



USB004

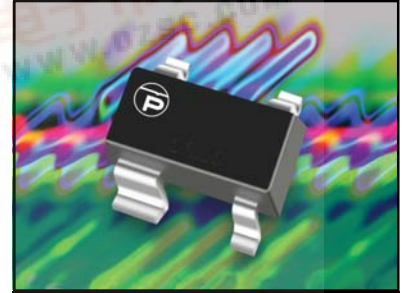
STEERING DIODE ARRAY

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



SOT-143

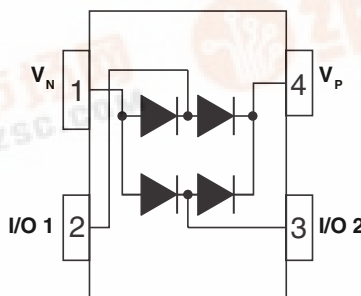
FEATURES

- ✓ ESD Protection > 40 kilovolts
- ✓ 225 Milliwatt Continuous Power Dissipation
- ✓ Provides Two (2) Lines of Protection
- ✓ Low Leakage Current < 1.0µA
- ✓ Ultra Low Capacitance: 3pF Typical
- ✓ RoHS Compliant in Lead-Free Versions

MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOT-143
- ✓ Weight 9 milligrams (Approximate)
- ✓ Available in Tin-Lead or Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:
 - Tin-Lead - Sn/Pb, 85/15: 240-245°C
 - Pure-Tin - Sn, 100: 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°C to 150°C	°C
Storage Temperature	T_{STG}	-55°C to 150°C	°C
Continuous Power Dissipation	P_{FC}	225	mW
Repetitive Peak Forward Current @ $t_p = 5\mu s$, $F = 50kHz$ (Pin 2-3)	I_{FRM}	700	mA

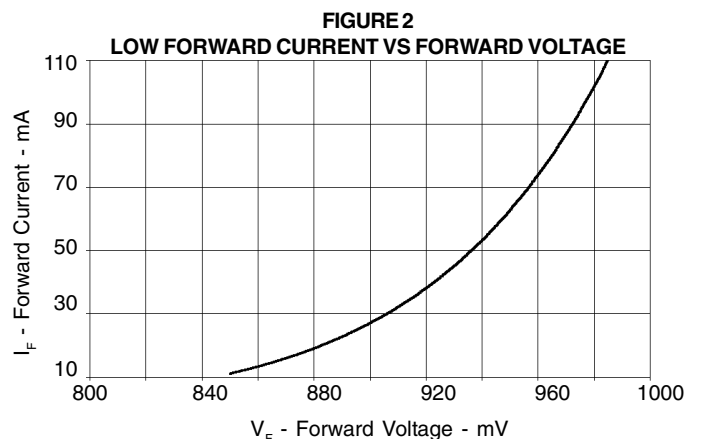
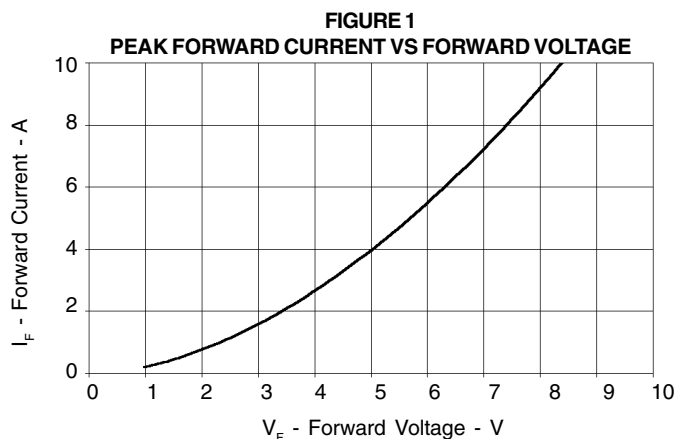
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

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 @ 20mA V_F VOLTS	MAXIMUM CAPACITANCE (See Note 3) C_j pF
USB004	PSA	20	1	0.95	6

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

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

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



SOT-143 PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE		SOT-143			
PACKAGE DIMENSIONS					
DIM	MILLIMETERS		INCHES		
	MIN	MAX	MIN	MAX	
A	2.80	3.04	0.110	0.120	
B	1.20	1.39	0.047	0.055	
C	0.84	1.14	0.033	0.045	
D	0.39	0.50	0.015	0.020	
F	0.79	0.93	0.031	0.037	
G	1.78	2.03	0.070	0.080	
H	0.013	0.10	0.0005	0.004	
J	0.08	0.15	0.003	0.006	
K	0.46	0.60	0.018	0.024	
L	0.445	0.60	0.0175	0.024	
R	0.72	0.83	0.028	0.033	
S	2.11	2.48	0.083	0.098	

MOUNTING PAD			NOTES																																							
<table border="1" style="margin: auto;"> <thead> <tr> <th colspan="3">TYPICAL</th> </tr> <tr> <th>DIM</th> <th>Millimeters</th> <th>Inches</th> </tr> </thead> <tbody> <tr><td>1</td><td>2.85</td><td>0.112</td></tr> <tr><td>2</td><td>2.00</td><td>0.079</td></tr> <tr><td>3</td><td>1.80</td><td>0.071</td></tr> <tr><td>4</td><td>1.90</td><td>0.075</td></tr> <tr><td>5</td><td>1.05</td><td>0.041</td></tr> <tr><td>6</td><td>2.75</td><td>0.108</td></tr> <tr><td>7</td><td>1.20</td><td>0.047</td></tr> <tr><td>8</td><td>0.80</td><td>0.031</td></tr> <tr><td>9</td><td>0.85</td><td>0.033</td></tr> <tr><td>10</td><td>0.85</td><td>0.033</td></tr> <tr><td>11</td><td>0.85</td><td>0.033</td></tr> </tbody> </table>			TYPICAL			DIM	Millimeters	Inches	1	2.85	0.112	2	2.00	0.079	3	1.80	0.071	4	1.90	0.075	5	1.05	0.041	6	2.75	0.108	7	1.20	0.047	8	0.80	0.031	9	0.85	0.033	10	0.85	0.033	11	0.85	0.033	<p>NOTES</p> <ol style="list-style-type: none"> Dimensioning and tolerances per ANSI Y14.5M, 1985. Controlling Dimension: Inches Dimensions are exclusive of mold flash and metal burrs. <p>TAPE & REEL ORDERING NOMENCLATURE</p> <ol style="list-style-type: none"> Surface mount product is taped and reeled in accordance with EIA-481. Suffix -T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., <i>USB004-T7</i>. Suffix -T13 = 13 Inch Reel - 10,000 pieces per 8mm tape, i.e., <i>USB004-T13</i>. Suffix -LF = Lead-Free, Pure-Tin Plating, i.e., <i>USB004-LF-T7</i>.
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			Outline & Dimensions: Rev 2 - 6/06, 06011																																							

Tape & Reel Specifications (Dimensions in millimeters)

Reel Dia.	Tape Width	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	3.10 ± 0.10	2.70 ± 0.10	1.35 ± 0.10	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

