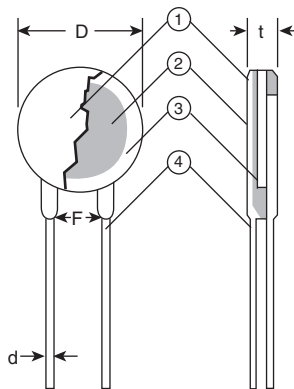




features

- Flame retardant coating (UL94V0)
- Excellent transient voltage suppression characteristics
- Higher surge current
- Wide varistor voltage
- V-I characteristics are the same in both polarity
- Marking: Green body color with black marking
- UL1449 (3rd Edition) (file no. E328032) NVD05, NVD07: 82~470V, NVD10: 82~1100V, NVD14: 82~910V, NVD20: 200~910V
- VDE (CECC42000, CECC42200, CECC42201, IEC61051: file no. 40015637) NVD05U, NDV07U: 22~470V, NVD10U: 22~1100V, NVD14U: 22~910V
- Products with lead-free terminations meet EU RoHS requirements

dimensions and construction



Contact KOA Speer for detailed dimensions.

| Type | Dimensions inches (mm) | | | |
|------|------------------------------|---------------|------------------------|---------------------------|
| | øD (max.)* | ød | F | t (max.)* |
| 05U | .276 - .295 (7.0 - 7.5) | .024 (0.6) | .197±.039 (5.0±1.0) | .169±.232 (4.3 - 5.9) |
| 07U | .276 - .374 (9.0 - 9.5) | | | |
| 10U | .472 - .531 (12.0 - 13.5) | .031 (0.8) | .295±.039 (7.5±1.0) | .169±.567 (4.3 - 14.4) |
| 10UB | .472 (12.0) | .024 (0.6) | .197±.039 (5.0±1.0) | .169±.209 (4.3 - 5.3) |
| 14U | .630 - .669 (16.0 - 17.0) | .031 (0.8) | .295±.039 (7.5±1.0) | .169±.567 (4.3 - 14.4) |
| 20U | .91 - .94 (23.0 - 24.0) | .039 (1.0) | .394±.039 (10±1.0) | .205±.354 (5.2 - 9.0) |

* D max. and t ma. vary according to the varistor voltage

ordering information

| | | | | | | | | | |
|------------|-----------|----------|----------------------------|---|----------------------|-------------------------------|--|-----------|-----------------------------------|
| New Part # | NV | D | 05 | U | C | D | MHT | A | 220 |
| Type | Disc | Style | Diameter | Series | Termination Material | Inner Connect Solder Material | Taping | Packaging | Varistor Voltage |
| | | | 05 07 10 14 20 | S: S series U: U series UB: U series 5mm pitch (D10 only) | C: Sn-Cu | D: SnAgCu Blank: SnPb | MT:5mm straight taping MHT:5mm inside kink taping 10UB:GHT: 7.5mm straight taping GJT: 7.5mm outside kink taping MJT:5mm outside kink taping 10UC: MJT: 7.5mm outside kink taping | A: Ammo | 22V 022 220V 220 1800V 1800 |

For further information on packaging, please refer to Appendix C.

circuit protection

applications and ratings

| Type | Varistor Voltage Vc Ic = 0.1mA (V) | Maximum Allowable Voltage | | NVD05UC | | | | NVD07UC | | | |
|------------|---------------------------------------|---------------------------|----------|-------------------------------|--|------------------|-----|-------------------------------|--|------------------|------|
| | | a.c. r.m.s. (v) | d.c. (v) | Maximum (2ms) Energy E (J) | Max. Peak Current (2 pulses) Ip (A) | Clamping Voltage | | Maximum (2ms) Energy E (J) | Max. Peak Current (2 pulses) Ip (A) | Clamping Voltage | |
| | | | | | | V1A | V5A | | | V2.5A | V10A |
| NVD□SCD018 | 16 - 22 | 11 | 14 | 0.3 | 50 | 40 | — | — | — | — | — |
| NVD□UCD022 | 20 - 27 | 14 | 18 | 0.5 | 125 | 48 | — | 1.1 | 250 | 43 | — |
| NVD□UCD027 | 25 - 32 | 17 | 22 | 0.7 | | 60 | — | 1.3 | | 53 | — |
| NVD□UCD033 | 30 - 39 | 20 | 26 | 0.8 | | 73 | — | 1.6 | | 65 | — |
| NVD□UCD039 | 37 - 47 | 25 | 31 | 0.9 | | 86 | — | 1.9 | | 77 | — |
| NVD□UCD047 | 45 - 54 | 30 | 38 | 1.1 | | 104 | — | 2.3 | | 93 | — |
| NVD□UCD056 | 52 - 62 | 35 | 45 | 1.3 | | 123 | — | 2.7 | | 110 | — |
| NVD□UCD068 | 60 - 76 | 40 | 56 | 1.6 | | 150 | — | 3.3 | | 135 | — |
| NVD□SCD082 | 74 - 90 | 50 | 65 | 1.7 | | 200 | — | 145 | | 3.5 | 600 |
| NVD□UCD100 | 90 - 110 | 60 | 85 | 3.0 | 600 | — | 175 | 6.0 | 1250 | — | 165 |
| NVD□UCD120 | 108 - 132 | 75 | 100 | 3.5 | | — | 210 | 7.0 | | — | 200 |
| NVD□UCD150 | 135 - 165 | 95 | 125 | 4.5 | | — | 260 | 9.0 | | — | 250 |
| NVD□UCD200 | 185 - 225 | 130 | 170 | 6.0 | | — | 355 | 12.5 | | — | 340 |
| NVD□UCD220 | 198 - 242 | 140 | 180 | 6.5 | | — | 380 | 13.5 | | — | 360 |
| NVD□UCD240 | 216 - 264 | 150 | 200 | 7.5 | | — | 415 | 15.0 | | — | 395 |
| NVD□UCD270 | 247 - 303 | 175 | 225 | 8.0 | | — | 475 | 17.0 | | — | 455 |
| NVD□UCD330 | 297 - 363 | 210 | 270 | 9.5 | | — | 570 | 20.0 | | — | 545 |
| NVD□UCD360 | 342 - 396 | 230 | 300 | 11.0 | | — | 620 | 23.0 | | — | 595 |
| NVD□UCD390 | 367 - 429 | 250 | 320 | 12.0 | | — | 675 | 25.0 | | — | 650 |
| NVD□UCD430 | 407 - 473 | 275 | 350 | 13.5 | | — | 745 | 27.5 | | — | 710 |
| NVD□UCD470 | 437 - 517 | 300 | 385 | 15.0 | | — | 810 | 30.0 | | — | 775 |

□ Add disk diameter

| Type | Varistor Voltage Vc Ic = 0.1mA (V) | Maximum Allowable Voltage | | NVD10UC - NVD10UCB* | | | | NVD14UC** | | | | NVD20UC | | | | | | |
|------------|---------------------------------------|---------------------------|----------|----------------------------|--|------------------|------|----------------------------|--|------------------|------|----------------------------|--|---------------------------|------|---|-----|---|
| | | a.c. r.m.s. (v) | d.c. (v) | Max. (2ms) Energy E (J) | Max. Peak Current (2 pulses) Ip (A) | Clamping Voltage | | Max. (2ms) Energy E (J) | Max. Peak Current (2 pulses) Ip (A) | Clamping Voltage | | Max. (2ms) Energy E (J) | Max. Peak Current (2 pulses) Ip (A) | Clamping Voltage V100A | | | | |
| | | | | | | V5A | V25A | | | V10A | V50A | | | | | | | |
| NVD□SCD018 | 16 - 22 | 11 | 14 | — | — | — | — | — | — | — | — | — | — | | | | | |
| NVD□UCD022 | 20 - 27 | 14 | 18 | 2.6 | 500 | 43 | — | 5.3 | 1000 | 43 | — | — | — | | | | | |
| NVD□UCD027 | 25 - 32 | 17 | 22 | 3.2 | | 53 | — | 6.5 | | 53 | — | — | — | — | | | | |
| NVD□UCD033 | 30 - 39 | 20 | 26 | 4.0 | | 65 | — | 7.9 | | 65 | — | — | — | — | | | | |
| NVD□UCD039 | 37 - 47 | 25 | 31 | 4.4 | | 77 | — | 9.4 | | 77 | — | — | — | — | | | | |
| NVD□UCD047 | 45 - 54 | 30 | 38 | 5.7 | | 93 | — | 11.0 | | 93 | — | — | — | — | | | | |
| NVD□UCD056 | 52 - 62 | 35 | 45 | 6.7 | | 110 | — | 13.0 | | 110 | — | — | — | — | | | | |
| NVD□UCD068 | 60 - 76 | 40 | 56 | 8.2 | | 135 | — | 16.0 | | 135 | — | — | — | — | | | | |
| NVD□SCD082 | 74 - 90 | 50 | 65 | 8.0 | | 1250 | — | 135 | | 14.0 | 2500 | — | 135 | — | — | | | |
| NVD□UCD100 | 90 - 110 | 60 | 85 | 12.0 | 2500 | — | 165 | 18.0 | 5000 | — | 165 | — | — | | | | | |
| NVD□UCD120 | 108 - 132 | 75 | 100 | 14.5 | | — | 200 | 30.0 | | — | 200 | — | — | — | — | | | |
| NVD□UCD150 | 135 - 165 | 95 | 125 | 18.0 | | — | 250 | 37.5 | | — | 250 | — | — | — | — | | | |
| NVD□UCD200 | 185 - 225 | 130 | 170 | 25.0 | | — | 340 | 50.0 | | — | 340 | 100 | 7000 | — | 340 | | | |
| NVD□UCD220 | 198 - 242 | 140 | 180 | 27.5 | | — | 360 | 55.0 | | — | 360 | 110 | | — | 360 | — | | |
| NVD□UCD240 | 216 - 264 | 150 | 200 | 30.0 | | — | 395 | 60.0 | | — | 395 | 120 | | — | 395 | — | | |
| NVD□UCD270 | 247 - 303 | 175 | 225 | 35.0 | | — | 455 | 70.0 | | — | 455 | 135 | | — | 455 | — | | |
| NVD□UCD330 | 297 - 363 | 210 | 270 | 42.0 | | 4500 | — | 545 | | 80.0 | 4500 | — | 545 | — | — | | | |
| NVD□UCD360 | 342 - 396 | 230 | 300 | 45.0 | | | — | 595 | | 90.0 | | — | 595 | 180 | 6500 | — | 595 | |
| NVD□UCD390 | 367 - 429 | 250 | 320 | 50.0 | | | — | 650 | | 100.0 | | — | 650 | 195 | | — | 650 | — |
| NVD□UCD430 | 407 - 473 | 275 | 350 | 55.0 | | | — | 710 | | 110.0 | | — | 710 | 215 | | — | 710 | — |
| NVD□UCD470 | 437 - 517 | 300 | 385 | 60.0 | | | — | 775 | | 125.0 | | — | 775 | 250 | | — | 775 | — |

□ Add disk diameter

* Manufacturing range of NVD10UCB is varistor voltages 22 - 270

** NVD14C100 is applied

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

11/21/08

applications and ratings (continued)

| Type | Varistor Voltage Vc Ic = 0.1mA (V) | Maximum Allowable Voltage | | NVD10UC - NVD10UC* | | | NVD14UC** | | | | NVD20UC | | | | |
|-------------|---------------------------------------|---------------------------|-------------|----------------------|------------------------------------|---------------------|----------------------|------------------------------------|---------------------|----------------------|------------------------------------|---------------------|--------|-------|------|
| | | a.c. r.m.s. (v) | d.c. (v) | Max. (2ms) Energy | Max. Peak Current (2 pulses) | Clamping Voltage | Max. (2ms) Energy | Max. Peak Current (2 pulses) | Clamping Voltage | Max. (2ms) Energy | Max. Peak Current (2 pulses) | Clamping Voltage | | | |
| | | | | E (J) | Ip (A) | V5A | V25A | E (J) | Ip (A) | V10A | V50A | E (J) | Ip (A) | V100A | |
| NVD□UCD510 | 474 - 561 | 320 | 410 | 67.0 | 2500 | — | 845 | 136.0 | 4500 | — | 845 | — | 6500 | — | |
| NVD□UCD620 | 577 - 682 | 380 | 505 | 67.0 | | — | 1025 | 136.0 | | — | 1025 | 273 | | — | 1025 |
| NVD□UCD680 | 637 - 748 | 420 | 560 | 67.0 | | — | 1120 | 136.0 | | — | 1120 | 273 | | — | 1120 |
| NVD□UCD750 | 697 - 825 | 460 | 615 | 70.0 | | — | 1240 | 150.0 | | — | 1240 | 300 | | — | 1240 |
| NVD□UCD780 | 737 - 858 | 485 | 640 | 70.0 | | — | 1290 | 150.0 | | — | 1290 | 300 | | — | 1290 |
| NVD□UCD820 | 767 - 902 | 510 | 670 | 80.0 | | — | 1355 | 165.0 | | — | 1355 | 325 | | — | 1355 |
| NVD□UCD910 | 857 - 1000 | 550 | 745 | 90.0 | | — | 1500 | 180.0 | | — | 1500 | 360 | | — | 1500 |
| NVD□UCD1100 | 1070 - 1210 | 680 | 895 | 110.0 | | — | 1815 | — | | — | — | — | | — | — |
| NVD□UCD1800 | 1700 - 1980 | 1000 | 1465 | 183.0 | | — | 2970 | 360.0 | | — | 2970 | — | | — | — |

□ Add disk diameter

* Manufacturing range of NVD10UCB is varistor voltages 22 - 270

** NVD14C100 is applied

environmental applications

Performance Characteristics

| Parameter | Requirement Δ V±% | Test Method | | | | | | |
|---|------------------------------|---|----|------|-------|----------|-----|---------------------|
| Varistor Voltage | Within specified tolerance | Voltage between terminals when the specified current is flowed <table border="1"> <tr> <th>Ic</th> <th>Type</th> </tr> <tr> <td>0.1mA</td> <td>NVD05UCD</td> </tr> <tr> <td>1mA</td> <td>NVD07UCD - NVD20UCD</td> </tr> </table> | Ic | Type | 0.1mA | NVD05UCD | 1mA | NVD07UCD - NVD20UCD |
| Ic | Type | | | | | | | |
| 0.1mA | NVD05UCD | | | | | | | |
| 1mA | NVD07UCD - NVD20UCD | | | | | | | |
| Solderability | 95% coverage minimum | 230°C ± 5°C, 5 seconds ± 0.5 second / 250°C ± 5°C, 5 seconds ± 0.5 second (Pb free) | | | | | | |
| Resistance to Solder Heat | No abnormality in appearance | 260°C ± 5°C, 10 seconds ± 1 second | | | | | | |
| Rapid Change of Temperature | No abnormality in appearance | -40°C (30 minutes)/ +125°C (30 minutes), 5 cycles, except NVD20UCD -40°C (30 minutes)/ +85°C (30 minutes), 5 cycles: NVD20UCD | | | | | | |
| Maximum Peak Current | ±10% | Rated impulse current of (T=8/20μs), positive/negative applied once each | | | | | | |
| Maximum Energy | ±10% | A single standard impulse of 2ms, once | | | | | | |
| High Temperature Life with d.c. Bias | ±10% | 85°C ± 5°C, Vc=(Vd.c.) 1000h Load: maximum allowable circuit voltage (d.c.) | | | | | | |
| High Temperature Life with a.c. Bias | ±10% | 85°C ± 5°C, Vc=(Va.c.r.m.s.) 1000h Load: maximum allowable circuit voltage (d.c.) | | | | | | |
| High Temperature & High Humidity Life with Bias | ±5% | 80°C ± 5°C, 95% RH, 1000h | | | | | | |
| High Temperature Storage Life | ±5% | 125°C ± 5°C, 1000h | | | | | | |
| Low Temperature Storage Life | ±5% | -40°C ± 5°C, 1000h | | | | | | |

For Typical Characteristics Graphs see Environmental Applications. Additional environmental applications can also be found at www.koaspeer.com

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

11/23/14

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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