

Features

- ◆ Ultra low capacitance: 1.5pF MAX (I/O to GND)
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 5.5V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) : 7A(8/20 μs)

Mechanical Characteristics

- ◆ Package: SOT143
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: "Green" Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 3 per J-STD-020

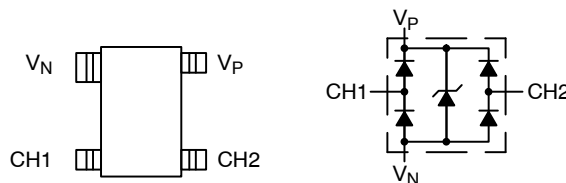
Applications

- ◆ USB 2.0 and USB 3.0 Ports
- ◆ USB OTG
- ◆ Digital video interface(DVI)
- ◆ Monitor and Flat Panel Displays
- ◆ PCI Express and Serial SATA Ports
- ◆ Gigabit Ethernet
- ◆ IEEE 1394 firewire ports
- ◆ Consumer products (STB, DVD, DSC, DVC...)

Ordering Information

Part Number	Qty per Reel	Reel Size
TPCM1293A-02SR	3000	7"

Dimensions and Pin Configuration



Marking: D636 *

D636 = Device code
* = Month code

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I _{PP}	7	A	8/20μs (Note 7)
ESD Protection – Contact Discharge	V _{ESD_Contact}	±30	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V _{ESD_Air}	±30	kV	Standard IEC 61000-4-2

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	300	mW
Thermal Resistance, Junction to Ambient T _A = +25°C	R _{θJA}	417	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V _{RWM}	—	3.3	5.5	V	—
Channel Leakage Current (Note 6)	I _R	—	1	100	nA	V _R = 5.5V, Any I/O to GND
Reverse Breakdown Voltage	V _{BR}	6.0	—	9.0	V	I _R = 1mA, from pin 5 to pin 2
Clamping Voltage, Positive Transients (Note 7)	V _C	—	10	12	V	I _{PP} = 1A, t _p = 8/20μs
			1.6			I _{PP} = 6A, t _p = 8/20μs
Channel Input Capacitance (Note 8)	C _T	—	1.0	1.5	pF	V _R = 0V, f = 1MHz, Any I/O to GND
Dynamic Resistance	R _{DYN}	—	0.9	—	Ω	I _{PP} = 1A, t _p = 8/20μs

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig1. 8/20 μs Pulse Waveform

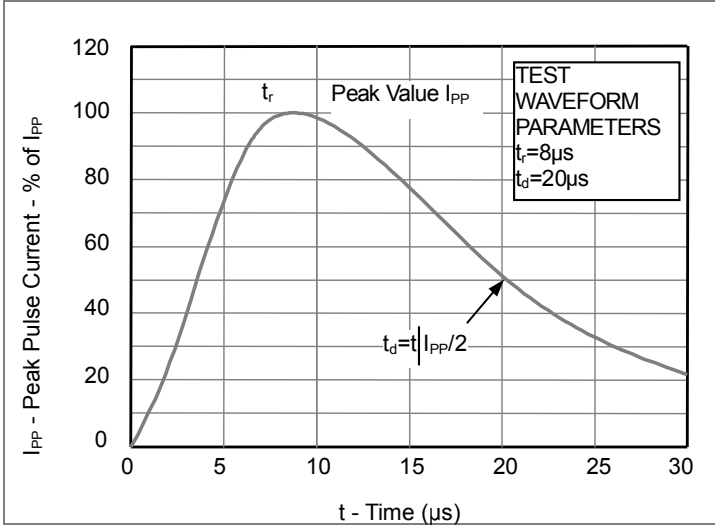


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

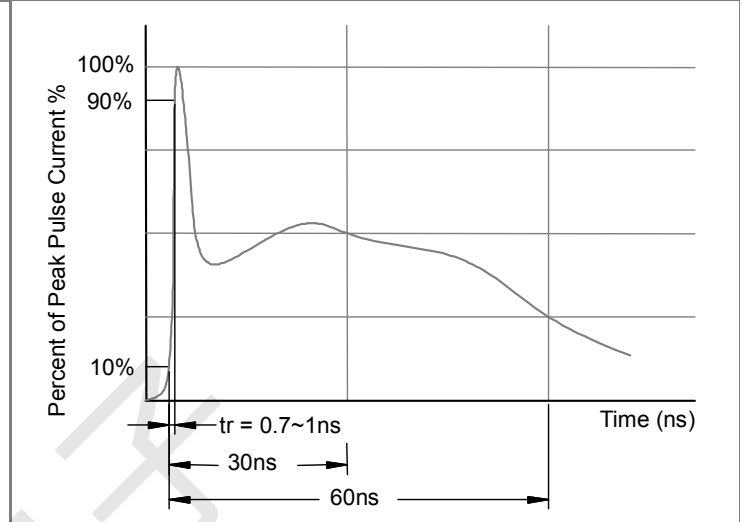
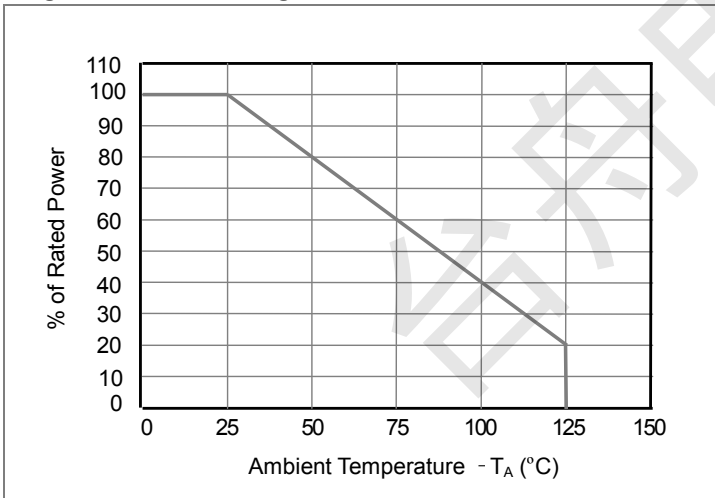
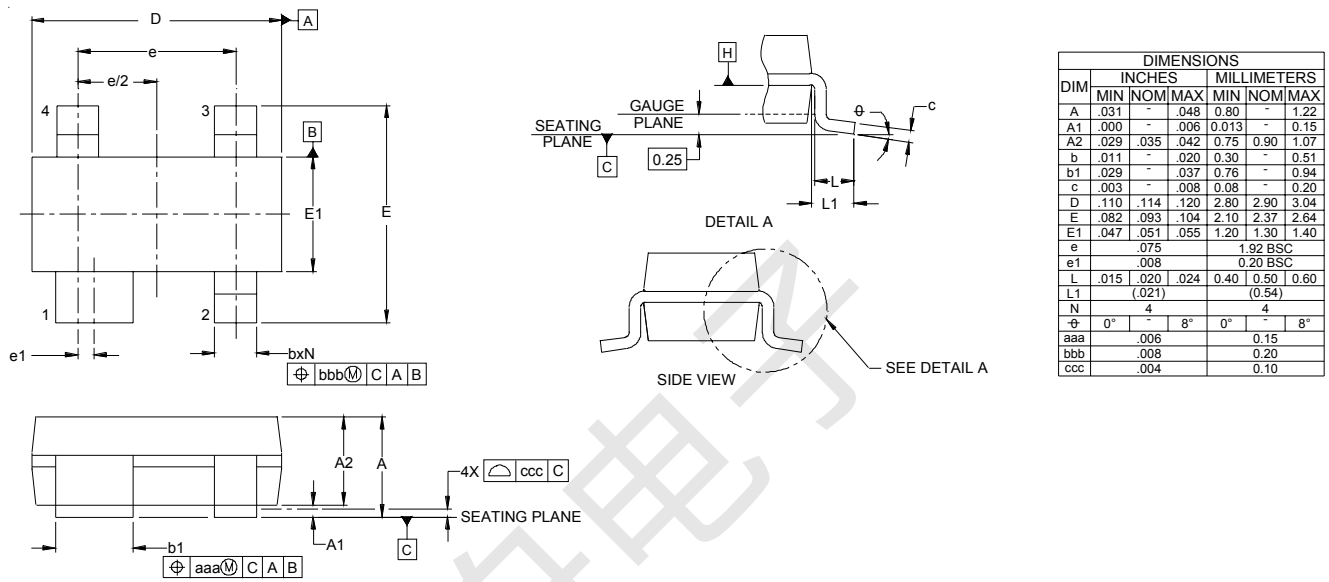


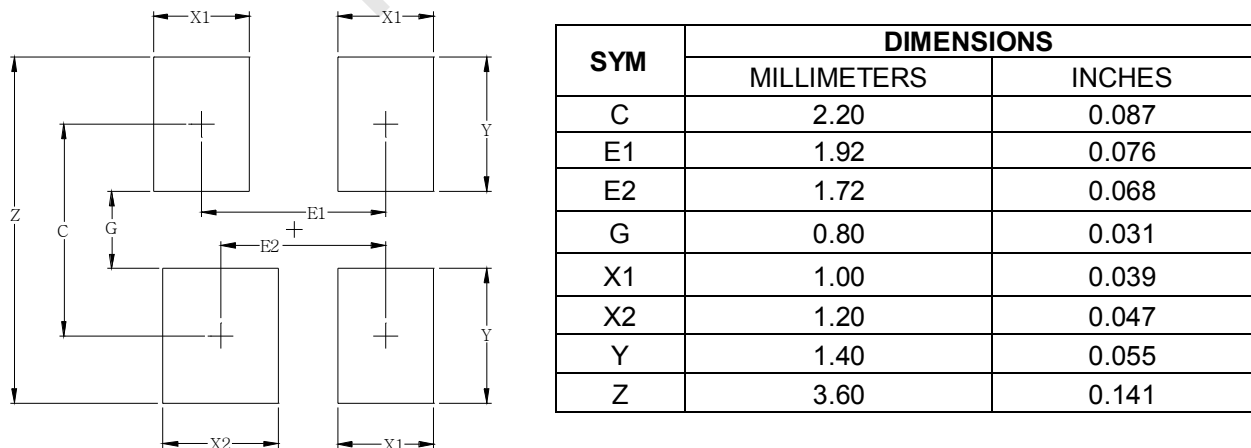
Fig3. Power Derating Curve



Outline Drawing - SOT-143



Land Pattern -SOT-143



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