (V) | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 s)(A) | | Max. Energy (10/1000 s J) | Rated Power (w) | Typical Capacitance (Reference) (pF) @1KHz |
|----------|---------------------------|--------|--------------------------------|-------------------------|--------------------|----------------------------------|--------|------------------------------|--------------------|--|
| | AC (V) | DC (V) | | VC (V) | I _p (A) | I _n | I max. | | | |
| 32D 201K | 130 | 170 | 200(185~225) | 340 | 200 | 15000 | 25000 | 250 | 1.4 | 5200 |
| 32D 221K | 140 | 180 | 220(198~242) | 360 | | | | 270 | | 5150 |
| 32D 241K | 150 | 200 | 240(216~264) | 395 | | | | 290 | | 5100 |
| 32D 271K | 175 | 225 | 270(243~297) | 455 | | | | 300 | | 4800 |
| 32D 301K | 190 | 250 | 300(270~330) | 500 | | | | 330 | | 4500 |
| 32D 331K | 210 | 275 | 330(297~363) | 550 | | | | 360 | | 4300 |
| 32D 361K | 230 | 300 | 360(324~396) | 595 | | | | 380 | | 3900 |
| 32D 391K | 250 | 320 | 390(351~429) | 650 | | | | 400 | | 3200 |
| 32D 431K | 275 | 350 | 430(387~473) | 710 | | | | 430 | | 3100 |
| 32D 471K | 300 | 385 | 470(423~517) | 775 | | | | 460 | | 2800 |
| 32D 511K | 320 | 415 | 510(459~561) | 845 | | | | 510 | | 2700 |
| 32D 561K | 350 | 460 | 560(504~616) | 920 | | | | 570 | | 2400 |
| 32D 621K | 385 | 505 | 620(558~682) | 1025 | | | | 600 | | 2200 |
| 32D 681K | 420 | 560 | 680(612~748) | 1120 | | | | 620 | | 2000 |
| 32D 751K | 460 | 615 | 750(675~825) | 1240 | | | | 660 | | 1900 |
| 32D 781K | 485 | 640 | 780(702~858) | 1290 | | | | 700 | | 1800 |
| 32D 821K | 510 | 670 | 820(738~902) | 1355 | | | | 750 | | 1300 |
| 32D 911K | 550 | 745 | 910(819~1001) | 1500 | | | | 780 | | 1200 |
| 32D 102K | 625 | 825 | 1000(900~1100) | 1650 | | | | 810 | | 1100 |
| 32D 112K | 680 | 895 | 1100(990~1210) | 1815 | | | | 910 | | 1000 |
| 32D 122K | 750 | 990 | 1200(1080~1320) | 1980 | 960 | 920 | | | | |



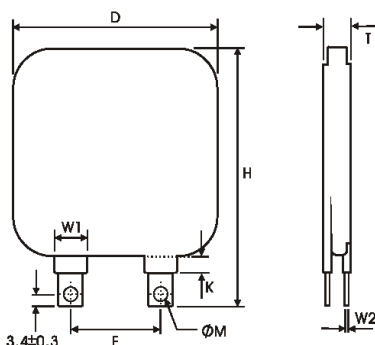
| | (mm) |
|--------|-------------------------------|
| D Max. | 38.0 |
| H Max. | 56.3 |
| W1±0.5 | 7.0 |
| W2±0.1 | 0.5 |
| M±0.2 | 3.8 |
| F±1.0 | 25.4 |
| T Max | Please check dimensions chart |
| K | ≤ 5.0 |

Metal Oxide Varistors

MVR Series

MERITEK

| Part No. | Maximum Allowable Voltage | | Varistor Voltage V @1ma (V) | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 s)(A) | | Max. Energy (10/1000 s J) | Rated Power (w) | Typical Capacitance (Reference) (pF) @1KHz |
|----------|---------------------------|--------|--------------------------------|-------------------------|--------------------|----------------------------------|--------|------------------------------|--------------------|--|
| | AC (V) | DC (V) | | VC (V) | I _p (A) | I _n | I max. | | | |
| 34S 201K | 130 | 170 | 200(185~225) | 340 | 300 | 20000 | 40000 | 400 | 1.4 | 6750 |
| 34S 221K | 140 | 180 | 220(198~242) | 360 | | | | 6400 | | |
| 34S 241K | 150 | 200 | 240(216~264) | 395 | | | | 5650 | | |
| 34S 271K | 175 | 225 | 270(243~297) | 455 | | | | 5100 | | |
| 34S 301K | 190 | 250 | 300(270~330) | 500 | | | | 4510 | | |
| 34S 331K | 210 | 275 | 330(297~363) | 550 | | | | 4150 | | |
| 34S 361K | 230 | 300 | 360(324~396) | 595 | | | | 3750 | | |
| 34S 391K | 250 | 320 | 390(351~429) | 650 | | | | 3500 | | |
| 34S 431K | 275 | 350 | 430(387~473) | 710 | | | | 2950 | | |
| 34S 471K | 300 | 385 | 470(423~517) | 775 | | | | 2880 | | |
| 34S 511K | 320 | 415 | 510(459~561) | 845 | | | | 2650 | | |
| 34S 561K | 350 | 460 | 560(504~616) | 925 | | | | 2450 | | |
| 34S 621K | 385 | 505 | 620(558~682) | 1025 | | | | 2200 | | |
| 34S 681K | 420 | 560 | 680(612~748) | 1120 | | | | 2000 | | |
| 34S 751K | 460 | 615 | 750(675~825) | 1240 | | | | 1820 | | |
| 34S 781K | 485 | 640 | 780(702~858) | 1290 | | | | 1750 | | |
| 34S 821K | 510 | 670 | 820(738~902) | 1355 | | | | 1650 | | |
| 34S 911K | 550 | 745 | 910(819~1001) | 1500 | | | | 1500 | | |
| 34S 951K | 575 | 760 | 950(855~1045) | 1500 | | | | 1430 | | |
| 34S 102K | 625 | 825 | 1000(900~1100) | 1650 | | | | 1350 | | |
| 34S 112K | 680 | 895 | 1100(990~1210) | 1815 | 1230 | | | | | |
| 34S 122K | 750 | 990 | 1200(1150~1320) | 1980 | 1135 | | | | | |



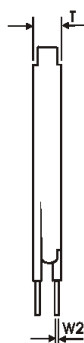
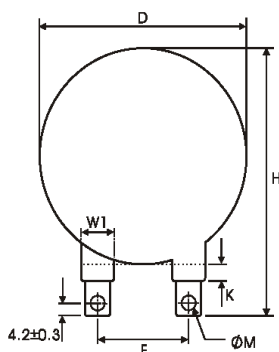
| (mm) | |
|--------|-------------------------------|
| D Max. | 36 |
| H Max. | 41 |
| W1±0.5 | 7.0 |
| W2±0.1 | 0.5 |
| M±0.2 | 3.8 |
| F±1.0 | 25.4 |
| T Max | Please check dimensions chart |
| K | ≤ 5.0 |

Metal Oxide Varistors

MVR Series

MERITEK

| Part No. | Maximum Allowable Voltage | | Varistor Voltage V @1ma (V) | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 s)(A) | | Max. Energy (10/1000 s J) | Rated Power (w) | Typical Capacitance (Reference) (pF) @1KHz |
|----------|---------------------------|--------|--------------------------------|-------------------------|--------------------|----------------------------------|--------|------------------------------|--------------------|--|
| | AC (V) | DC (V) | | VC (V) | I _p (A) | I _n | I max. | | | |
| 53D 201K | 130 | 170 | 200(185~225) | 340 | 500 | 30000 | 60000 | 550 | 1.6 | 15000 |
| 53D 221K | 140 | 180 | 220(198~242) | 360 | | | | 600 | | 13750 |
| 53D 241K | 150 | 200 | 240(216~264) | 395 | | | | 650 | | 12500 |
| 53D 271K | 175 | 225 | 270(243~297) | 455 | | | | 700 | | 11000 |
| 53D 301K | 190 | 250 | 300(270~330) | 500 | | | | 760 | | 10000 |
| 53D 331K | 210 | 275 | 330(297~363) | 550 | | 35000 | 70000 | 825 | | 9000 |
| 53D 361K | 230 | 300 | 360(324~396) | 595 | | | | 850 | | 8500 |
| 53D 391K | 250 | 320 | 390(351~429) | 650 | | | | 885 | | 7500 |
| 53D 431K | 275 | 350 | 430(387~473) | 710 | | | | 990 | | 7000 |
| 53D 471K | 300 | 385 | 470(423~517) | 775 | | | | 1080 | | 6500 |
| 53D511K | 320 | 415 | 510(459~561) | 845 | | | | 1150 | | 6000 |
| 53D 561K | 350 | 460 | 560(504~616) | 925 | | | | 1230 | | 5500 |
| 53D 621K | 385 | 505 | 620(558~682) | 1025 | | | | 1300 | | 5000 |
| 53D 681K | 420 | 560 | 680(612~748) | 1120 | | | | 1350 | | 4500 |
| 53D 751K | 460 | 615 | 750(675~825) | 1240 | | | | 1400 | | 4000 |
| 53D 781K | 485 | 640 | 780(702~858) | 1290 | | | | 1450 | | 3900 |
| 53D 821K | 510 | 670 | 820(738~902) | 1355 | | | | 1600 | | 3700 |
| 53D 911K | 550 | 745 | 910(819~1001) | 1500 | | | | 1700 | | 3300 |
| 53D 102K | 625 | 825 | 1000(900~1100) | 1650 | | | | 1890 | | 3000 |
| 53D 112K | 680 | 895 | 1100(990~1210) | 1815 | | | | 2050 | | 2700 |
| 53D 122K | 750 | 990 | 1200(1080~1320) | 1980 | 2050 | 2500 | | | | |



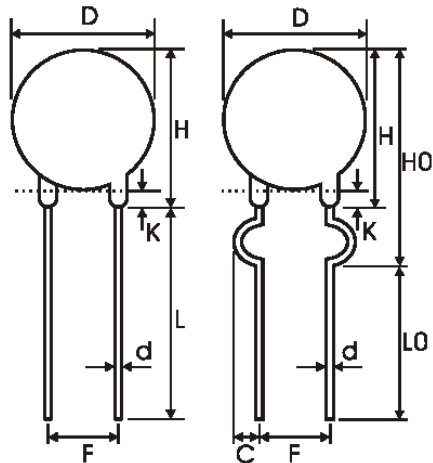
| | (mm) |
|--------|-------------------------------|
| D Max. | 60 |
| H Max. | 78.2 |
| W1±0.5 | 9.7 |
| W2±0.1 | 0.7 |
| M±0.2 | 4.15 |
| F±1.0 | 25.4 |
| T Max | Please check dimensions chart |
| K | ≤ 5.0 |

Metal Oxide Varistors

MVR Series

MERITEK

Dimensions:



K: 3.0 max. L0: 15.0 min. L: 20.0 min.

T Thickness (max)

(Unit:mm)

| Part Code | 05D | 07D | 10D | 14D | 20D | 25D | 32D | 34S | 53D |
|-----------|-----|-----|-----|-----|------|------|------|------|------|
| 180K | 4.5 | 4.5 | 4.6 | 4.6 | 4.8 | | | | |
| 220K | 4.6 | 4.6 | 4.7 | 4.7 | 4.9 | | | | |
| 270K | 4.7 | 4.7 | 4.8 | 4.8 | 5.3 | | | | |
| 330K | 4.9 | 4.9 | 5.0 | 5.0 | 5.5 | | | | |
| 390K | 4.8 | 4.8 | 5.3 | 5.3 | 5.5 | | | | |
| 470K | 4.9 | 4.9 | 5.4 | 5.4 | 5.6 | | | | |
| 560K | 5.0 | 5.0 | 5.5 | 5.5 | 5.7 | | | | |
| 680K | 5.2 | 5.2 | 5.6 | 5.6 | 5.8 | | | | |
| 820K | 4.1 | 4.1 | 4.7 | 4.7 | 4.9 | | | | |
| 101K | 4.3 | 4.3 | 4.9 | 4.9 | 5.1 | | | | |
| 121K | 4.5 | 4.5 | 5.1 | 5.1 | 5.3 | | | | |
| 151K | 4.8 | 4.8 | 5.4 | 5.4 | 5.6 | | | | |
| 181K | 4.3 | 4.3 | 4.8 | 4.8 | 5.0 | | | | |
| 201K | 4.4 | 4.4 | 5.0 | 5.0 | 5.2 | 5.4 | 6.2 | 6.4 | 6.3 |
| 221K | 4.5 | 4.5 | 5.1 | 5.1 | 5.3 | 5.5 | 6.3 | 6.6 | 6.4 |
| 241K | 4.6 | 4.6 | 5.2 | 5.2 | 5.4 | 5.6 | 6.4 | 6.7 | 6.5 |
| 271K | 4.9 | 4.9 | 5.4 | 5.4 | 5.6 | 5.8 | 6.6 | 6.9 | 6.7 |
| 301K | 5.0 | 5.0 | 5.5 | 5.5 | 5.7 | 5.9 | 6.8 | 7.1 | 6.8 |
| 331K | 5.1 | 5.1 | 5.8 | 5.8 | 6.0 | 6.1 | 6.9 | 7.3 | 7.0 |
| 361K | 5.2 | 5.2 | 6.0 | 6.0 | 6.2 | 6.6 | 7.3 | 7.6 | 7.2 |
| 391K | 5.4 | 5.4 | 6.2 | 6.2 | 6.4 | 6.8 | 7.5 | 7.8 | 7.4 |
| 431K | 5.7 | 5.7 | 6.5 | 6.5 | 6.7 | 7.0 | 7.8 | 8.0 | 7.6 |
| 471K | 6.0 | 6.0 | 6.7 | 6.7 | 6.9 | 7.3 | 8.0 | 8.3 | 7.9 |
| 511K | 6.2 | 6.2 | 6.8 | 6.8 | 7.0 | 7.4 | 8.0 | 8.7 | 8.1 |
| 561K | 6.5 | 6.5 | 7.0 | 7.0 | 7.2 | 7.6 | 8.0 | 9.0 | 8.5 |
| 621K | | | 7.1 | 7.3 | 7.5 | 8.0 | 8.0 | 9.4 | 8.8 |
| 681K | | | 7.3 | 7.6 | 7.8 | 8.2 | 9.2 | 9.5 | 9.1 |
| 751K | | | 8.0 | 8.0 | 8.2 | 8.5 | 9.0 | 10.0 | 9.5 |
| 781K | | | 8.1 | 8.1 | 8.3 | 8.5 | 9.0 | 10.2 | 9.7 |
| 821K | | | 8.3 | 8.3 | 8.5 | 9.0 | 9.0 | 10.8 | 9.9 |
| 911K | | | 8.8 | 8.8 | 9.0 | 9.5 | 10.0 | 11.2 | 10.5 |
| 102K | | | 9.3 | 9.3 | 9.5 | 9.7 | 11.2 | 11.2 | 11.3 |
| 112K | | | 9.9 | 9.9 | 10.1 | 10.3 | 11.8 | 12.3 | 11.9 |

| | D MAX | H MAX | H0 MAX | d ±0.1 | F ±1.0 | C ±0.4 |
|-----|----------|----------|-----------|-----------|-----------|-----------|
| 05D | 7.5 | 10.5 | 13.0 | 0.6 | 5 | 1.2 |
| 07D | 9 | 12 | 13.5 | 0.6 | 5 | 1.2 |
| 10D | 12.5 | 16.5 | 17.5 | 0.8 | 7.5 | 1.4 |
| 14D | 16.5 | 20 | 21 | 0.8 | 7.5 | 1.4 |
| 20D | 23 | 26.5 | 28 | 1.0 | 10 | 1.4 |
| 25D | 28 | 32 | | 1.0 | 10 | |