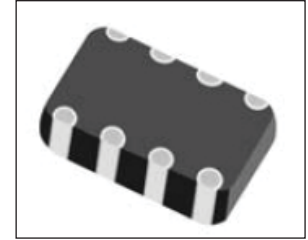


### FEATURES

- MULTILAYER CONSTRUCTION
- TRANSIENT VOLTAGE (ESD, I/O, EFT AND BURST) PROTECTION
- 4-ELEMENTS TO 8-ELEMENTS IN SINGLE PACKAGE
- REDUCED PCB SPACE AND ASSEMBLY COST
- R-C TERMINATOR CIRCUITS
- CASE SIZE 0805 & 0825 (2.05mm x 1.25mm)
- FOR TRANSIENT VOLTAGE AND EMI PROTECTION
- FAST RESPONSE (LESS THAN 0.5nS)
- LOW CLAMPING VOLTAGES
- REFLOW SOLDERING COMPATIBLE



\*1 -  $V_c$ , Maximum peak voltage across the varistor at 1 A, 8/20 $\mu$ s impulse current.

\*2 -  $V_c$ , Maximum peak voltage across the varistor measured at 30ns after initiation of pulse on IEC61000-4-2 30A/8KV.

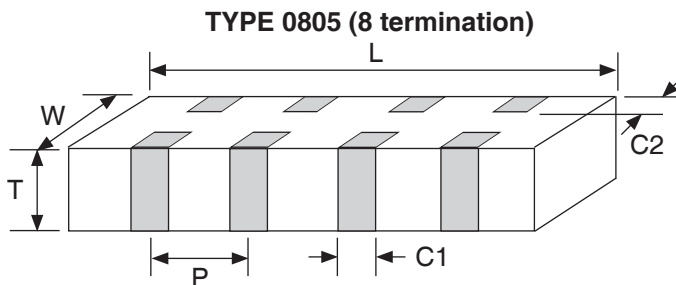
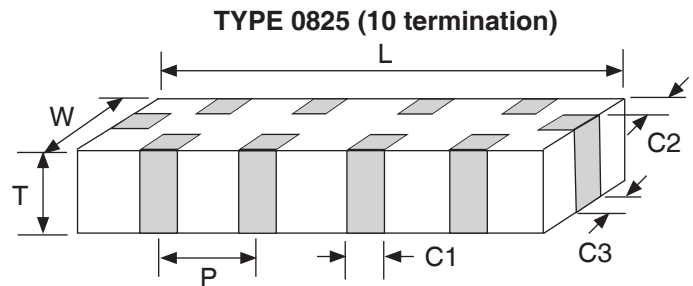
\*3 -  $I_p$ , Maximum peak current applied at 8/20 $\mu$ s surge impulse current without varistor failure.

Please specify the capacitance tolerance code (N= $\pm$ 30%, Y= $\pm$ 100%~-50%).

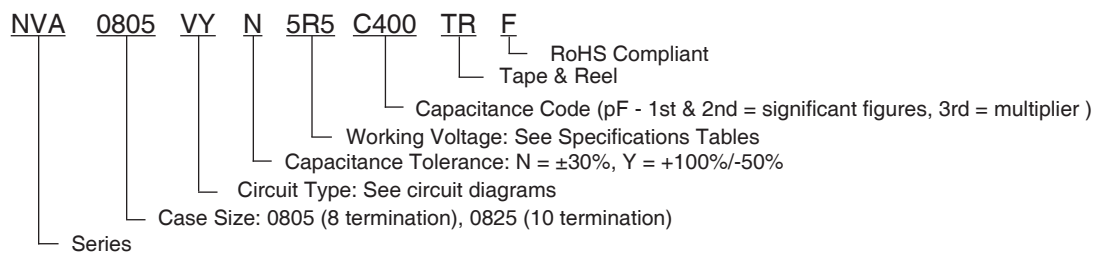
Inquiries for custom products are welcome, please contact local NIC sales personnel to review your requirements.

### CASE SIZE DIMENSIONS (mm)

| Type    | L               | W               | T               | C1              | C2              | C3              | P               |
|---------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| NVA0805 | 2.05 $\pm$ 0.10 | 1.25 $\pm$ 0.10 | 0.85 $\pm$ 0.10 | 0.25 $\pm$ 0.10 | 0.20 $\pm$ 0.10 | /               | 0.50 $\pm$ 0.10 |
| NVA0825 | 2.05 $\pm$ 0.10 | 1.25 $\pm$ 0.10 | 0.85 $\pm$ 0.10 | 0.25 $\pm$ 0.10 | 0.20 $\pm$ 0.10 | 0.30 $\pm$ 0.10 | 0.50 $\pm$ 0.10 |



### PART NUMBERING SYSTEM

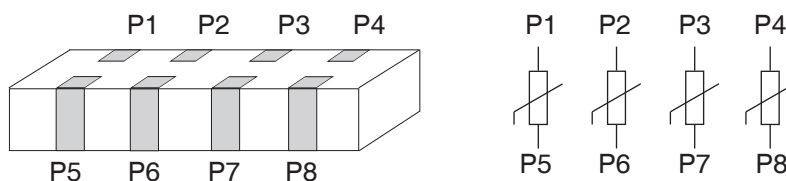


### NVA0805VY 8 TERMINATION, ISOLATED CIRCUIT

| Part Number          | Max. Working Voltage <20mA |         | Varistor Voltage @1mA DC (Volts) | Max. Clamping Voltage         |                            | Rated Single Pulse Transient Peak Current 8/20μs (Amps. <sub>3</sub> ) | Typical Capacitance @0.5Vrms, 1MHz (pF) |
|----------------------|----------------------------|---------|----------------------------------|-------------------------------|----------------------------|------------------------------------------------------------------------|-----------------------------------------|
|                      | VDC                        | VAC RMS |                                  | 8/20μs (Volts. <sub>1</sub> ) | ESD (Volts. <sub>2</sub> ) |                                                                        |                                         |
| NVA0805VY_5R5C400TRF | 5.5                        | 4       | 10 ~ 14                          | 18                            | 23                         | 5                                                                      | 40                                      |
| NVA0805VY_140C100TRF | 14                         | 10      | 16 ~ 22                          | 30                            | 39                         | 2                                                                      | 10                                      |
| NVA0805VY_140C400TRF | 14                         | 10      | 16 ~ 22                          | 30                            | 39                         | 5                                                                      | 40                                      |
| NVA0805VY_140C700TRF | 14                         | 10      | 16 ~ 22                          | 30                            | 39                         | 10                                                                     | 70                                      |
| NVA0805VY_180C100TRF | 18                         | 12.7    | 22 ~ 28                          | 40                            | 48                         | 2                                                                      | 10                                      |
| NVA0805VY_180C150TRF | 18                         | 12.7    | 22 ~ 28                          | 40                            | 48                         | 2                                                                      | 15                                      |

"\_" = Add Capacitance Tolerance: **N** = ±30%, **Y** = +100%/-50%

### NVA0805VY 8 TERMINATION ISOLATED CIRCUIT

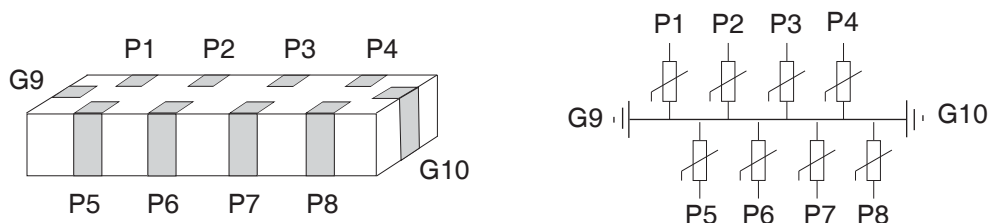


### NVA0825VZ, 10 TERMINATION, BUSSED CIRCUIT

| Part Number          | Max. Working Voltage <20mA |         | Varistor Voltage @1mA DC (Volts) | Max. Clamping Voltage         |                            | Rated Single Pulse Transient Peak Current 8/20μs (Amps. <sub>3</sub> ) | Typical Capacitance @0.5Vrms, 1MHz (pF) |
|----------------------|----------------------------|---------|----------------------------------|-------------------------------|----------------------------|------------------------------------------------------------------------|-----------------------------------------|
|                      | VDC                        | VAC RMS |                                  | 8/20μs (Volts. <sub>1</sub> ) | ESD (Volts. <sub>2</sub> ) |                                                                        |                                         |
| NVA0825VZ_5R5C200TRF | 5.5                        | 4       | 10 ~ 14                          | 18                            | 23                         | 3                                                                      | 20                                      |
| NVA0825VZ_140C100TRF | 14                         | 10      | 16 ~ 22                          | 30                            | 39                         | 2                                                                      | 10                                      |
| NVA0825VZ_180C100TRF | 18                         | 12.7    | 22 ~ 28                          | 40                            | 48                         | 2                                                                      | 10                                      |
| NVA0825VZ_180C150TRF | 18                         | 12.7    | 22 ~ 28                          | 40                            | 48                         | 2                                                                      | 15                                      |

"\_" = Add Capacitance Tolerance: **N** = ±30%, **Y** = +100%/-50%

### NVA0825VZ 10 TERMINATION BUSSED CIRCUIT

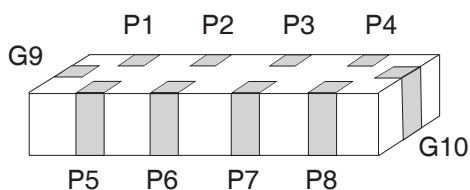
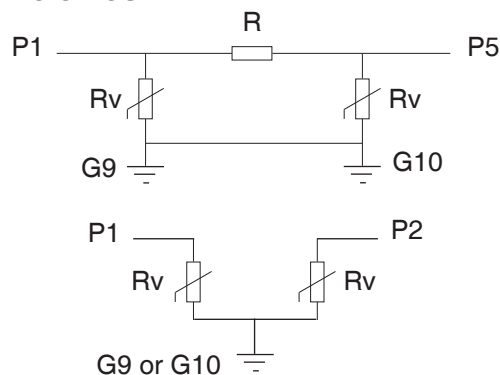


### NVA0825R\_, 10 TERMINATION, R-C CIRCUIT

| Part Number          | Max. Working Voltage <20mA |         | DC Resistance ( $\Omega$ ) | Varistor Voltage @ 1mA DC (Volts) | Max. Clamping Voltage              |                           | Rated Single Pulse Transient Peak Current 8/20 $\mu$ s (Amps <sub>3</sub> ) | Cut Off Frequency / fO | Typical Cap. @ 0.5Vrms, 1MHz (pF) |
|----------------------|----------------------------|---------|----------------------------|-----------------------------------|------------------------------------|---------------------------|-----------------------------------------------------------------------------|------------------------|-----------------------------------|
|                      | VDC                        | VAC RMS |                            |                                   | 8/20 $\mu$ s (Volts <sub>1</sub> ) | ESD (Volts <sub>2</sub> ) |                                                                             |                        |                                   |
| NVA0825RC_5R5C500TRF | 5.5                        | 4       | 100 $\Omega$ $\pm$ 30%     | 10 ~ 14                           | 18                                 | 23                        | 10                                                                          | 50                     | 50                                |
| NVA0825RA_140C100TRF | 14                         | 10      | 30 $\Omega$ $\pm$ 30%      | 16 ~ 22                           | 30                                 | 39                        | 2                                                                           | 100                    | 10                                |
| NVA0825RB_140C100TRF | 14                         | 10      | 50 $\Omega$ $\pm$ 30%      | 16 ~ 22                           | 30                                 | 39                        | 2                                                                           | 100                    | 10                                |
| NVA0825RC_140C100TRF | 14                         | 10      | 100 $\Omega$ $\pm$ 30%     | 16 ~ 22                           | 30                                 | 39                        | 2                                                                           | 100                    | 10                                |
| NVA0825RD_140C100TRF | 14                         | 10      | 10 $\Omega$ $\pm$ 30%      | 16 ~ 22                           | 30                                 | 39                        | 2                                                                           | 100                    | 10                                |
| NVA0825RA_180C150TRF | 18                         | 12.7    | 30 $\Omega$ $\pm$ 30%      | 22 ~ 28                           | 40                                 | 48                        | 2                                                                           | 100                    | 15                                |
| NVA0825RB_180C150TRF | 18                         | 12.7    | 50 $\Omega$ $\pm$ 30%      | 22 ~ 28                           | 40                                 | 48                        | 2                                                                           | 100                    | 15                                |
| NVA0825RC_180C150TRF | 18                         | 12.7    | 100 $\Omega$ $\pm$ 30%     | 22 ~ 28                           | 40                                 | 48                        | 2                                                                           | 100                    | 15                                |
| NVA0825RD_180C150TRF | 18                         | 12.7    | 10 $\Omega$ $\pm$ 30%      | 22 ~ 28                           | 40                                 | 48                        | 2                                                                           | 100                    | 15                                |

"\_" = Add Capacitance Tolerance: N =  $\pm$ 30%, Y = +100%/-50%

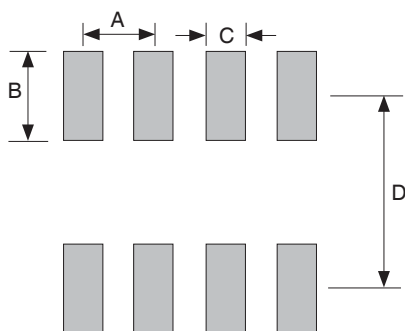
### NVA0825R\_ 10 TERMINATION R-C CIRCUIT



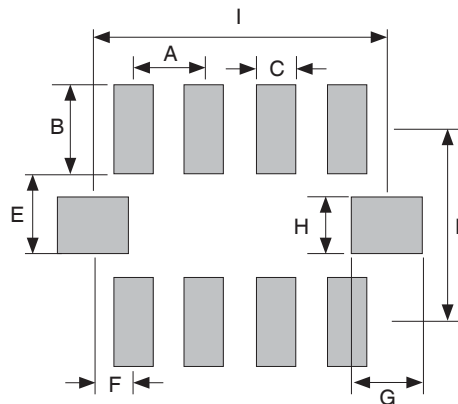
### RECOMMENDED LAND PATTERN DIMENSIONS (mm)

| Type    | A    | B     | C   | D    | E     | F    | G    | H    | I    |
|---------|------|-------|-----|------|-------|------|------|------|------|
| NVA0805 | 0.28 | 0.625 | 0.5 | 1.37 | /     | /    | /    | /    | /    |
| NVA0825 |      |       |     |      | 0.575 | 0.20 | 0.50 | 0.40 | 1.90 |

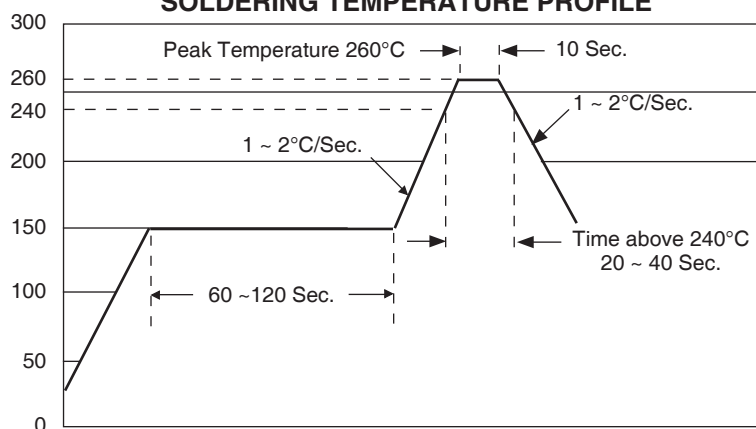
#### NVA0805 8 TERMINATIONS



#### NVA0825 10 TERMINATIONS



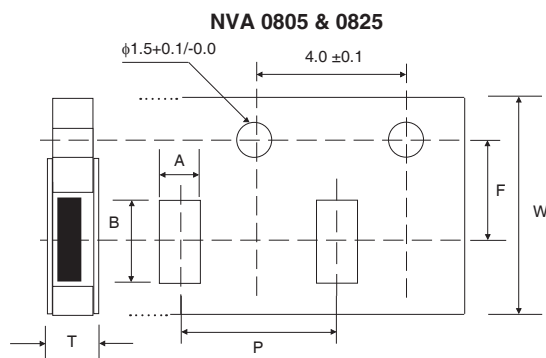
### RECOMMENDED REFLOW SOLDERING TEMPERATURE PROFILE



**Note: 2 times maximum reflow**

### CARRIER DIMENSIONS (mm) AND REEL QUANTITY

| Type    | A    | B    | P    | T    | F          | W         | Reel Quantity |
|---------|------|------|------|------|------------|-----------|---------------|
| NVA0805 | 1.50 | 2.30 | 4.00 | 1.10 | 3.5 ± 0.05 | 8.0 ± 0.3 | 4,000         |
| NVA0825 |      |      |      |      |            |           |               |



### REEL DIMENSIONS (mm)

| A         | B        | C          | W         |
|-----------|----------|------------|-----------|
| 178 ± 2.0 | 58 ± 2.0 | 13.5 ± 0.2 | 9.0 ± 1.5 |

