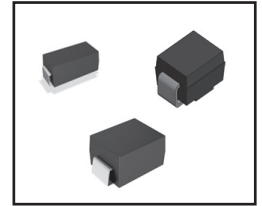


FEATURES

- MINIATURE SMA, SMB & SMC CASE SIZES
- OPERATING VOLTAGES 5.0 ~ 75VDC
- PEAK PULSE POWER FROM 400W ~ 5000W
- QUICK RESPONSE & LOW CLAMPING VOLTAGE
- REFLOW SOLDERING APPLICABLE
- TAPE & REEL PACKAGING FOR AUTOMATIC PICK-PLACE

**RoHS
Compliant**
includes all homogeneous materials

*See Part Number System for Details



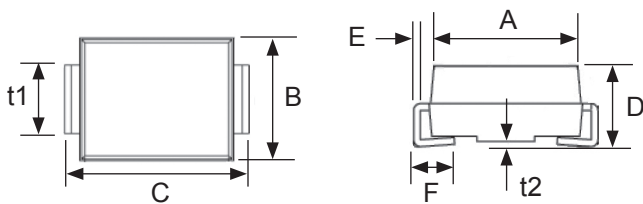
| Specifications | Case Code | | |
|-------------------------------------------|----------------|----------------|----------------|
| | SMA (DO-214AC) | SMB (DO-214AA) | SMC (DO-214AB) |
| Operating Voltage Range (VR) | 5.0 ~75VDC | 5.0 ~ 75VDC | 5.0 ~ 75VDC |
| Operating Junction Temperature Range (Tj) | -55°C ~ +150°C | | |
| Peak Power (IPP @ 10/1000µS) | 400W | up to 1000W | up to 5000W |
| Reverse Leakage Current (IDRM) | 800µA max. | | |
| Reverse Breakdown Voltage (VBR) | 7.0 ~ 92.1VDC | 7.0 ~ 92.1VDC | 7.0 ~ 92.1VDC |

ENVIRONMENTAL CHARACTERISTICS

| Test | Specifications | Test Method & Condition |
|----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------|
| High Temperature Reverse Bias | VR, VBR, VDRM, IR and Vc will be within specified limits. | Temperature: 150°C ±3°C, Bias = 80% V _{DRM} Duration: 168 hours |
| High Temperature Load Life | | Temperature: 150°C ±3°C Duration: 168 hours |
| High & Low Temperature | | 10 cycles, 30 minute dwell time -40°C ~ +125°C |
| High Temperature & High Humidity | | Temperature: +85°C Relative Humidity: 85% Duration: 168 hours |
| Pressure Cooker Test | | Temperature: +121°C Relative Humidity: 100% Pressure: 2 atm Duration: 24 hours |
| Resistance to Soldering Heat | | Temperature: +260°C ±5°C |

COMPONENT DIMENSIONS (mm):

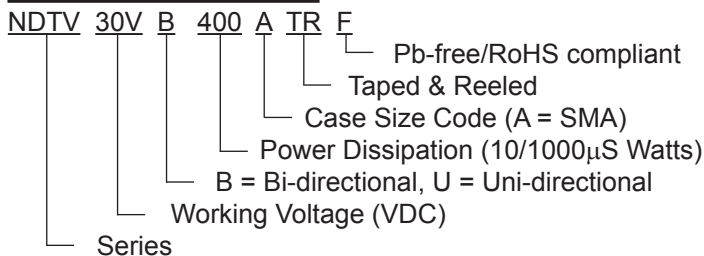
| Case Size | A | B | C | D | E | F | t1 | t2 |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| SMA DO-214AC | 3.99 - 4.65 | 2.55 - 2.90 | 4.75 - 5.28 | 1.98 - 2.50 | 0.15 - 0.31 | 0.76 - 1.55 | 1.25 - 1.65 | 0.10 - 0.40 |
| SMB DO-214AA | 4.35 - 4.65 | 3.45 - 3.75 | 4.95 - 5.45 | 2.10 - 2.60 | 0.15 - 0.25 | 0.80 - 1.50 | 1.85 - 2.15 | 0.00 - 0.40 |
| SMC DO-214AB | 6.75 - 7.05 | 5.85 - 6.15 | 7.75 - 8.25 | 2.45 - 2.95 | 0.15 - 0.25 | 0.90 - 1.60 | 2.85 - 3.20 | 0.00 - 0.40 |



MARKING EXAMPLES

| Part Numbers | Marking | Description |
|------------------|---------|-------------------------------|
| NDTV33VB400ATRF | A33C | SMA, 33 volt, Bi-directional |
| NDTV36VU600BTRF | B36 | SMB, 36 volt, Uni-directional |
| NDTV15VB1500CTRF | C15C | SMC, 15 volt, Bi-directional |
| NDTV40VB3000CTRF | D40C | SMC, 40 volt, Bi-directional |
| NDTV58VB5000CTRF | 5D58C | SMC, 58 volt, Bi-directional |

PART NUMBER SYSTEM



Bi-Directional Circuit



Uni-Directional Circuit



NDTV STANDARD VALUES AND SPECIFICATIONS

| NIC P/N | | Voltage Rating V _R (V) | IDRM (μA) | Breakdown Voltage V _{BR} (V) | | I _T (mA) | Clamping Voltage @ I _{PP} 10/1000μS V _C (V) | I _{PP} (A) | Peak Power I _{PP} (W) | Case Size |
|------------------|------------------|-----------------------------------|-----------|---------------------------------------|------|---------------------|-----------------------------------------------------------------|---------------------|--------------------------------|-----------|
| Bi-Directional | Uni-directional | | | min. | max. | | | | | |
| NDTV5VB400ATRF | NDTV5VU400ATRF | 5.0 | 800 | 6.40 | 7.00 | 10 | 9.2 | 43.5 | 400 | SMA |
| NDTV6VB400ATRF | NDTV6VU400ATRF | 6.0 | 800 | 6.67 | 7.37 | 10 | 10.3 | 38.8 | 400 | SMA |
| NDTV6.5VB400ATRF | NDTV6.5VU400ATRF | 6.5 | 500 | 7.22 | 7.98 | 10 | 11.2 | 35.7 | 400 | SMA |
| NDTV7VB400ATRF | NDTV7VU400ATRF | 7.0 | 200 | 7.78 | 8.60 | 10 | 12.0 | 33.3 | 400 | SMA |
| NDTV7.5VB400ATRF | NDTV7.5VU400ATRF | 7.5 | 100 | 8.33 | 9.21 | 1 | 12.9 | 31.0 | 400 | SMA |
| NDTV8VB400ATRF | NDTV8VU400ATRF | 8.0 | 50 | 8.89 | 9.83 | 1 | 13.6 | 29.4 | 400 | SMA |
| NDTV8.5VB400ATRF | NDTV8.5VU400ATRF | 8.5 | 20 | 9.44 | 10.4 | 1 | 14.4 | 27.8 | 400 | SMA |
| NDTV9VB400ATRF | NDTV9VU400ATRF | 9.0 | 10 | 10.0 | 11.1 | 1 | 15.4 | 26.0 | 400 | SMA |
| NDTV10VB400ATRF | NDTV10VU400ATRF | 10 | 5 | 11.1 | 12.3 | 1 | 17.0 | 23.5 | 400 | SMA |
| NDTV11VB400ATRF | NDTV11VU400ATRF | 11 | 1 | 12.2 | 13.5 | 1 | 18.2 | 22.0 | 400 | SMA |
| NDTV12VB400ATRF | NDTV12VU400ATRF | 12 | 1 | 13.3 | 14.7 | 1 | 19.9 | 20.1 | 400 | SMA |
| NDTV13VB400ATRF | NDTV13VU400ATRF | 13 | 1 | 14.4 | 15.9 | 1 | 21.5 | 18.6 | 400 | SMA |
| NDTV14VB400ATRF | NDTV14VU400ATRF | 14 | 1 | 15.6 | 17.2 | 1 | 23.2 | 17.2 | 400 | SMA |
| NDTV15VB400ATRF | NDTV15VU400ATRF | 15 | 1 | 16.7 | 18.5 | 1 | 24.4 | 16.4 | 400 | SMA |
| NDTV16VB400ATRF | NDTV16VU400ATRF | 16 | 1 | 17.8 | 19.7 | 1 | 26.0 | 15.4 | 400 | SMA |
| NDTV17VB400ATRF | NDTV17VU400ATRF | 17 | 1 | 18.9 | 20.9 | 1 | 27.6 | 14.5 | 400 | SMA |
| NDTV18VB400ATRF | NDTV18VU400ATRF | 18 | 1 | 20.0 | 22.1 | 1 | 29.2 | 13.7 | 400 | SMA |
| NDTV20VB400ATRF | NDTV20VU400ATRF | 20 | 1 | 22.2 | 24.5 | 1 | 32.4 | 12.3 | 400 | SMA |
| NDTV22VB400ATRF | NDTV22VU400ATRF | 22 | 1 | 24.4 | 26.9 | 1 | 35.5 | 11.3 | 400 | SMA |
| NDTV24VB400ATRF | NDTV24VU400ATRF | 24 | 1 | 26.7 | 29.5 | 1 | 38.9 | 10.3 | 400 | SMA |
| NDTV26VB400ATRF | NDTV26VU400ATRF | 26 | 1 | 28.9 | 31.9 | 1 | 42.1 | 9.5 | 400 | SMA |
| NDTV28VB400ATRF | NDTV28VU400ATRF | 28 | 1 | 31.1 | 34.4 | 1 | 45.4 | 8.8 | 400 | SMA |
| NDTV30VB400ATRF | NDTV30VU400ATRF | 30 | 1 | 33.3 | 36.8 | 1 | 48.4 | 8.3 | 400 | SMA |
| NDTV33VB400ATRF | NDTV33VU400ATRF | 33 | 1 | 36.7 | 40.6 | 1 | 53.3 | 7.5 | 400 | SMA |
| NDTV36VB400ATRF | NDTV36VU400ATRF | 36 | 1 | 40.0 | 44.2 | 1 | 58.1 | 6.9 | 400 | SMA |
| NDTV40VB400ATRF | NDTV40VU400ATRF | 40 | 1 | 44.4 | 49.1 | 1 | 64.5 | 6.2 | 400 | SMA |
| NDTV43VB400ATRF | NDTV43VU400ATRF | 43 | 1 | 47.8 | 52.8 | 1 | 69.4 | 5.8 | 400 | SMA |
| NDTV45VB400ATRF | NDTV45VU400ATRF | 45 | 1 | 50.0 | 55.3 | 1 | 72.7 | 5.5 | 400 | SMA |
| NDTV48VB400ATRF | NDTV48VU400ATRF | 48 | 1 | 53.3 | 58.9 | 1 | 77.4 | 5.2 | 400 | SMA |
| NDTV51VB400ATRF | NDTV51VU400ATRF | 51 | 1 | 56.7 | 62.7 | 1 | 82.4 | 4.9 | 400 | SMA |
| NDTV54VB400ATRF | NDTV54VU400ATRF | 54 | 1 | 60.0 | 66.3 | 1 | 87.1 | 4.6 | 400 | SMA |
| NDTV58VB400ATRF | NDTV58VU400ATRF | 58 | 1 | 64.4 | 71.2 | 1 | 93.6 | 4.3 | 400 | SMA |
| NDTV60VB400ATRF | NDTV60VU400ATRF | 60 | 1 | 66.7 | 73.7 | 1 | 96.8 | 4.1 | 400 | SMA |
| NDTV64VB400ATRF | NDTV64VU400ATRF | 64 | 1 | 71.1 | 78.6 | 1 | 103 | 3.9 | 400 | SMA |
| NDTV70VB400ATRF | NDTV70VU400ATRF | 70 | 1 | 77.8 | 86.0 | 1 | 113 | 3.5 | 400 | SMA |
| NDTV75VB400ATRF | NDTV75VU400ATRF | 75 | 1 | 83.3 | 92.1 | 1 | 121 | 3.3 | 400 | SMA |
| NDTV5VB600BTRF | NDTV5VU600BTRF | 5.0 | 800 | 6.40 | 7.00 | 10 | 9.2 | 65.3 | 600 | SMB |
| NDTV6VB600BTRF | NDTV6VU600BTRF | 6.0 | 800 | 6.67 | 7.37 | 10 | 10.3 | 58.3 | 600 | SMB |
| NDTV6.5VB600BTRF | NDTV6.5VU600BTRF | 6.5 | 500 | 7.22 | 7.98 | 10 | 11.2 | 53.6 | 600 | SMB |
| NDTV7VB600BTRF | NDTV7VU600BTRF | 7.0 | 200 | 7.78 | 8.60 | 10 | 12.0 | 50.0 | 600 | SMB |
| NDTV7.5VB600BTRF | NDTV7.5VU600BTRF | 7.5 | 100 | 8.33 | 9.21 | 1 | 12.9 | 46.6 | 600 | SMB |
| NDTV8VB600BTRF | NDTV8VU600BTRF | 8.0 | 50 | 8.89 | 9.83 | 1 | 13.6 | 44.2 | 600 | SMB |
| NDTV8.5VB600BTRF | NDTV8.5VU600BTRF | 8.5 | 20 | 9.44 | 10.4 | 1 | 14.4 | 41.7 | 600 | SMB |
| NDTV9VB600BTRF | NDTV9VU600BTRF | 9.0 | 10 | 10.0 | 11.1 | 1 | 15.4 | 39.0 | 600 | SMB |



NDTV STANDARD VALUES AND SPECIFICATIONS

| NIC P/N | | Voltage Rating V _R (V) | I _{DRM} (μA) | Breakdown Voltage V _{BR} (V) | | I _T (mA) | Clamping Voltage @ I _{PP} 10/1000μS V _c (V) | I _{PP} (A) | Peak Power I _{PP} (W) | Case Size |
|-------------------|-------------------|-----------------------------------|-----------------------|---------------------------------------|------|---------------------|-----------------------------------------------------------------|---------------------|--------------------------------|-----------|
| Uni-directional | BI-Directional | | | min. | max. | | | | | |
| NDTV10VB600BTRF | NDTV10VU600BTRF | 10 | 5 | 11.1 | 12.3 | 1 | 17.0 | 35.3 | 600 | SMB |
| NDTV11VB600BTRF | NDTV11VU600BTRF | 11 | 1 | 12.2 | 13.5 | 1 | 18.2 | 33.0 | 600 | SMB |
| NDTV12VB600BTRF | NDTV12VU600BTRF | 12 | 1 | 13.3 | 14.7 | 1 | 19.9 | 30.2 | 600 | SMB |
| NDTV13VB600BTRF | NDTV13VU600BTRF | 13 | 1 | 14.4 | 15.9 | 1 | 21.5 | 28.0 | 600 | SMB |
| NDTV14VB600BTRF | NDTV14VU600BTRF | 14 | 1 | 15.6 | 17.2 | 1 | 23.2 | 25.9 | 600 | SMB |
| NDTV18VB600BTRF | NDTV15VU600BTRF | 15 | 1 | 16.7 | 18.5 | 1 | 24.4 | 24.6 | 600 | SMB |
| NDTV16VB600BTRF | NDTV16VU600BTRF | 16 | 1 | 17.8 | 19.7 | 1 | 26.0 | 23.1 | 600 | SMB |
| NDTV17VB600BTRF | NDTV17VU600BTRF | 17 | 1 | 18.9 | 20.9 | 1 | 27.6 | 21.8 | 600 | SMB |
| NDTV18VB600BTRF | NDTV18VU600BTRF | 18 | 1 | 20.0 | 22.1 | 1 | 29.2 | 20.6 | 600 | SMB |
| NDTV20VB600BTRF | NDTV20VU600BTRF | 20 | 1 | 22.2 | 24.5 | 1 | 32.4 | 18.6 | 600 | SMB |
| NDTV22VB600BTRF | NDTV22VU600BTRF | 22 | 1 | 24.4 | 26.9 | 1 | 35.5 | 16.9 | 600 | SMB |
| NDTV28VB600BTRF | NDTV24VU600BTRF | 24 | 1 | 26.7 | 29.5 | 1 | 38.9 | 15.5 | 600 | SMB |
| NDTV26VB600BTRF | NDTV26VU600BTRF | 26 | 1 | 28.9 | 31.9 | 1 | 42.1 | 14.3 | 600 | SMB |
| NDTV28VB600BTRF | NDTV28VU600BTRF | 28 | 1 | 31.1 | 34.4 | 1 | 45.4 | 13.3 | 600 | SMB |
| NDTV30VB600BTRF | NDTV30VU600BTRF | 30 | 1 | 33.3 | 36.8 | 1 | 48.4 | 12.4 | 600 | SMB |
| NDTV33VB600BTRF | NDTV33VU600BTRF | 33 | 1 | 36.7 | 40.6 | 1 | 53.3 | 11.3 | 600 | SMB |
| NDTV36VB600BTRF | NDTV36VU600BTRF | 36 | 1 | 40.0 | 44.2 | 1 | 58.1 | 10.4 | 600 | SMB |
| NDTV40VB600BTRF | NDTV40VU600BTRF | 40 | 1 | 44.4 | 49.1 | 1 | 64.5 | 9.3 | 600 | SMB |
| NDTV43VB600BTRF | NDTV43VU600BTRF | 43 | 1 | 47.8 | 52.8 | 1 | 69.4 | 8.7 | 600 | SMB |
| NDTV45VB600BTRF | NDTV45VU600BTRF | 45 | 1 | 50.0 | 55.3 | 1 | 72.7 | 8.3 | 600 | SMB |
| NDTV48VB600BTRF | NDTV48VU600BTRF | 48 | 1 | 53.3 | 58.9 | 1 | 77.4 | 7.8 | 600 | SMB |
| NDTV51VB600BTRF | NDTV51VU600BTRF | 51 | 1 | 56.7 | 62.7 | 1 | 82.4 | 7.3 | 600 | SMB |
| NDTV54VB600BTRF | NDTV54VU600BTRF | 54 | 1 | 60.0 | 66.3 | 1 | 87.1 | 6.9 | 600 | SMB |
| NDTV58VB600BTRF | NDTV58VU600BTRF | 58 | 1 | 64.4 | 71.2 | 1 | 93.6 | 6.5 | 600 | SMB |
| NDTV60VB600BTRF | NDTV60VU600BTRF | 60 | 1 | 66.7 | 73.7 | 1 | 96.8 | 6.2 | 600 | SMB |
| NDTV64VB600BTRF | NDTV64VU600BTRF | 64 | 1 | 71.1 | 78.6 | 1 | 103 | 5.9 | 600 | SMB |
| NDTV70VB600BTRF | NDTV70VU600BTRF | 70 | 1 | 77.8 | 86.0 | 1 | 113 | 5.3 | 600 | SMB |
| NDTV75VB600BTRF | NDTV75VU600BTRF | 75 | 1 | 83.3 | 92.1 | 1 | 121 | 5.0 | 600 | SMB |
| NDTV5VB1500CTRF | NDTV5VU1500CTRF | 5.0 | 800 | 6.40 | 7.00 | 10 | 9.2 | 163 | 1500 | SMC |
| NDTV6VB1500CTRF | NDTV6VU1500CTRF | 6.0 | 800 | 6.67 | 7.37 | 10 | 10.3 | 145.7 | 1500 | SMC |
| NDTV6.5VB1500CTRF | NDTV6.5VU1500CTRF | 6.5 | 500 | 7.22 | 7.98 | 10 | 11.2 | 134.0 | 1500 | SMC |
| NDTV7VB1500CTRF | NDTV7VU1500CTRF | 7.0 | 200 | 7.78 | 8.60 | 10 | 12.0 | 125.0 | 1500 | SMC |
| NDTV7.5VB1500CTRF | NDTV7.5VU1500CTRF | 7.5 | 100 | 8.33 | 9.21 | 1 | 12.9 | 116.3 | 1500 | SMC |
| NDTV8VB1500CTRF | NDTV8VU1500CTRF | 8.0 | 50 | 8.89 | 9.83 | 1 | 13.6 | 110.3 | 1500 | SMC |
| NDTV8.5VB1500CTRF | NDTV8.5VU1500CTRF | 8.5 | 20 | 9.44 | 10.4 | 1 | 14.4 | 104.2 | 1500 | SMC |
| NDTV9VB1500CTRF | NDTV9VU1500CTRF | 9.0 | 10 | 10.0 | 11.1 | 1 | 15.4 | 97.4 | 1500 | SMC |
| NDTV10VB1500CTRF | NDTV10VU1500CTRF | 10 | 5 | 11.1 | 12.3 | 1 | 17.0 | 88.3 | 1500 | SMC |
| NDTV11VB1500CTRF | NDTV11VU1500CTRF | 11 | 1 | 12.2 | 13.5 | 1 | 18.2 | 82.5 | 1500 | SMC |
| NDTV12VB1500CTRF | NDTV12VU1500CTRF | 12 | 1 | 13.3 | 14.7 | 1 | 19.9 | 75.4 | 1500 | SMC |
| NDTV13VB1500CTRF | NDTV13VU1500CTRF | 13 | 1 | 14.4 | 15.9 | 1 | 21.5 | 69.8 | 1500 | SMC |
| NDTV14VB1500CTRF | NDTV14VU1500CTRF | 14 | 1 | 15.6 | 17.2 | 1 | 23.2 | 64.7 | 1500 | SMC |
| NDTV15VB1500CTRF | NDTV15VU1500CTRF | 15 | 1 | 16.7 | 18.5 | 1 | 24.4 | 61.5 | 1500 | SMC |
| NDTV16VB1500CTRF | NDTV16VU1500CTRF | 16 | 1 | 17.8 | 19.7 | 1 | 26.0 | 57.7 | 1500 | SMC |
| NDTV17VB1500CTRF | NDTV17VU1500CTRF | 17 | 1 | 18.9 | 20.9 | 1 | 27.6 | 54.4 | 1500 | SMC |



NDTV STANDARD VALUES AND SPECIFICATIONS

| NIC P/N | | Voltage Rating V _R (V) | I _{DRM} (μA) | Breakdown Voltage V _{BR} (V) | | I _T (mA) | Clamping Voltage @ I _{PP} 10/1000μS V _C (V) | I _{PP} (A) | Peak Power I _{PP} (W) | Case Size |
|-------------------|-------------------|-----------------------------------|-----------------------|---------------------------------------|------|---------------------|-----------------------------------------------------------------|---------------------|--------------------------------|-----------|
| Uni-directional | BI-Directional | | | min. | max. | | | | | |
| NDTV18VB1500CTRF | NDTV18VU1500CTRF | 18 | 1 | 20.0 | 22.1 | 1 | 29.2 | 51.4 | 1500 | SMC |
| NDTV20VB1500CTRF | NDTV20VU1500CTRF | 20 | 1 | 22.2 | 24.5 | 1 | 32.4 | 46.3 | 1500 | SMC |
| NDTV22VB1500CTRF | NDTV22VU1500CTRF | 22 | 1 | 24.4 | 26.9 | 1 | 35.5 | 42.3 | 1500 | SMC |
| NDTV24VB1500CTRF | NDTV24VU1500CTRF | 24 | 1 | 26.7 | 29.5 | 1 | 38.9 | 38.6 | 1500 | SMC |
| NDTV26VB1500CTRF | NDTV26VU1500CTRF | 26 | 1 | 28.9 | 31.9 | 1 | 42.1 | 35.7 | 1500 | SMC |
| NDTV28VB1500CTRF | NDTV28VU1500CTRF | 28 | 1 | 31.1 | 34.4 | 1 | 45.4 | 33.1 | 1500 | SMC |
| NDTV30VB1500CTRF | NDTV30VU1500CTRF | 30 | 1 | 33.3 | 36.8 | 1 | 48.4 | 31.0 | 1500 | SMC |
| NDTV33VB1500CTRF | NDTV33VU1500CTRF | 33 | 1 | 36.7 | 40.6 | 1 | 53.3 | 28.2 | 1500 | SMC |
| NDTV36VB1500CTRF | NDTV36VU1500CTRF | 36 | 1 | 40.0 | 44.2 | 1 | 58.1 | 25.9 | 1500 | SMC |
| NDTV40VB1500CTRF | NDTV40VU1500CTRF | 40 | 1 | 44.4 | 49.1 | 1 | 64.5 | 23.3 | 1500 | SMC |
| NDTV43VB1500CTRF | NDTV43VU1500CTRF | 43 | 1 | 47.8 | 52.8 | 1 | 69.4 | 21.7 | 1500 | SMC |
| NDTV45VB1500CTRF | NDTV45VU1500CTRF | 45 | 1 | 50.0 | 55.3 | 1 | 72.7 | 20.6 | 1500 | SMC |
| NDTV48VB1500CTRF | NDTV48VU1500CTRF | 48 | 1 | 53.3 | 58.9 | 1 | 77.4 | 19.4 | 1500 | SMC |
| NDTV51VB1500CTRF | NDTV51VU1500CTRF | 51 | 1 | 56.7 | 62.7 | 1 | 82.4 | 18.2 | 1500 | SMC |
| NDTV54VB1500CTRF | NDTV54VU1500CTRF | 54 | 1 | 60.0 | 66.3 | 1 | 87.1 | 17.3 | 1500 | SMC |
| NDTV58VB1500CTRF | NDTV58VU1500CTRF | 58 | 1 | 64.4 | 71.2 | 1 | 93.6 | 16.1 | 1500 | SMC |
| NDTV60VB1500CTRF | NDTV60VU1500CTRF | 60 | 1 | 66.7 | 73.7 | 1 | 96.8 | 15.5 | 1500 | SMC |
| NDTV64VB1500CTRF | NDTV64VU1500CTRF | 64 | 1 | 71.1 | 78.6 | 1 | 103 | 14.6 | 1500 | SMC |
| NDTV70VB1500CTRF | NDTV70VU1500CTRF | 70 | 1 | 77.8 | 86.0 | 1 | 113 | 13.3 | 1500 | SMC |
| NDTV75VB1500CTRF | NDTV75VU1500CTRF | 75 | 1 | 83.3 | 92.1 | 1 | 121 | 12.4 | 1500 | SMC |
| NDTV5VB3000CTRF | NDTV5VU3000CTRF | 5.0 | 800 | 6.40 | 7.00 | 10 | 9.2 | 326.1 | 3000 | SMC |
| NDTV6VB3000CTRF | NDTV6VU3000CTRF | 6.0 | 800 | 6.67 | 7.37 | 10 | 10.3 | 291.3 | 3000 | SMC |
| NDTV6.5VB3000CTRF | NDTV6.5VU3000CTRF | 6.5 | 500 | 7.22 | 7.98 | 10 | 11.2 | 267.9 | 3000 | SMC |
| NDTV7VB3000CTRF | NDTV7VU3000CTRF | 7.0 | 200 | 7.78 | 8.60 | 10 | 12.0 | 250.0 | 3000 | SMC |
| NDTV7.5VB3000CTRF | NDTV7.5VU3000CTRF | 7.5 | 100 | 8.33 | 9.21 | 1 | 12.9 | 232.6 | 3000 | SMC |
| NDTV8VB3000CTRF | NDTV8VU3000CTRF | 8.0 | 50 | 8.89 | 9.83 | 1 | 13.6 | 220.6 | 3000 | SMC |
| NDTV8.5VB3000CTRF | NDTV8.5VU3000CTRF | 8.5 | 20 | 9.44 | 10.4 | 1 | 14.4 | 208.3 | 3000 | SMC |
| NDTV9VB3000CTRF | NDTV9VU3000CTRF | 9.0 | 10 | 10.0 | 11.1 | 1 | 15.4 | 194.8 | 3000 | SMC |
| NDTV10VB3000CTRF | NDTV10VU3000CTRF | 10 | 5 | 11.1 | 12.3 | 1 | 17.0 | 176.5 | 3000 | SMC |
| NDTV11VB3000CTRF | NDTV11VU3000CTRF | 11 | 1 | 12.2 | 13.5 | 1 | 18.2 | 164.8 | 3000 | SMC |
| NDTV12VB3000CTRF | NDTV12VU3000CTRF | 12 | 1 | 13.3 | 14.7 | 1 | 19.9 | 150.8 | 3000 | SMC |
| NDTV13VB3000CTRF | NDTV13VU3000CTRF | 13 | 1 | 14.4 | 15.9 | 1 | 21.5 | 139.5 | 3000 | SMC |
| NDTV15VB3000CTRF | NDTV14VU3000CTRF | 14 | 1 | 15.6 | 17.2 | 1 | 23.2 | 129.3 | 3000 | SMC |
| NDTV15VB3000CTRF | NDTV15VU3000CTRF | 15 | 1 | 16.7 | 18.5 | 1 | 24.4 | 123.0 | 3000 | SMC |
| NDTV16VB3000CTRF | NDTV16VU3000CTRF | 16 | 1 | 17.8 | 19.7 | 1 | 26.0 | 115.4 | 3000 | SMC |
| NDTV17VB3000CTRF | NDTV17VU3000CTRF | 17 | 1 | 18.9 | 20.9 | 1 | 27.6 | 108.7 | 3000 | SMC |
| NDTV18VB3000CTRF | NDTV18VU3000CTRF | 18 | 1 | 20.0 | 22.1 | 1 | 29.2 | 102.7 | 3000 | SMC |
| NDTV20VB3000CTRF | NDTV20VU3000CTRF | 20 | 1 | 22.2 | 24.5 | 1 | 32.4 | 92.6 | 3000 | SMC |
| NDTV22VB3000CTRF | NDTV22VU3000CTRF | 22 | 1 | 24.4 | 26.9 | 1 | 35.5 | 84.5 | 3000 | SMC |
| NDTV24VB3000CTRF | NDTV24VU3000CTRF | 24 | 1 | 26.7 | 29.5 | 1 | 38.9 | 77.1 | 3000 | SMC |
| NDTV26VB3000CTRF | NDTV26VU3000CTRF | 26 | 1 | 28.9 | 31.9 | 1 | 42.1 | 71.3 | 3000 | SMC |
| NDTV28VB3000CTRF | NDTV28VU3000CTRF | 28 | 1 | 31.1 | 34.4 | 1 | 45.4 | 66.1 | 3000 | SMC |
| NDTV30VB3000CTRF | NDTV30VU3000CTRF | 30 | 1 | 33.3 | 36.8 | 1 | 48.4 | 62.0 | 3000 | SMC |
| NDTV33VB3000CTRF | NDTV33VU3000CTRF | 33 | 1 | 36.7 | 40.6 | 1 | 53.3 | 56.3 | 3000 | SMC |



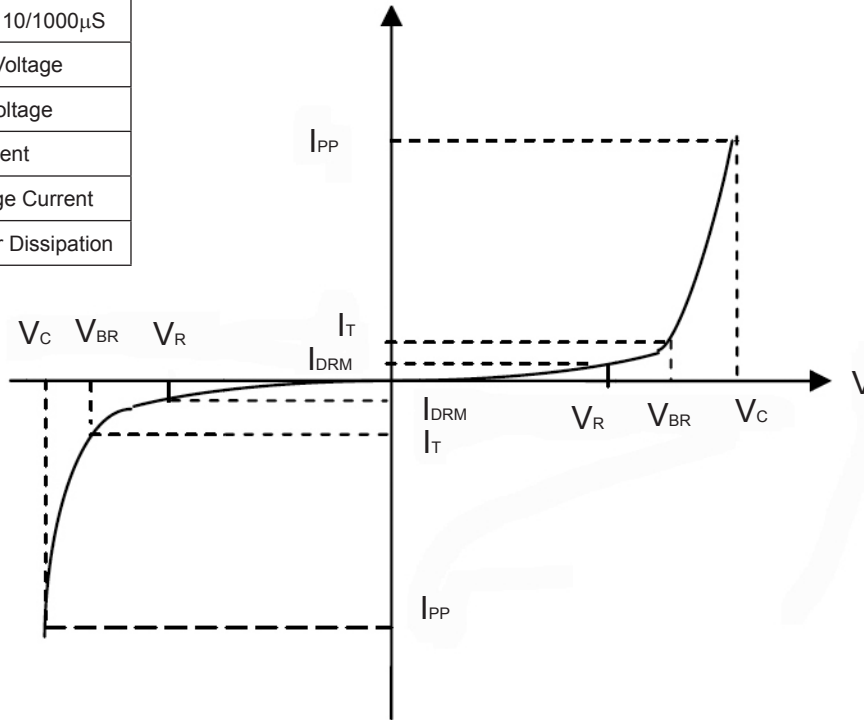
NDTV STANDARD VALUES AND SPECIFICATIONS

| NIC P/N | | Voltage Rating V _R (V) | I _{DRM} (μA) | Breakdown Voltage V _{BR} (V) | | I _T (mA) | Clamping Voltage @ I _{PP} 10/1000μS V _C (V) | I _{PP} (A) | Peak Power I _{PP} (W) | Case Size |
|------------------|------------------|--------------------------------------|--------------------------|---------------------------------------|------|------------------------|-----------------------------------------------------------------------|------------------------|-----------------------------------|-----------|
| Uni-directional | BI-Directional | | | min. | max. | | | | | |
| NDTV36VB3000CTRF | NDTV36VU3000CTRF | 36 | 1 | 40.0 | 44.2 | 1 | 58.1 | 51.6 | 3000 | SMC |
| NDTV40VB3000CTRF | NDTV40VU3000CTRF | 40 | 1 | 44.4 | 49.1 | 1 | 64.5 | 46.5 | 3000 | SMC |
| NDTV43VB3000CTRF | NDTV43VU3000CTRF | 43 | 1 | 47.8 | 52.8 | 1 | 69.4 | 43.2 | 3000 | SMC |
| NDTV45VB3000CTRF | NDTV45VU3000CTRF | 45 | 1 | 50.0 | 55.3 | 1 | 72.7 | 41.3 | 3000 | SMC |
| NDTV48VB3000CTRF | NDTV48VU3000CTRF | 48 | 1 | 53.3 | 58.9 | 1 | 77.4 | 38.8 | 3000 | SMC |
| NDTV51VB3000CTRF | NDTV51VU3000CTRF | 51 | 1 | 56.7 | 62.7 | 1 | 82.4 | 36.4 | 3000 | SMC |
| NDTV54VB3000CTRF | NDTV54VU3000CTRF | 54 | 1 | 60.0 | 66.3 | 1 | 87.1 | 34.4 | 3000 | SMC |
| NDTV58VB3000CTRF | NDTV58VU3000CTRF | 58 | 1 | 64.4 | 71.2 | 1 | 93.6 | 32.1 | 3000 | SMC |
| NDTV60VB3000CTRF | NDTV60VU3000CTRF | 60 | 1 | 66.7 | 73.7 | 1 | 96.8 | 31 | 3000 | SMC |
| NDTV64VB3000CTRF | NDTV64VU3000CTRF | 64 | 1 | 71.1 | 78.6 | 1 | 103 | 29.1 | 3000 | SMC |
| NDTV70VB3000CTRF | NDTV70VU3000CTRF | 70 | 1 | 77.8 | 86.0 | 1 | 113 | 26.5 | 3000 | SMC |
| NDTV75VB3000CTRF | NDTV75VU3000CTRF | 75 | 1 | 83.3 | 92.1 | 1 | 121 | 24.8 | 3000 | SMC |
| NDTV11VB5000CTRF | NDTV11VU5000CTRF | 11 | 800 | 12.2 | 13.5 | 1 | 18.2 | 275 | 5000 | SMC |
| NDTV12VB5000CTRF | NDTV12VU5000CTRF | 12 | 800 | 13.3 | 14.7 | 1 | 19.9 | 252 | 5000 | SMC |
| NDTV13VB5000CTRF | NDTV13VU5000CTRF | 13 | 500 | 14.4 | 15.9 | 1 | 21.5 | 233 | 5000 | SMC |
| NDTV14VB5000CTRF | NDTV14VU5000CTRF | 14 | 200 | 15.6 | 17.2 | 1 | 23.2 | 216 | 5000 | SMC |
| NDTV15VB5000CTRF | NDTV15VU5000CTRF | 15 | 100 | 16.7 | 18.5 | 1 | 24.4 | 205 | 5000 | SMC |
| NDTV16VB5000CTRF | NDTV16VU5000CTRF | 16 | 50 | 17.8 | 19.7 | 1 | 26.0 | 193 | 5000 | SMC |
| NDTV17VB5000CTRF | NDTV17VU5000CTRF | 17 | 20 | 18.9 | 20.9 | 1 | 27.6 | 181 | 5000 | SMC |
| NDTV18VB5000CTRF | NDTV18VU5000CTRF | 18 | 10 | 20.0 | 22.1 | 1 | 29.2 | 172 | 5000 | SMC |
| NDTV20VB5000CTRF | NDTV20VU5000CTRF | 20 | 5 | 22.2 | 24.5 | 1 | 32.4 | 155 | 5000 | SMC |
| NDTV22VB5000CTRF | NDTV22VU5000CTRF | 22 | 5 | 24.4 | 26.9 | 1 | 35.5 | 141 | 5000 | SMC |
| NDTV24VB5000CTRF | NDTV24VU5000CTRF | 24 | 2 | 26.7 | 29.5 | 1 | 38.9 | 129 | 5000 | SMC |
| NDTV26VB5000CTRF | NDTV26VU5000CTRF | 26 | 2 | 28.9 | 31.9 | 1 | 42.1 | 119 | 5000 | SMC |
| NDTV28VB5000CTRF | NDTV28VU5000CTRF | 28 | 2 | 31.1 | 34.4 | 1 | 45.4 | 110 | 5000 | SMC |
| NDTV30VB5000CTRF | NDTV30VU5000CTRF | 30 | 2 | 33.3 | 36.8 | 1 | 48.4 | 103 | 5000 | SMC |
| NDTV33VB5000CTRF | NDTV33VU5000CTRF | 33 | 2 | 36.7 | 40.6 | 1 | 53.3 | 93.9 | 5000 | SMC |
| NDTV36VB5000CTRF | NDTV36VU5000CTRF | 36 | 2 | 40.0 | 44.2 | 1 | 58.1 | 86.1 | 5000 | SMC |
| NDTV40VB5000CTRF | NDTV40VU5000CTRF | 40 | 2 | 44.4 | 49.1 | 1 | 64.5 | 77.6 | 5000 | SMC |
| NDTV43VB5000CTRF | NDTV43VU5000CTRF | 43 | 2 | 47.8 | 52.8 | 1 | 69.4 | 72.1 | 5000 | SMC |
| NDTV45VB5000CTRF | NDTV45VU5000CTRF | 45 | 2 | 50.0 | 55.3 | 1 | 72.7 | 68.8 | 5000 | SMC |
| NDTV48VB5000CTRF | NDTV48VU5000CTRF | 48 | 2 | 53.3 | 58.9 | 1 | 77.4 | 64.7 | 5000 | SMC |
| NDTV51VB5000CTRF | NDTV51VU5000CTRF | 51 | 2 | 56.7 | 62.7 | 1 | 82.4 | 60.7 | 5000 | SMC |
| NDTV54VB5000CTRF | NDTV54VU5000CTRF | 54 | 2 | 60.0 | 66.3 | 1 | 87.1 | 57.5 | 5000 | SMC |
| NDTV58VB5000CTRF | NDTV58VU5000CTRF | 58 | 2 | 64.4 | 71.2 | 1 | 93.6 | 53.5 | 5000 | SMC |
| NDTV60VB5000CTRF | NDTV60VU5000CTRF | 60 | 2 | 66.7 | 73.7 | 1 | 96.8 | 51.7 | 5000 | SMC |
| NDTV64VB5000CTRF | NDTV64VU5000CTRF | 64 | 2 | 71.1 | 78.6 | 1 | 103 | 48.6 | 5000 | SMC |
| NDTV70VB5000CTRF | NDTV70VU5000CTRF | 70 | 2 | 77.8 | 86.0 | 1 | 113 | 44.3 | 5000 | SMC |
| NDTV75VB5000CTRF | NDTV75VU5000CTRF | 75 | 2 | 83.3 | 92.1 | 1 | 121 | 41.4 | 5000 | SMC |

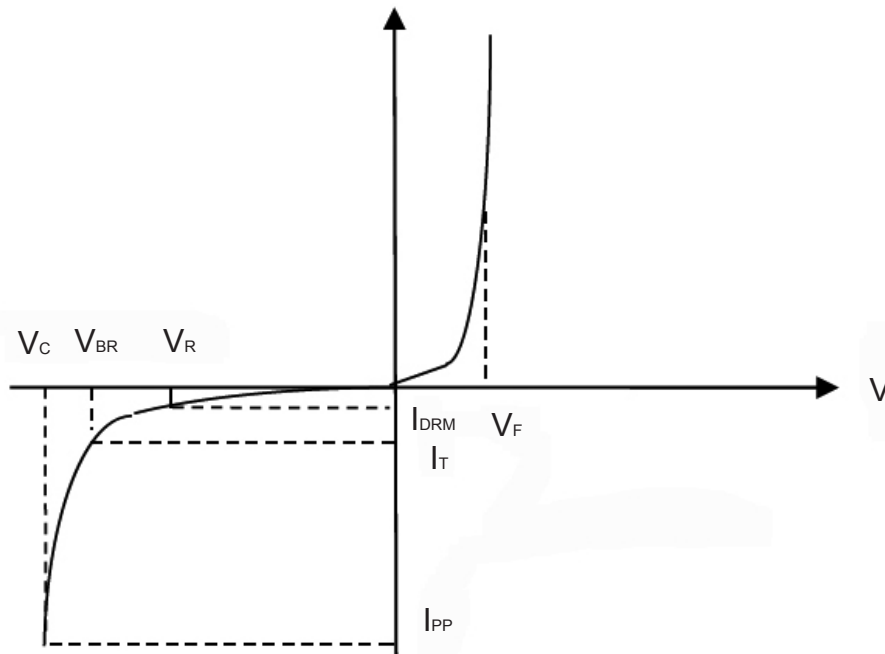
| Symbol | Definition |
|-----------|--------------------------------|
| V_F | Forward Voltage Drop |
| V_C | Clamping Voltage |
| I_{PP} | Surge Waveform 10/1000 μ S |
| V_{BR} | Breakdown Voltage |
| V_R | Stand-off Voltage |
| I_T | Test Current |
| I_{DRM} | Reverse Leakage Current |
| PPP | Peak Pulse Power Dissipation |

V-I Curves

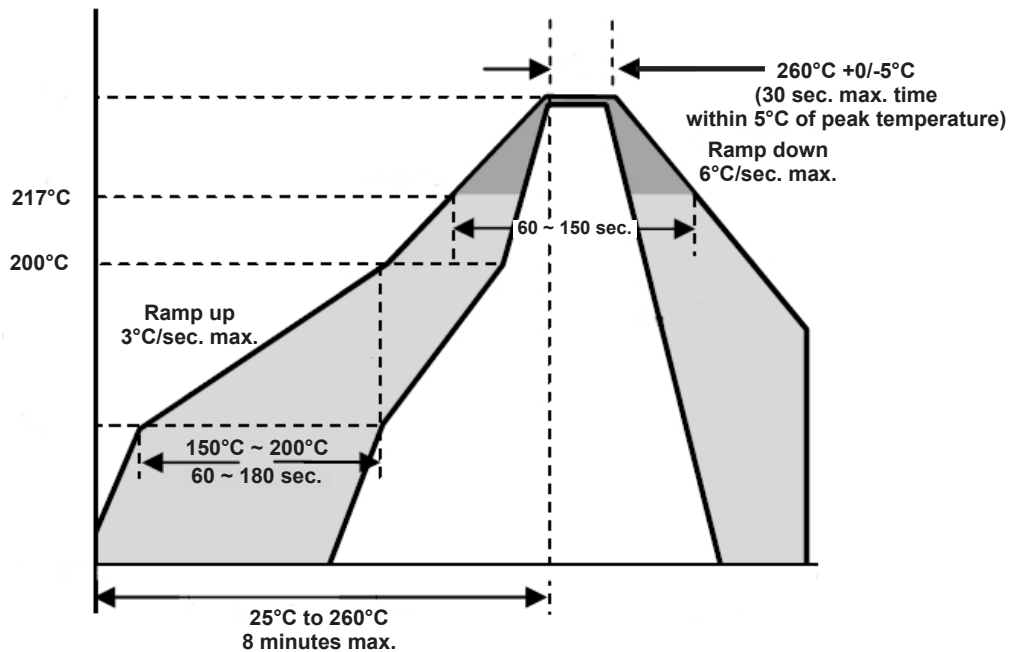
Bi-Directional



Uni-Directional



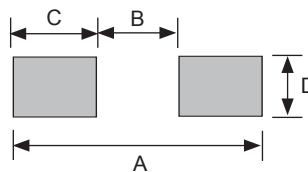
RECOMMEND REFLOW SOLDERING PROFILE



Note: Two reflow passes allowed

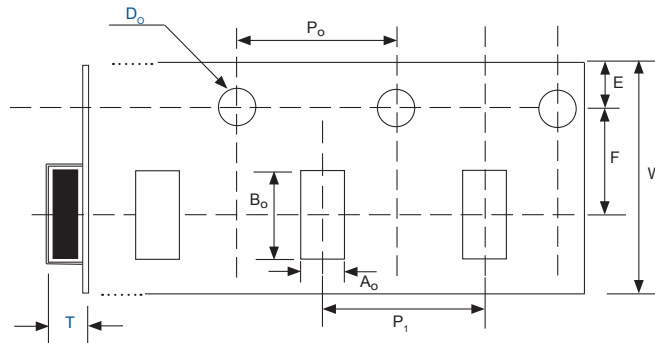
RECOMMEND LAND PATTERN DIMENSIONS (mm)

| Case Size | A ref. | B ref. | C ref. | D ref. |
|-----------|--------|--------|--------|--------|
| SMA | 6.00 | 2.00 | 2.00 | 2.00 |
| SMB | 6.58 | 2.26 | 2.16 | 2.75 |
| SMC | 8.25 | 5.05 | 1.60 | 3.05 |



EMBOSSED PLASTIC CARRIER TAPE DIMENSIONS (mm)

| Case Size | A_o | B_o | W | F | E | P_1 | P_o | D_o | T |
|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|-----------------|-----------------|
| SMA | 2.60 ± 0.30 | 5.30 ± 0.30 | 12.0 ± 0.20 | 5.65 ± 0.20 | 1.75 ± 0.20 | 4.0 ± 0.20 | 4.0 ± 0.20 | 1.50 ± 0.25 | 2.36 ± 0.30 |
| SMB | 3.80 ± 0.30 | 6.65 ± 0.30 | 12.0 ± 0.30 | 5.5 ± 1.50 | 1.75 ± 0.20 | 4.0 ± 0.20 | 4.0 ± 0.20 | 1.50 ± 0.25 | 2.45 ± 0.30 |
| SMC | 6.15 ± 0.30 | 8.20 ± 0.30 | 16.0 ± 0.10 | 7.5 ± 0.10 | 1.75 ± 0.20 | 8.0 ± 0.10 | 4.0 ± 0.10 | 1.60 ± 0.20 | 2.70 ± 0.30 |



REEL DIMENSIONS (mm)

| Case Size | A | B | C | W | Reel Quantity |
|-----------|--------------|----------------|-----------------|----------------|---------------|
| SMA | 330 ± 10 | 13.0 ± 2.0 | 100.0 ± 5.0 | 16.8 ± 2.0 | 5,000 |
| SMB | 330 ± 10 | 13.0 ± 2.0 | 100.0 ± 5.0 | 18.0 ± 4.0 | 3,000 |
| SMC | 330 ± 10 | 13.0 ± 2.0 | 100.0 ± 5.0 | 22.0 ± 2.0 | 3,000 |

