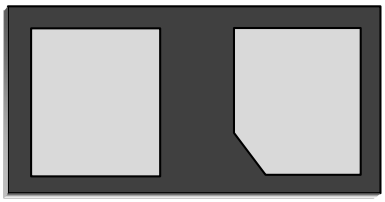
WS05DTRMS-B

Transient Voltage Suppressor

Features

- Small Body Outline Dimensions
- Only protects one I/O
- Low Capacitance
- Working Voltage:5V
- Low Leakage Current



DFN0603-2L

IEC COMPATIBILITY (EN61000-4)

- **IEC 61000-4-2 (ESD) ±10kV (air), ±8kV (contact)**
- **IEC 61000-4-4 (EFT) 40A (5/50ns)**
- **IEC 61000-4-5 (Lightning) 2A (8/20μs)**

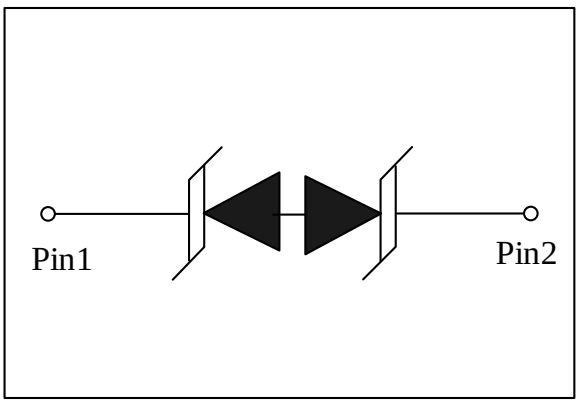
Mechanical Characteristics

- DFN0603-2L package
- Marking: Marking Code
- Packaging: Tape and Reel
- RoHS Compliant

Applications

- USB 2.0 and USB 3.0
- HDMI 1.3 and HDMI 1.4
- SATA and ESATA
- DVI
- IEEE 1394
- PCI Express
- Portable Electronics
- Notebooks

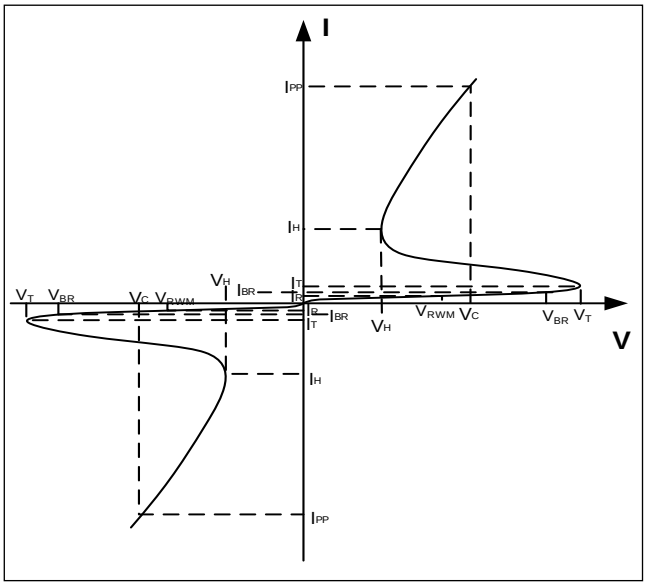
Schematic & PIN Configuration



Absolute Maximum Rating			
Rating	**Symbol**	**Value**	**Units**
Peak Pulse Power (t_p =8/20μs)	P_{PP}	16	W
Peak Pulse Current (t_p =8/20μs)	I_{pp}	2	A
Operating Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Parameters (T=25℃)

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



Electrical Characteristics

WS05DTRMS-B						
Parameter	**Symbol**	**Conditions**	**Minimum**	**Typical**	**Maximum**	**Units**
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	5.6			V
Reverse Leakage Current	I_R	V_{RWM}=5.0V, T=25°C			100	nA
Holding current	I_H	T=25℃		50		mA
Clamping Voltage	V_C	I_{PP}=2A, t_p=8/20μs		6.2	8	V
Dynamic Resistance[1,2]	R_{DYN}	TLP=0.2/100ns		0.68		Ω
ESD Clamping Voltage[1]	V_C	IPP = 4A, tp = 0.2/100ns (TLP)		6.6		V
ESD Clamping Voltage[1]	V_C	IPP = 16A, tp = 0.2/100ns (TLP)		14.9		V
Junction Capacitance	C_j	V_R = 0V, f= 1MHz		0.30	0.45	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

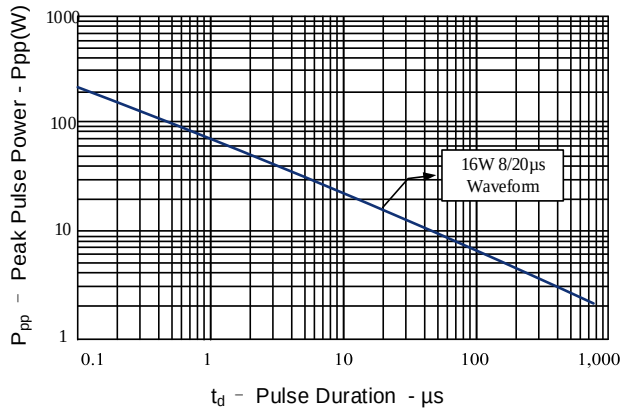


Figure 2: Power Derating Curve

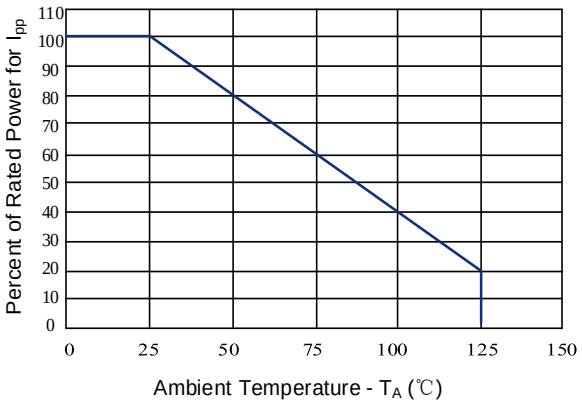


Figure 3: Clamping Voltage vs. Peak Pulse Current

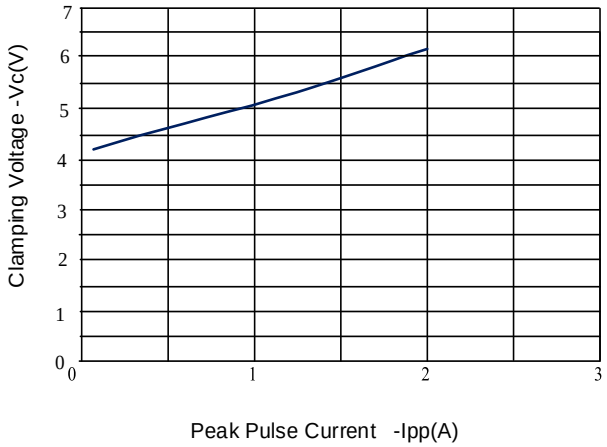


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

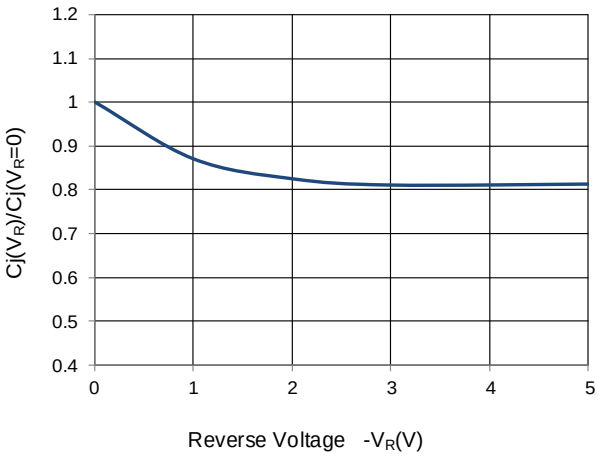


Figure 5: TLP Positive I-V Curve

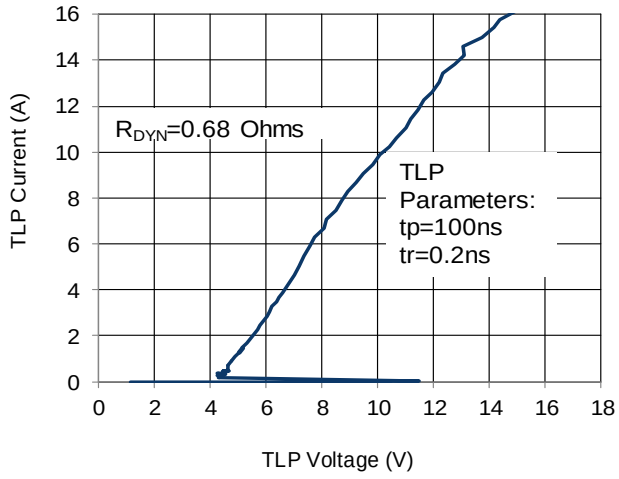
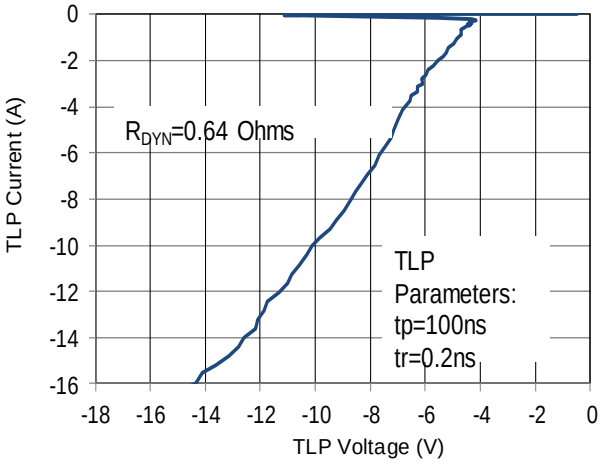
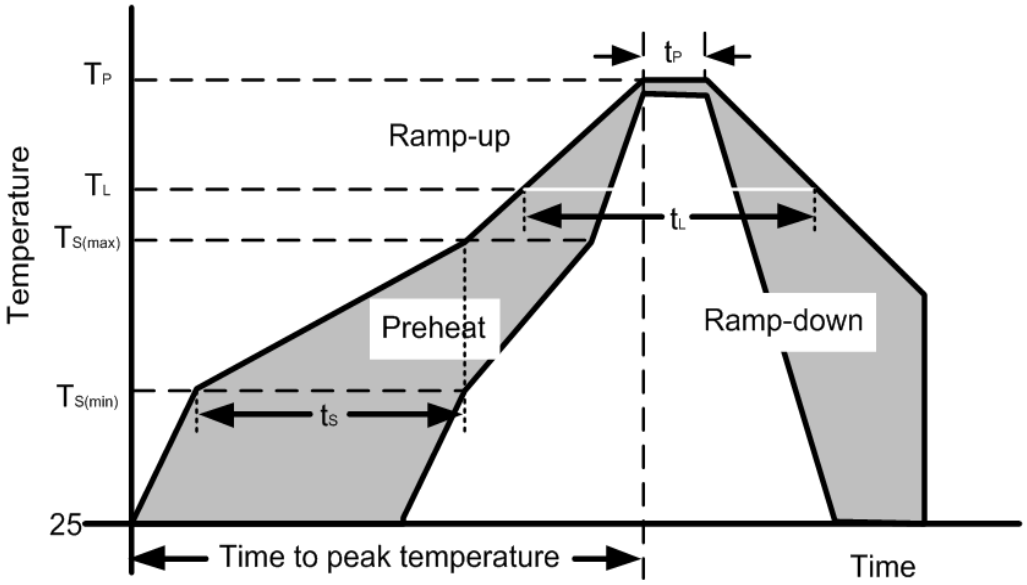


Figure 6: TLP Negative I-V Curve



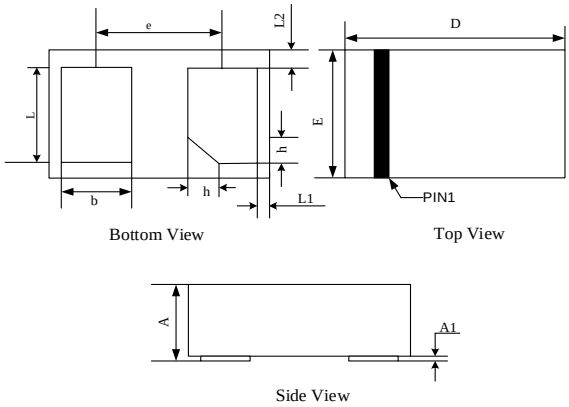
Soldering Parameters

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



Outline Drawing –DFN0603-2L

PACKAGE OUTLINE



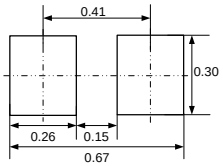
Bottom View Top View

Side View

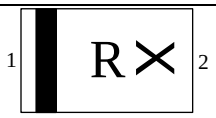
DFN0603-2L

SYMBOL	MILLIMETERS			Dimension In Inches		
	NOM	MIN	MAX	NOM	MIN	MAX
A	--	0.280	0.320	--	0.011	0.013
A1	--	--	0.050	--	--	0.002
D	0.620	0.590	0.640	0.024	0.023	0.025
E	0.320	0.290	0.340	0.012	0.011	0.013
b	0.180	0.155	0.205	0.007	0.006	0.008
L	0.240	0.215	0.265	0.009	0.008	0.010
h	--	0.050	0.100	--	0.002	0.004
L1	0.040REF			0.002REF		
L2	0.040REF			0.002REF		
e	0.360BSC			0.014BSC		

Land Pattern



Marking Codes

Part Number	Marking Code
WS05DTRMS-B	

R=Specific Device Code
X=Month Code

Package Information

Qty：15k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.