

# ANTREX Electronics

Electronic Components Sourcing Information

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## Product Reference Information

**Part Number:** NV73A2ATTE47  
**Manufacturer:** KOA Speer Electronics, Inc.  
**Package:** 0805 (2012 Metric)  
**Availability:** Please confirm with sales

### Product Page:

<https://antrexco.com/product/details/koa-speer-electronics-inc/nv73a2atte47.html>

### Request a Quote:

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## Contact Information

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Website: <https://antrexco.com>

## Quality & Trust

New & Original Components

Supplier verification and packaging condition review

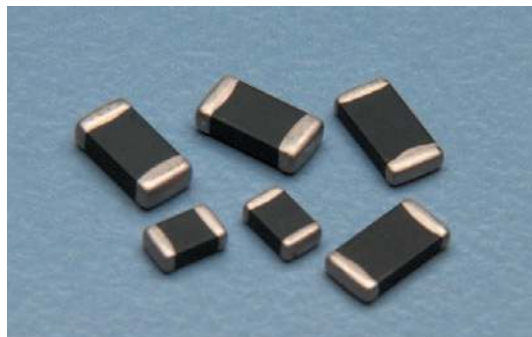
CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

### Note:

This PDF includes an ANTREX product reference cover page.

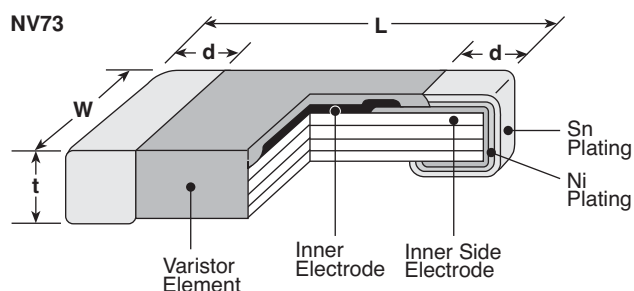
The original manufacturer datasheet follows from the next page.



## features

- Varistors own two-way symmetries and can absorb positive and negative surges
- Multilayer construction allows its small size to absorb a large surge
- Small space and high density mounting available due to the small package
- Suitable for both flow and reflow solderings
- Products with lead free termination meet EU RoHS requirements

## dimensions and construction



| Type<br>(Inch Size Code) | Dimensions inches (mm)  |                         |                          |                                                                                        |
|--------------------------|-------------------------|-------------------------|--------------------------|----------------------------------------------------------------------------------------|
|                          | L                       | W                       | t                        | d                                                                                      |
| <b>1J</b><br>(0603)      | .063±.006<br>(1.6±0.15) | .031±.006<br>(0.8±0.15) | .031±.006<br>(0.8±0.15)  | .016 <sup>+0.006</sup> / <sub>-.008</sub><br>(0.4 <sup>+0.15</sup> / <sub>-.02</sub> ) |
| <b>2A</b><br>(0805)      | .079±.008<br>(2.0±0.2)  | .049±.008<br>(1.25±0.2) | .051 max.<br>(1.3 max.)  | .02±.010<br>(0.5±0.25)                                                                 |
| <b>2B</b><br>(1206)      | .126±.008<br>(3.2±0.2)  | .063±.008<br>(1.6±0.2)  | .065 max.<br>(1.65 max.) | .02 <sup>+0.014</sup> / <sub>-.010</sub><br>(0.5 <sup>+0.35</sup> / <sub>-.025</sub> ) |

## ordering information

|             |             |                                  |                      |                                                |                  |
|-------------|-------------|----------------------------------|----------------------|------------------------------------------------|------------------|
| <b>NV73</b> | <b>A</b>    | <b>1J</b>                        | <b>T</b>             | <b>TE</b>                                      | <b>12</b>        |
| Type        | Energy Code | Size                             | Termination Material | Packaging                                      | Varistor Voltage |
|             | A<br>B<br>C | 1J: 0603<br>2A: 0805<br>2B: 1206 | T: Sn                | TE: 7" embossed plastic<br>(2,500 pieces/reel) |                  |

The terminal surface material lead free is standard.

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.

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

### applications and ratings

| Part Designation | Varistor Voltage Vc      | Maximum Allowable Voltage |         | Clamping Voltage |                 | Maximum Energy E (J) | Maximum Peak Current I <sub>P</sub> (A) (2 times) | Operating Temp. T <sub>opt</sub> (°C) | Storage Temp. T <sub>stg</sub> (°C) |
|------------------|--------------------------|---------------------------|---------|------------------|-----------------|----------------------|---------------------------------------------------|---------------------------------------|-------------------------------------|
|                  | I <sub>c</sub> = 1mA (V) | a.c rms (V)               | d.c (V) | V <sub>1A</sub>  | V <sub>2A</sub> |                      |                                                   |                                       |                                     |
| NV73A1JTTE8.2    | 6.8 - 9.8                | 4.2                       | 6.0     | —                | 21              | 0.1                  | 30                                                | -40°C to +85°C                        | -40°C to +125°C                     |
| NV73A1JTTE12     | 10 - 14.4                | 6.1                       | 8.6     | —                | 29              |                      |                                                   |                                       |                                     |
| NV73A1JTTE15     | 12.5 - 18                | 7.6                       | 10.8    | —                | 35              |                      |                                                   |                                       |                                     |
| NV73A1JTTE18     | 16 - 20                  | 9.1                       | 12.8    | —                | 37              |                      |                                                   |                                       |                                     |
| NV73A1JTTE20     | 18 - 22                  | 10.6                      | 15.0    | —                | 40              |                      |                                                   |                                       |                                     |
| NV73A1JTTE22     | 19 - 24                  | 12.0                      | 16.5    | —                | 42              |                      |                                                   |                                       |                                     |
| NV73A1JTTE24     | 21.8 - 26.5              | 14.0                      | 18.0    | —                | 46              |                      |                                                   |                                       |                                     |
| NV73A1JTTE27     | 25 - 32                  | 17.0                      | 22.0    | —                | 49              | 0.01                 | 10                                                |                                       |                                     |
| NV73A2ATTE8.2    | 6.8 - 9.8                | 4.2                       | 6.0     | 18               | —               |                      | 0.03                                              |                                       |                                     |
| NV73A2ATTE12     | 10 - 14.4                | 6.1                       | 8.6     | 24               | —               | 0.04                 |                                                   |                                       |                                     |
| NV73A2ATTE15     | 12.5 - 18                | 7.6                       | 10.8    | 29               | —               |                      | 0.05                                              |                                       |                                     |
| NV73A2ATTE18     | 16 - 20                  | 9.1                       | 12.8    | 29               | —               | 0.06                 |                                                   |                                       |                                     |
| NV73A2ATTE20     | 18 - 22                  | 10.6                      | 15.0    | 33               | —               |                      | 0.07                                              |                                       |                                     |
| NV73A2ATTE22     | 19 - 24                  | 12.0                      | 16.5    | 39               | —               | 0.12                 |                                                   |                                       |                                     |
| NV73A2ATTE24     | 21.8 - 26.5              | 14.0                      | 18.0    | 42               | —               |                      | 0.14                                              |                                       |                                     |
| NV73A2ATTE27     | 25 - 32                  | 17.0                      | 22.0    | 50               | —               | 0.16                 |                                                   |                                       |                                     |
| NV73A2ATTE33     | 30 - 39                  | 20.0                      | 26.0    | 60               | —               |                      | 0.03                                              |                                       |                                     |
| NV73A2ATTE39     | 37 - 47                  | 25.0                      | 31.0    | 72               | —               | 0.05                 |                                                   |                                       |                                     |
| NV73A2ATTE47     | 45 - 54                  | 30.0                      | 38.0    | 86               | —               |                      | 0.07                                              |                                       |                                     |
| NV73B2ATTE8.2    | 6.8 - 9.8                | 4.2                       | 6.0     | —                | 18              | 0.08                 |                                                   |                                       |                                     |
| NV73B2ATTE12     | 10 - 14.4                | 6.1                       | 8.6     | —                | 24              |                      | 0.09                                              |                                       |                                     |
| NV73B2ATTE15     | 12.5 - 18                | 7.6                       | 10.8    | —                | 30              | 0.11                 |                                                   |                                       |                                     |
| NV73B2ATTE18     | 16 - 20                  | 9.1                       | 12.8    | —                | 32              |                      | 0.12                                              |                                       |                                     |
| NV73B2ATTE20     | 18 - 22                  | 10.6                      | 15.0    | —                | 36              | 0.24                 |                                                   |                                       |                                     |
| NV73B2ATTE22     | 19 - 24                  | 12.0                      | 16.5    | —                | 40              |                      | 0.25                                              |                                       |                                     |
| NV73B2ATTE24     | 21.8 - 26.5              | 14.0                      | 18.0    | —                | 42              | 0.04                 |                                                   |                                       |                                     |
| NV73B2ATTE27     | 25 - 32                  | 17.0                      | 22.0    | —                | 58              |                      | 0.09                                              |                                       |                                     |
| NV73B2ATTE33     | 30 - 39                  | 20.0                      | 26.0    | —                | 66              | 0.13                 |                                                   |                                       |                                     |
| NV73C2ATTE8.2    | 6.8 - 9.8                | 4.2                       | 6.0     | —                | 18              |                      | 0.14                                              |                                       |                                     |
| NV73C2ATTE12     | 10 - 14.4                | 6.1                       | 8.6     | —                | 24              | 0.17                 |                                                   |                                       |                                     |
| NV73C2ATTE15     | 12.5 - 18                | 7.6                       | 10.8    | —                | 29              |                      | 0.18                                              |                                       |                                     |
| NV73C2ATTE18     | 16 - 20                  | 9.1                       | 12.8    | —                | 32              | 0.13                 |                                                   |                                       |                                     |
| NV73C2ATTE20     | 18 - 22                  | 10.6                      | 15.0    | —                | 35              |                      | 0.15                                              |                                       |                                     |
| NV73C2ATTE22     | 19 - 24                  | 12.0                      | 16.5    | —                | 40              | 0.18                 |                                                   |                                       |                                     |
| NV73C2ATTE24     | 21.8 - 26.5              | 14.0                      | 18.0    | —                | 42              |                      | 0.22                                              |                                       |                                     |
| NV73A2BTTE27     | 25 - 32                  | 17.0                      | 22.0    | —                | 55              | 0.26                 |                                                   |                                       |                                     |
| NV73A2BTTE33     | 30 - 39                  | 20.0                      | 26.0    | —                | 60              |                      | 0.15                                              |                                       |                                     |
| NV73A2BTTE39     | 37 - 47                  | 25.0                      | 31.0    | —                | 72              | 0.18                 |                                                   |                                       |                                     |
| NV73A2BTTE47     | 45 - 54                  | 30.0                      | 38.0    | —                | 85              |                      | 0.22                                              |                                       |                                     |
| NV73A2BTTE56     | 52 - 62                  | 35.0                      | 45.0    | —                | 100             | 0.26                 |                                                   |                                       |                                     |

### applications and ratings (continued)

| Part Designation | Varistor Voltage Vc      | Maximum Allowable Voltage |         | Clamping Voltage |                 | Maximum Energy E (J) | Maximum Peak Current I <sub>P</sub> (A) (2 times) | Operating Temp. T <sub>opt</sub> (°C) | Storage Temp. T <sub>stg</sub> (°C) |    |
|------------------|--------------------------|---------------------------|---------|------------------|-----------------|----------------------|---------------------------------------------------|---------------------------------------|-------------------------------------|----|
|                  | I <sub>c</sub> = 1mA (V) | a.c rms (V)               | d.c (V) | V <sub>1A</sub>  | V <sub>2A</sub> |                      |                                                   |                                       |                                     |    |
| NV73B2BTTE8.2    | 6.8 - 9.8                | 4.2                       | 6.0     | —                | 18              | 0.03                 | 30                                                | -40°C to +85°C                        | -40°C to +125°C                     |    |
| NV73B2BTTE12     | 10 - 14.4                | 6.1                       | 8.6     | —                | 24              | 0.07                 | 50                                                |                                       |                                     |    |
| NV73B2BTTE15     | 12.5 - 18                | 7.6                       | 10.8    | —                | 29              | 0.09                 |                                                   |                                       |                                     |    |
| NV73B2BTTE18     | 16 - 20                  | 9.1                       | 12.8    | —                | 32              | 0.1                  |                                                   |                                       |                                     |    |
| NV73B2BTTE20     | 18 - 22                  | 10.6                      | 15.0    | —                | 35              | 0.11                 |                                                   |                                       |                                     |    |
| NV73B2BTTE22     | 19 - 24                  | 12.0                      | 16.5    | —                | 40              | 0.12                 |                                                   |                                       |                                     |    |
| NV73B2BTTE24     | 21.8 - 26.5              | 14.0                      | 18.0    | —                | 42              | 0.14                 |                                                   |                                       |                                     |    |
| NV73B2BTTE27     | 25 - 32                  | 17.0                      | 22.0    | —                | 52              | 0.16                 |                                                   |                                       |                                     |    |
| NV73C2BTTE8.2    | 6.8 - 9.8                | 4.2                       | 6.0     | —                | 18              | 0.06                 | 40                                                |                                       |                                     | 70 |
| NV73C2BTTE12     | 10 - 14.4                | 6.1                       | 8.6     | —                | 24              | 0.1                  |                                                   |                                       |                                     |    |
| NV73C2BTTE15     | 12.5 - 18                | 7.6                       | 10.8    | —                | 29              | 0.13                 |                                                   |                                       |                                     |    |
| NV73C2BTTE18     | 16 - 20                  | 9.1                       | 12.8    | —                | 29              | 0.15                 |                                                   |                                       |                                     |    |
| NV73C2BTTE20     | 18 - 22                  | 10.6                      | 15.0    | —                | 31              | 0.17                 |                                                   |                                       |                                     |    |
| NV73C2BTTE22     | 19 - 24                  | 12.0                      | 16.5    | —                | 35              | 0.19                 |                                                   |                                       |                                     |    |
| NV73C2BTTE24     | 21.8 - 26.5              | 14.0                      | 18.0    | —                | 38              | 0.2                  |                                                   |                                       |                                     |    |
| NV73C2BTTE27     | 25 - 32                  | 17.0                      | 22.0    | —                | 48              | 0.24                 |                                                   |                                       |                                     |    |

## environmental applications

### Performance Characteristics

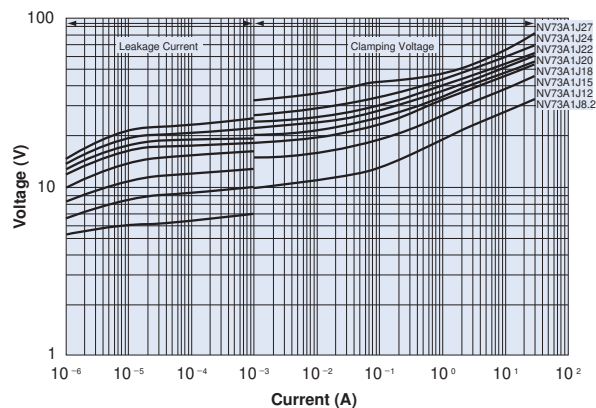
| Parameter                                            | Requirement Δ V±%          | Test Method                                                                           |
|------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|
| Varistor Voltage                                     | Within specified tolerance | Voltage between terminals when 1mA is flowed                                          |
| Solderability                                        | 95% coverage minimum       | 230°C ± 5°C, 4 seconds ± 1 second                                                     |
| Resistance to Solder Heat                            | ±10%                       | 270°C ± 5°C, 3 seconds ± 0.5 second                                                   |
| Rapid Change of Temperature                          | ±10%                       | -40°C (30 minutes), +125°C (30 minutes), 30 cycles                                    |
| Maximum Peak Current                                 | ±10%                       | A single standard impulse of 8/20μ seconds, 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, 1000h, Load: Maximum allowable circuit voltage (d.c.)                     |
| High Temperature Life with a.c. Bias**               | ±10%                       | 85°C ± 5°C, 1000h, Load: Maximum allowable circuit voltage (V <sub>a.c.r.m.s.</sub> ) |
| High Temperature & High Humidity Life with d.c. Bias | ±10%                       | 40°C ± 5°C, 95% RH, 500h, Load: Maximum allowable voltage (d.c.)                      |
| High Temperature Storage Life                        | ±10%                       | 125°C ± 5°C, 1000h                                                                    |
| Low Temperature Storage Life                         | ±10%                       | -40°C ± 5°C, 1000h                                                                    |

For Voltage Current Curves Graphs see Environmental Applications. Additional environmental applications can also be found at [www.koaspeer.com](http://www.koaspeer.com)

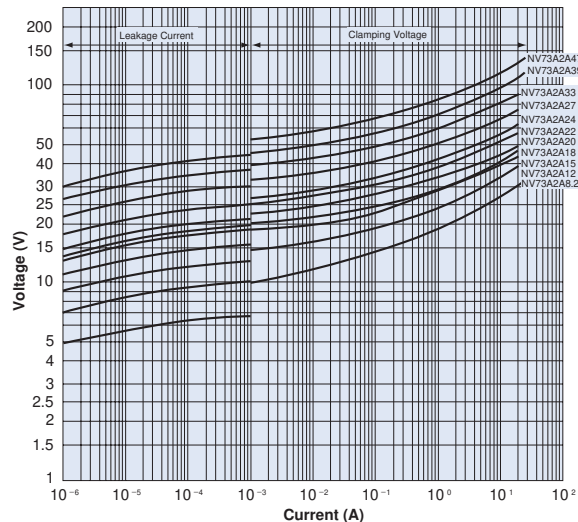
## environmental applications (continued)

### Voltage-Current Curves (Ta = 25°C)

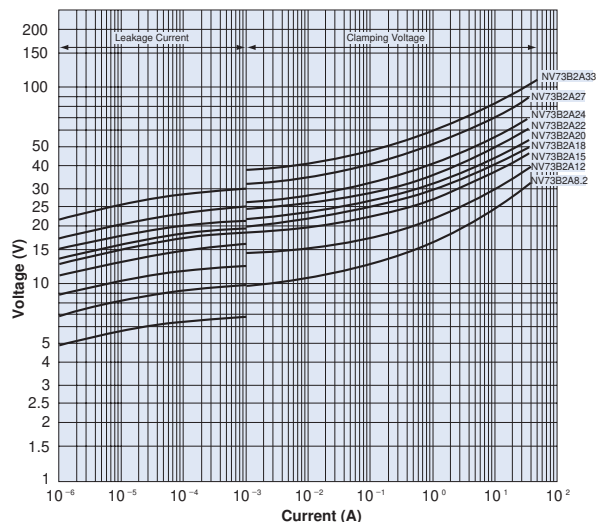
**NV73A 1J**



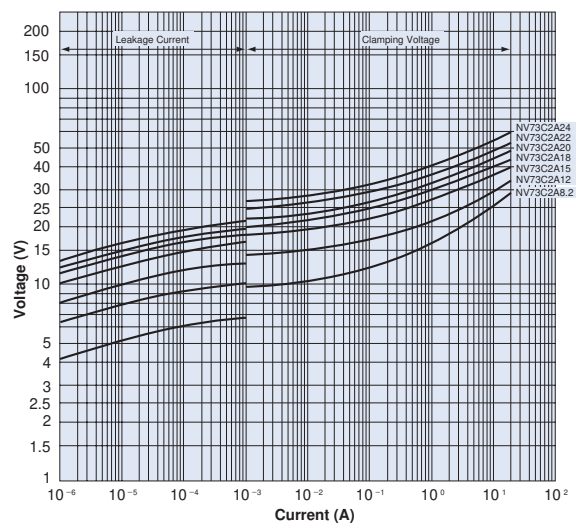
**NV73A 2A**



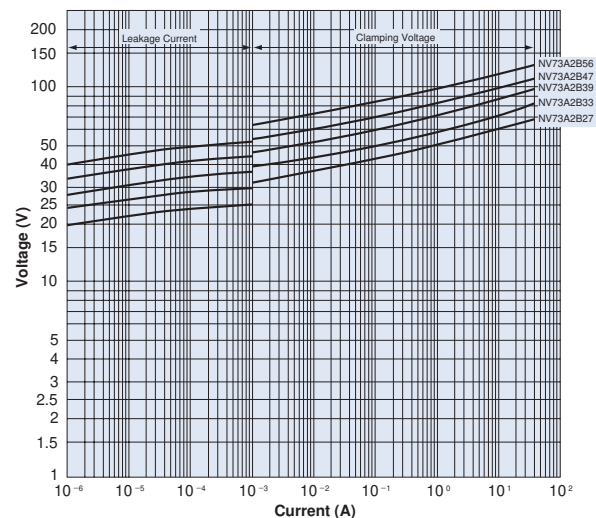
**NV73B 2A**



**NV73C 2A**



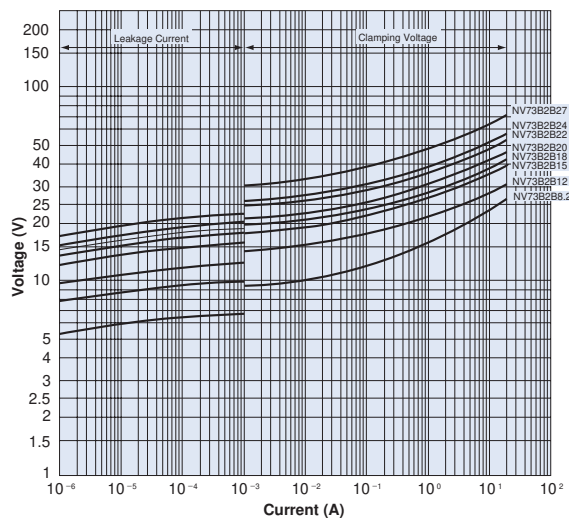
**NV73A 2B**



## environmental applications (continued)

### Voltage-Current Curves (Ta = 25°C)

NV73B 2B



NV73C 2B

