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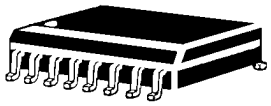
# SM1603-03C
thru
# SM1624-24C

**TVSarrayÔ Series**



## DESCRIPTION (300 watt)

This 16 pin 8 line Unidirectional or Bidirectional array is designed for use in applications where protection is required at the board level from voltage transients caused by electrostatic discharge (ESD) as defined in IEC 1000-4-2, electrical fast transients (EFT) per IEC 1000-4-4 and effects of secondary lighting.

These TRANSIENT VOLTAGE SUPPRESSOR (TVS) Diode Arrays have a peak power of 300 watts for an 8/20 µsec pulse and are designed to protect 3.0/3.3 volt components such as DRAM's, SRAM's, CMOS, HCMOS, HSIC, and low voltage interfaces up to 24 volts.

## FEATURES

- Protects 3.0/3.3 up through 24V Components
- Protects 8 lines Unidirectional or Bidirectional
- Provides electrically isolated protection
- SO-16 Packaging

## MECHANICAL

- Molded SO-16 Surface Mount
- Weight: 0.128 grams (approximate)
- Body Marked with Logo, and device number
- Pin #1 defined by DOT on top of package
- Encapsulation meets UL 94V-0

## MAXIMUM RATINGS

- Operating Temperatures: -55$^0$C to +150$^0$C
- Storage Temperature: -55$^0$C to +150$^0$C
- Peak Pulse Power: 300 Watts (8/20 µsec, Figure 1)
- Pulse Repetition Rate: <.01%

## PACKAGING

- Tape & Reel EIA Standard 481-1-A
- 13 inch reel 2,500 pieces (OPTIONAL)
- Carrier tubes 48 pcs per (STANDARD)

**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless otherwise specified**

| PART NUMBER | DEVICE MARKING | STAND OFF VOLTAGE $V_{WM}$ VOLTS | BREAKDOWN VOLTAGE $V_{BR}$ @1 mA VOLTS | CLAMPING VOLTAGE $V_C$ @ 1 Amp (FIGURE 2) VOLTS | CLAMPING VOLTAGE $V_C$ @ 5 Amp (FIGURE2) VOLTS | LEAKAGE CURRENT $I_D$ @ $V_{WM}$ µA | CAPACITANCE (f=1 MHz) @0V C pF | TEMPERATURE COEFFICIENT OF $V_{BR}$ á$V_{BR}$ mV/°C |
|---|---|---|---|---|---|---|---|---|
| | | MAX | MIN | MAX | MAX | MAX | TYP | MAX |
| SM1603 | MBA | 3.3 | 4 | 7 | 9 | 125 | 850 | -3 |
| SM1603C | MBB | 3.3 | 4 | 7 | 9 | 200 | 425 | -5 |
| SM1605 | MBC | 5.0 | 6 | 9.8 | 11 | 20 | 880 | 3 |
| SM1605C | MBD | 5.0 | 6 | 9.8 | 11 | 40 | 440 | 1 |
| SM1612 | MBE | 12 | 13.3 | 19 | 24 | 1 | 440 | 10 |
| SM1612C | MBF | 12 | 13.3 | 19 | 24 | 1 | 220 | 8 |
| SM1615 | MBG | 15 | 16.7 | 24 | 30 | 1 | 400 | 13 |
| SM1615C | MBH | 15 | 16.7 | 24 | 30 | 1 | 200 | 11 |
| SM1624 | MBK | 24 | 26.7 | 43 | 55 | 1 | 275 | 30 |
| SM1624C | MBL | 24 | 26.7 | 43 | 55 | 1 | 137 | 28 |

Part numbers with a "C" suffix are bidirectional devices

**NOTE:** Transient Voltage Suppression (TVS) product is normally selected based on its stand off voltage $V_{WM}$. Product selected voltage should be equal to or greater than the continuous peak operating voltage of the circuit to be protected.

**Application:** The SM16XX/XXC product is designed for transient voltage suppression protection of components at the board level. It is an ideal product to be used for protection of I/O Transceivers.

# WAVE FORMS

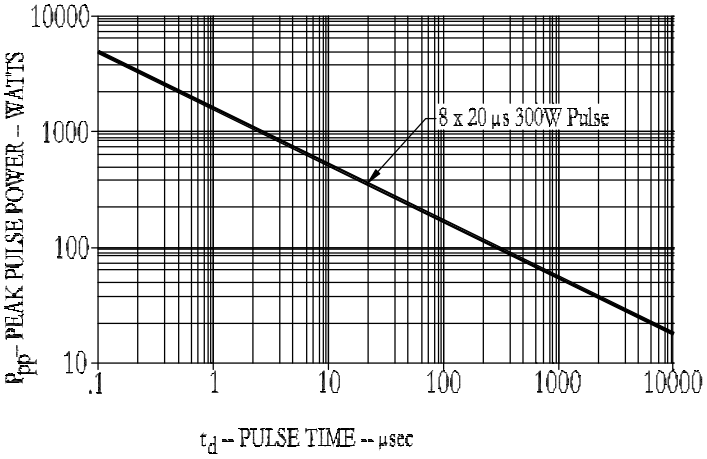



**FIGURE 1**
**Peak Pulse Power Vs Pulse Time**

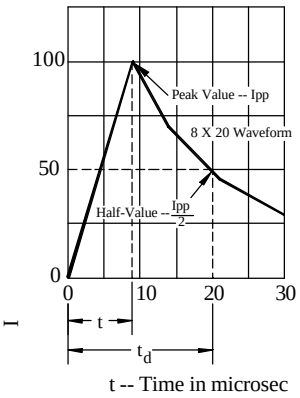
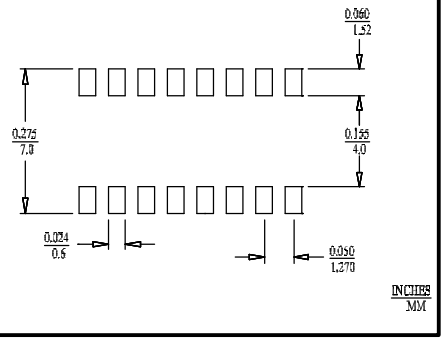
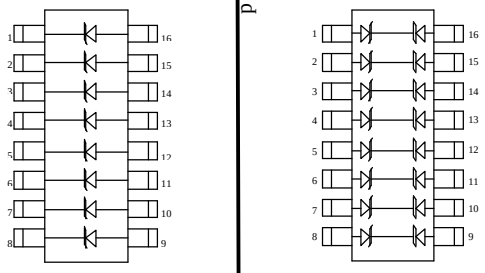



**FIGURE 2**
**Pulse Wave Form**

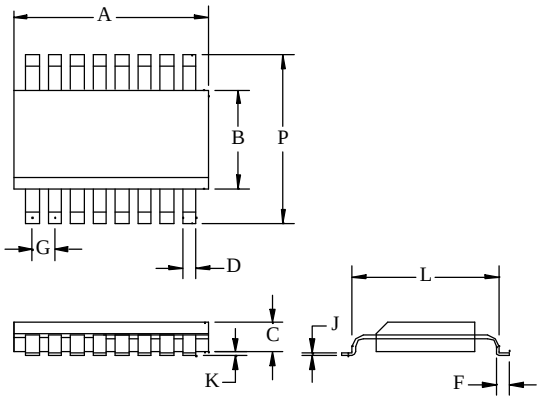
## MOUNTING PAD SO-16




## CIRCUIT DIAGRAM




## SO-16 PACKAGE




| | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| DIM | MIN | MAX | MIN | MAX |
| A | 0.358 | 0.398 | 9.09 | 10.10 |
| B | 0.150 | 0.158 | 3.81 | 4.01 |
| C | 0.053 | 0.069 | 1.35 | 1.75 |
| D | 0.011 | 0.021 | 0.28 | 0.53 |
| F | 0.016 | 0.050 | 0.41 | 1.27 |
| G | 0.050 BSC | | 1.27 BSC | |
| J | 0.006 | 0.010 | 0.15 | 0.25 |
| K | 0.004 | 0.008 | 0.10 | 0.20 |
| L | 0.189 | 0.206 | 4.80 | 5.23 |
| P | 0.228 | 0.244 | 5.79 | 6.19 |