



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

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: 3pF Typical
- ✓ RoHS Compliant in Lead-Free Versions

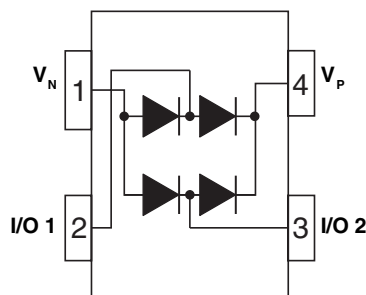
MECHANICAL CHARACTERISTICS

- ✓ 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



SOT-143

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_{PC}	225	mW
Repetitive Peak Forward Current @ $t_p = 5\mu s$, $F = 50kHz$ (Pin 2-3)	I_{FFRM}	700	mA

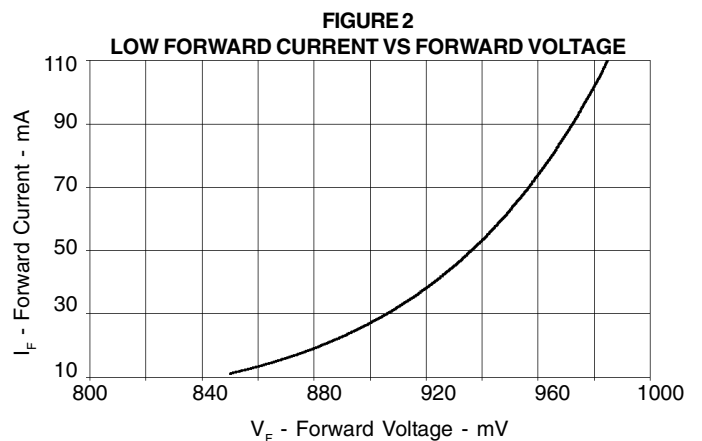
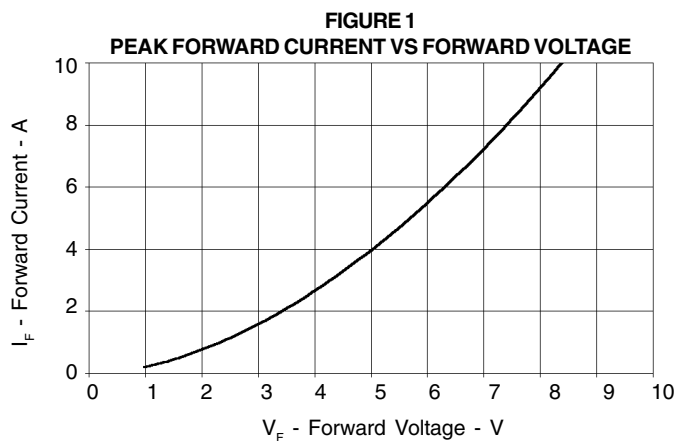
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

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

Technical drawing of the SOT-143 package outline. The drawing includes three views: a top view, a side view, and an end view. Dimensions are labeled as follows: A (total width), B (package height), C (package thickness), D (lead width), F (lead pitch), G (lead length), H (lead thickness), J (lead angle), K (lead height), L (lead width), R (lead pitch), and S (total length).

SOT-143

3D perspective view of the SOT-143 package, showing its rectangular body and four leads.

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

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

Technical drawing of the mounting pad showing dimensions 1 through 11. The drawing includes a top view and a side view. Dimensions are labeled as follows: 1 (total width), 2 (lead width), 3 (lead pitch), 4 (lead length), 5 (lead thickness), 6 (package height), 7 (lead width), 8 (lead pitch), 9 (lead length), 10 (lead thickness), and 11 (lead angle).

NOTES

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Dimensions are exclusive of mold flash and metal burrs.

TAPE & REEL ORDERING NOMENCLATURE

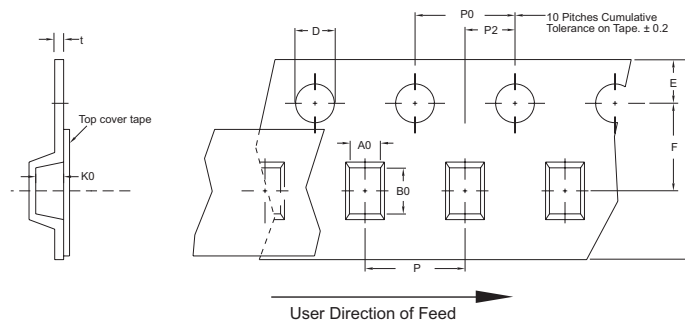
1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Suffix-T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., *USB004-T7*.
3. Suffix-T13 = 13 Inch Reel - 10,000 pieces per 8mm tape, i.e., *USB004-T13*.
4. Suffix - LF = Lead-Free, Pure-Tin Plating, i.e., *USB004-LF-T7*.

Outline & Dimensions: Rev 2 - 6/06, 06011

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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



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