

STEERING DIODE ARRAY

APPLICATIONS

- ✓ USB Interface Ports
- ✓ Cellular Phones
- ✓ Video
- ✓ Handheld Electronics
- ✓ Personal Computers

IEC COMPATIBILITY (EN61000-4)

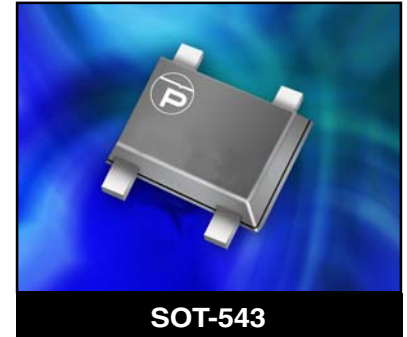
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

FEATURES

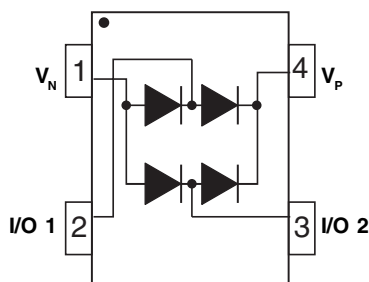
- ✓ ESD Protection > 40 kilovolts
- ✓ 225 Milliwatt Continuous Power Dissipation
- ✓ Provides Two (2) Lines of Protection
- ✓ Low Leakage Current < 1.0 μ A
- ✓ Ultra Low Capacitance: 0.6pF
- ✓ RoHS Compliant

MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOT-543
- ✓ Weight 3 milligrams (Approximate)
- ✓ Available in Lead-Free Nickel-Paladium-Gold Plating
- ✓ Solder Reflow Temperature:
Nickel-Paladium-Gold (Ni/Pd/Au) Sn/Ag/Cu: 260-270°C
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Tape and Reel Per EIA Standard 481
- ✓ Marking: Marking Code



PIN CONFIGURATION



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER | SYMBOL | VALUE | UNITS |
|--|-----------|------------|-------|
| Operating Temperature | T_J | -55 to 150 | °C |
| Storage Temperature | T_{STG} | -55 to 150 | °C |
| Continuous Power Dissipation | P_{PC} | 225 | mW |
| Repetitive Peak Forward Current @ $t_p = 5\mu s$, $F = 50kHz$ (Pin 1-2) | I_{FRM} | 700 | mA |

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

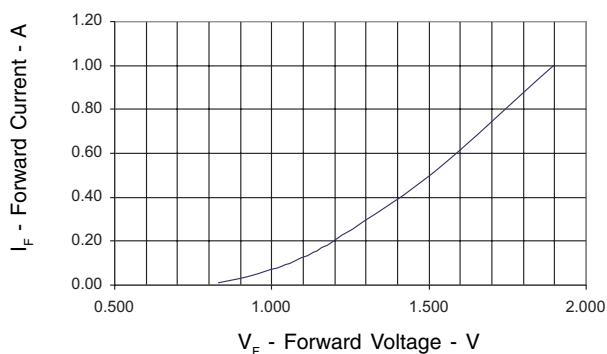
| PART NUMBER | DEVICE MARKING CODE | REPETITIVE PEAK REVERSE VOLTAGE (See Note 1) @ 10 μA V_{RRM} VOLTS | MAXIMUM REVERSE LEAKAGE CURRENT (See Note 2) V_{RRM} @ 5V I_R μA | MAXIMUM DIODE FORWARD VOLTAGE @ 10mA V_F VOLTS | MAXIMUM CAPACITANCE (See Note 3) (Between Line-Gnd) C_j pF |
|-------------|---------------------|---|--|--|--|
| USB002 | U2 | 20 | 1 | 1.4 | 0.6 |

Note 1: $V_p - V_N = 20V$.

Note 2: $V_p - V_N = 5.5V$.

Note 3: Between Line and Ground - $V_p = 5V$, $f = 1MHz$, $V_{IO} = 2.5V$, $V_N = 0V$.

FIGURE 1
PEAK FORWARD CURRENT VS FORWARD VOLTAGE



SOT-543 PACKAGE OUTLINE & DIMENSIONS

| PACKAGE OUTLINE | | PACKAGE DIMENSIONS | | | |
|-----------------|-------------|--------------------|-----------|-------|--|
| DIM | MILLIMETERS | | INCHES | | |
| | MIN | MAX | MIN | MAX | |
| A | 1.50 | 1.70 | 0.059 | 0.067 | |
| B | 1.10 | 1.30 | 0.043 | 0.051 | |
| C | 0.50 | 0.60 | 0.020 | 0.024 | |
| D | 0.17 | 0.27 | 0.007 | 0.011 | |
| G | 0.50 BSC | - | 0.020 BSC | - | |
| H | 1.50 | 1.70 | 0.059 | 0.067 | |
| J | 0.08 | 0.16 | 0.003 | 0.007 | |
| K | 0.10 | 0.30 | 0.004 | 0.012 | |

NOTES

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.

| TYPICAL | | |
|---------|-------------|--------|
| DIM | Millimeters | Inches |
| 1 | 0.30 | 0.012 |
| 2 | 1.02 | 0.040 |
| 3 | 1.40 | 0.055 |
| 4 | 0.51 | 0.020 |

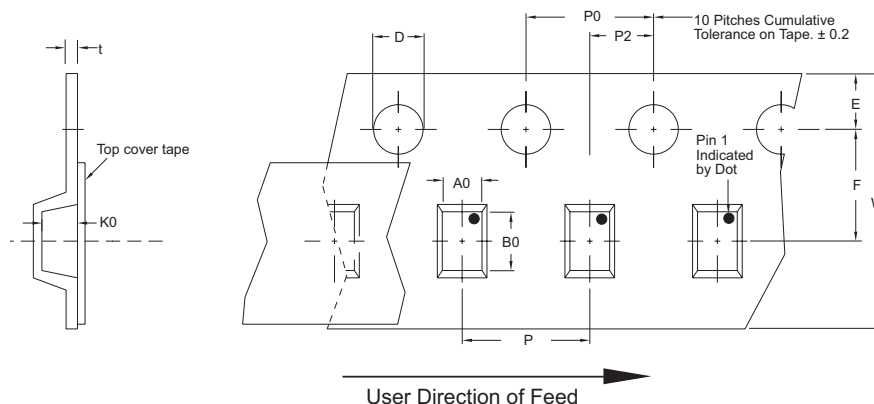
TAPE & REEL ORDERING NOMENCLATURE

1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Suffix-T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., USB002-T7.
3. Suffix-T13 = 13 Inch Reel - 10,000 pieces per 8mm tape, i.e., USB002-T13.
4. Suffix - LF = Lead-Free Plating, i.e., USB002-LF-T7.

Outline & Dimensions: Rev 0 - 1/07, 0670

Tape & Reel Specifications (Dimensions in millimeters)

| Reel Dia. | Tape Width | A0 | B0 | K0 | D | E | F | W | P0 | P2 | P | tmax |
|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| 178mm (7") | 8mm | 1.78 ± 0.05 | 1.78 ± 0.05 | 0.69 ± 0.05 | 1.50 ± 0.10 | 1.75 ± 0.10 | 3.50 ± 0.05 | 8.00 ± 0.30 | 4.00 ± 0.10 | 2.00 ± 0.05 | 4.00 ± 0.10 | 0.25 |



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