Features

- 432 Watts Peak Pulse Power per Line (tp = 8/20μs)
- Bidirectional Configuration
- Protects One Power or I/O Port
- Low Clamping Voltages
- Ultra Low Capacitance: 0.8 pF Typical

Mechanical Characteristics

- Molded JEDEC SOD-323 package
- Weight 10 milligrams (Approximate)
- Flammability rating UL 94V-0
- 8mm Tape and Reel Per EIA Standard 481
- Device Marking: Marking Code
- RoHS Compliant& HF

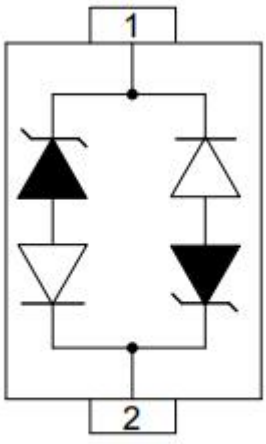
Applications

- Ethernet - 10/100/1000 Base T
- Cellular Phones
- Handheld - Wireless Systems
- Personal Digital Assistant (PDA)
- USB Interface

IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5(Surge): 24A (8/20μs)

Pin Configuration



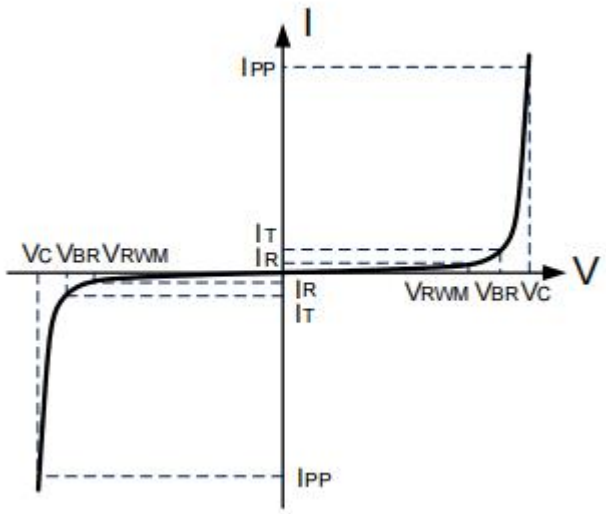
BIDIRECTIONAL

Absolute Maximum Ratings

Rating	Symbol	Value	Units
Peak Pulse Power (t_p=8/20μs)	P_{PP}	432	W
Peak Pulse Current(t_p=8/20μs)	I_{PP}	24	A
Operating Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Parameters

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



Electrical characteristics(T=25℃ unless otherwise noted)

CTSY3V3X1B2MB

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				3.3	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	4.0		7.0	V
Reverse Leakage Current	I_R	V_{RWM}=3.3V			100	nA
Clamping Voltage	V_C	I_{PP}=1A, t_p=8/20μs			6	V
Clamping Voltage	V_C	I_{PP}=24A, t_p=8/20μs		15	18	V
ESD Clamping Voltage[1]	V_C	I_{PP} = 4A t_p = 0.2/100ns		7.0		V
ESD Clamping Voltage[1]	V_C	I_{PP} = 16A t_p = 0.2/100ns		10.6		V
Dynamic Resistance[1,2]	R_{DYN}	TLP=0.2/100ns		0.3		Ω
Junction Capacitance	C_j	V_R = 0V, f= 1MHz		0.8	1.3	pF

Note: 1、TLP Setting：t_p=100ns, t_r=0.2ns, I_{TLP} and V_{TLP} sample window:t_1=70ns to t_2=90ns.
2、Dynamic resistance calculated from I_{PP}=4A to I_{PP}=16A using "Best Fit".

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

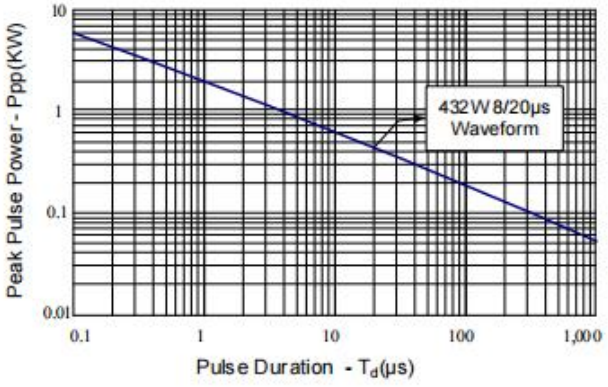


Figure 2: Power Derating Curve

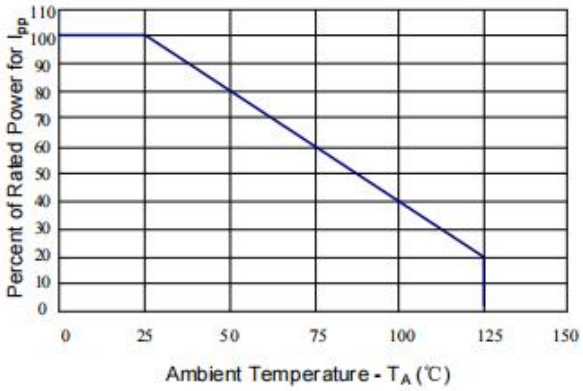


Figure 3: Clamping Voltage vs. Peak Pulse Current

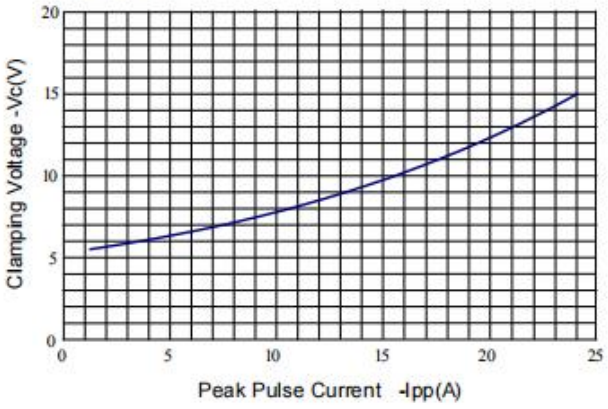


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

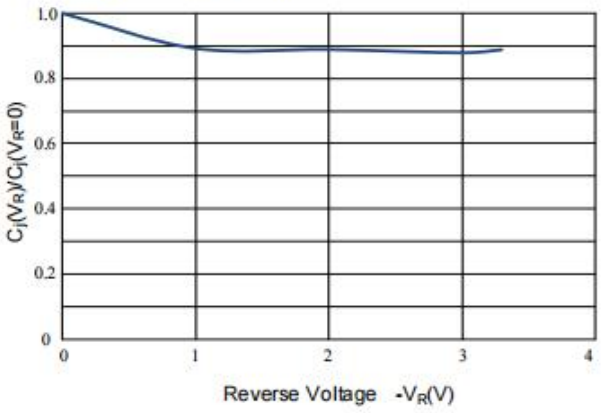


Figure 5: TLP Positive I-V Curve

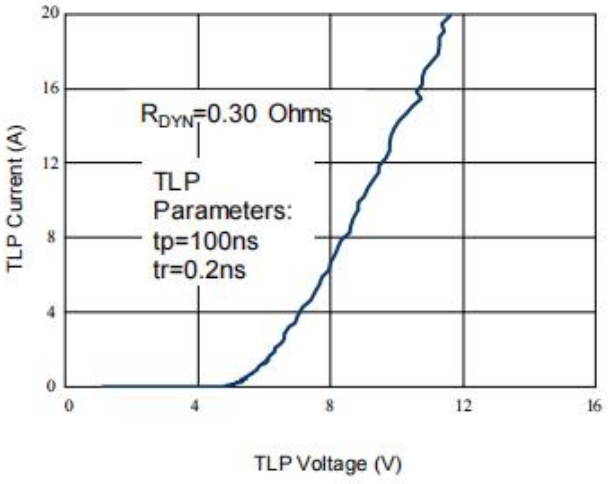
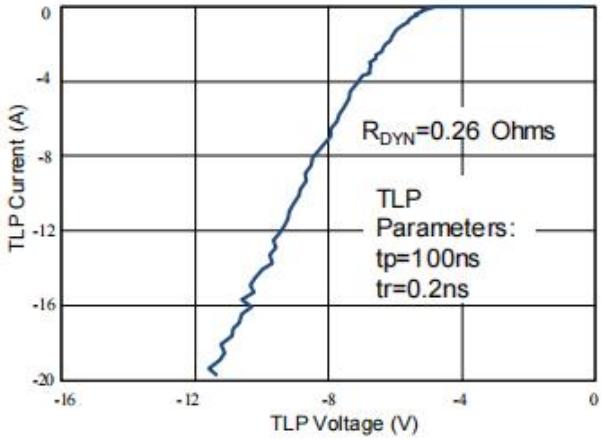
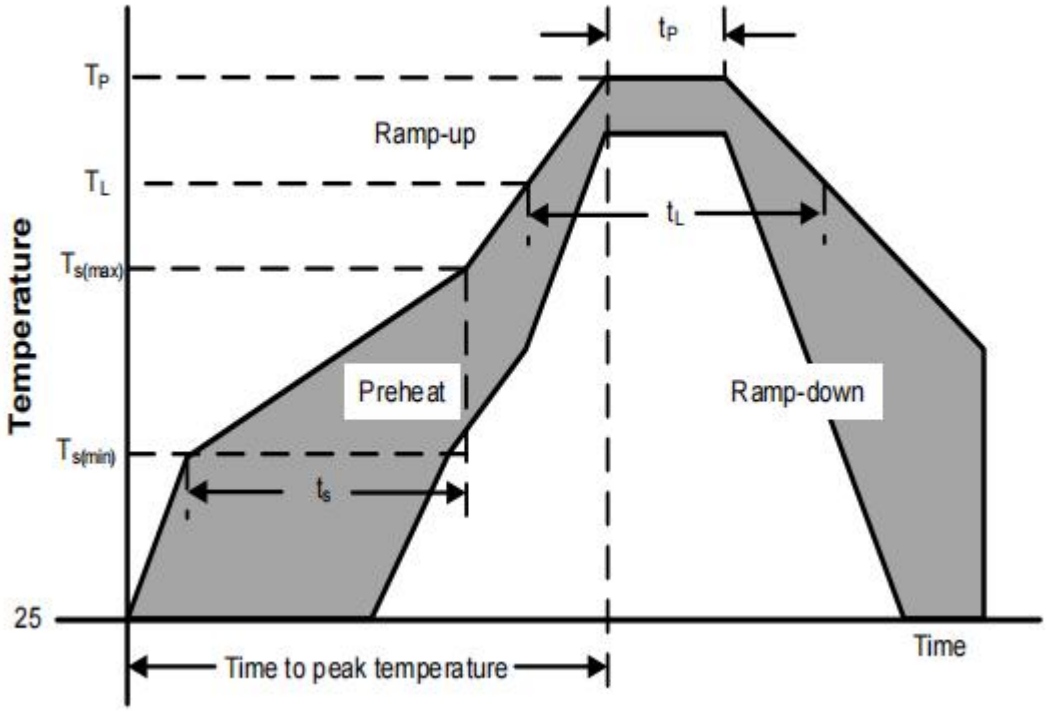


Figure 6: TLP Negetive I-V Curve

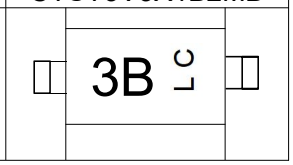


Soldering Parameters

Reflow Condition		Pb - Free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (ts)	60 - 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L——Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60 - 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within actual peak Temperature (t_p)		20 - 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C



Marking Codes

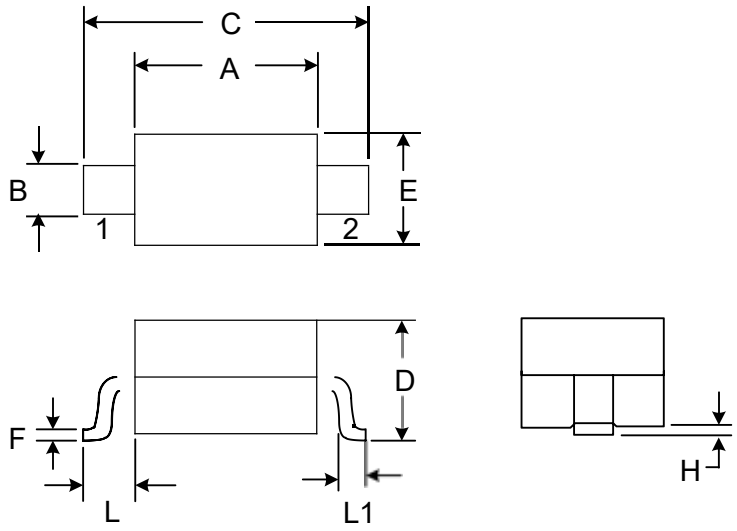
Part Number	CTSY3V3X1B2MB
Marking Code	

Package Information

Qty：3k/Reel

Outline Drawing - SOD-323

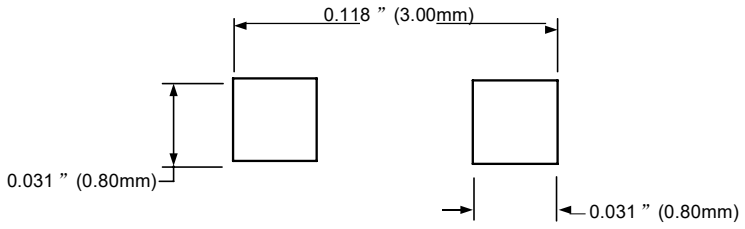
PACKAGE OUTLINE



SOD-323

SYMBOL	MILLIMETERS	
	MIN	MAX
A	1.52	1.80
B	0.25	0.40
C	2.46	2.71
D	0.80	1.16
E	1.11	1.40
F	0.08	0.20
L	0.475 REF	
L1	0.25	0.40
H	0.00	0.10

MOUNTING PAD



Notes:
Controlling Dimension: Millimeter.