TQTHD2124V5

Mount TVS Diode for ESD Protection

● Description

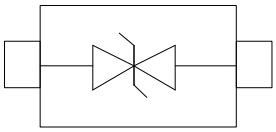
The TQTHD2124V5 Series is designed with TECH CHIP technology to protect voltage sensitive components from Surge. Excellent clamping capability ,low leakage,and fast response time provide best in class protection on designs that are exposed to surge.

It has been specifically designed to protect sensitive components which are connected to data and transmission lines from over voltage caused by ESD(electrostatic discharge),and EFT(electrical fast transients).

● Feature

- 2500W peak pulse power (tP = 8/20μs)
- SOD-323 Package
- Working voltage: 4.5V
- Low clamping voltage
- Low capacitance
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD)±15kV(air),±8kV(contact)

● PIN configuration



SOD-323

● Applications

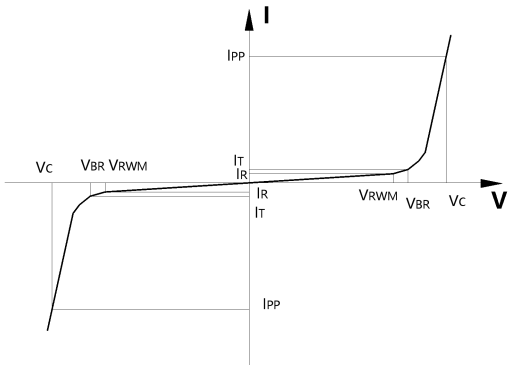
- DVI & HDMI Port Protection
- Serial and Parallel Ports
- Projection TV
- Notebooks, Desktops, Server
- USB 1.1/2.0/3.0/3.1/OTG

● Machanical data

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness:≤3mil

● Electronic Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C	Junction Capacitance



- **Absolute maximum rating @TA=25℃**

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power(8/20uS)	2500	W
T_{STG}	Storage Temperature	-55/+150	℃
T_L	Operating Temperature	-55/+150	℃

- **Electrical Characteristics @TA=25℃**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground			4.5	V
Breakdown Voltage	V_{BR}	It = 1mA Any I/O to Ground		5		V
Reverse Leakage Current	I_R	VRWM =5.0V, T=25℃			1	uA
Clamping Voltage	V_C	IPP =50A, tP = 8/20μs		8		V
Clamping Voltage	V_C	IPP =180A, tP = 8/20μs		12	13.8	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz, Between I/O pins		400		pF

- **Typical Performance Characteristics**

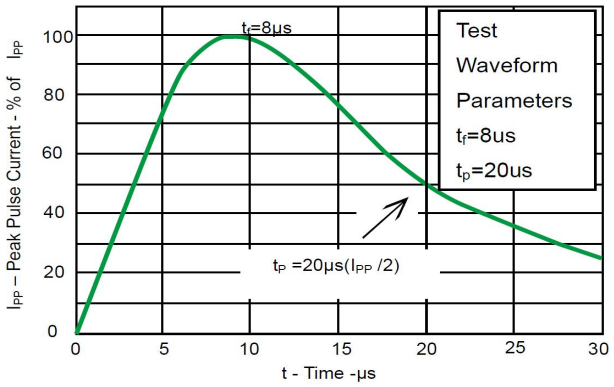


Fig 1.Pulse Waveform

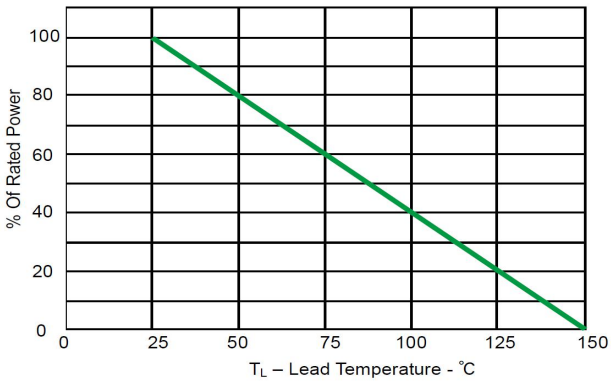
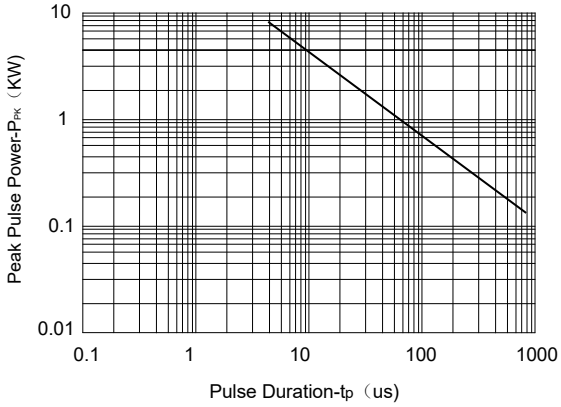


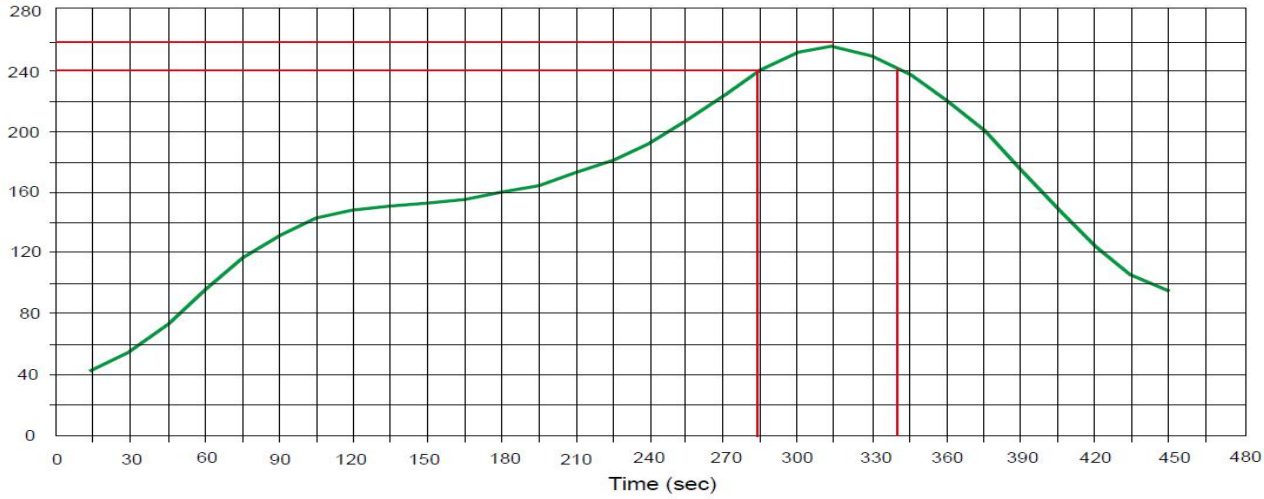
Fig 2.Power Derating Curve



Non-Repetitive Peak Pulse Power vs. Pulse Time

● Solder Reflow Recommendation

Peak Temp=257℃, Ramp Rate=0.802deg. ℃/sec



- **Package Information**

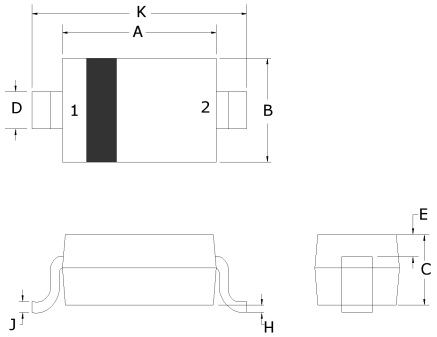
Ordering Information

Device	Marking	Package	Qty per Reel	Reel Size
TQTHD2124V5	D4	SOD-323	3000	7 Inch

Mechanical Data

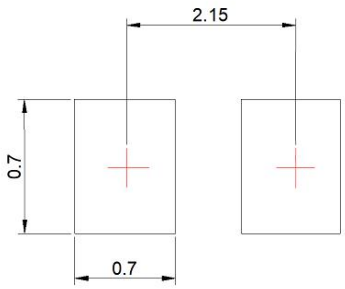
Case: SOD-323

Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	Min	Max
A	1.60	1.80
B	1.2	1.40
C	0.80	0.90
D	0.25	0.35
E	0.15REF	
H	0	0.10
J	0.08	0.15
K	2.50	2.70

Recommended Pad outline



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