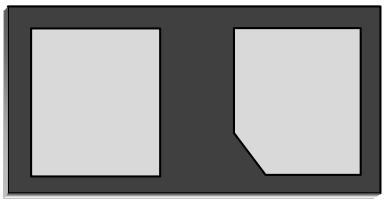
WE05DGCMS-BH

Transient Voltage Suppressor

Features

- Small Body Outline Dimensions: 0.60mm x 0.30 mm
- Protects one I/O or power line
- Low Clamping Voltage
- Ultra Low Capacitance:0.15pF
- Working Voltage: 5 V
- Low Leakage Current



DFN0603-2L

IEC COMPATIBILITY (EN61000-4)

- **IEC 61000-4-2 (ESD) ±15kV (air), ±12kV (contact)**
- **IEC 61000-4-4 (EFT) 40A (5/50ns)**
- **IEC 61000-4-5 (Lightning) 3A (8/20μs)**

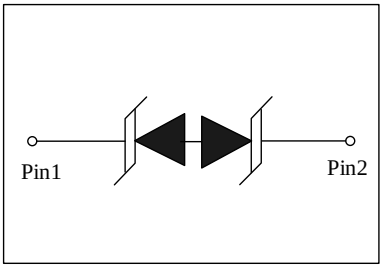
Mechanical Characteristics

- DFN0603-2L package
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant & HF
- Device meets MSL1 requirement

Applications

- HDMI 1.4 and HDMI 2.0
- USB 3.0 and USB 3.1
- USB Type-C
- Thunderbolt
- MIPI/MDDI
- 10GbE
- DVI

Schematic & PIN Configuration

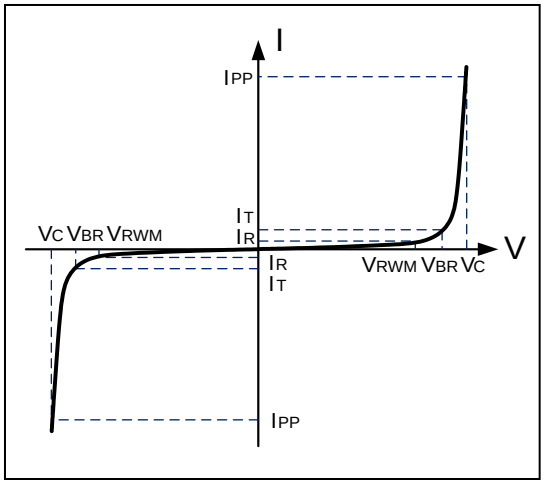


Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power（t_p =8/20μs）	P_{PP}	63	W
Peak Pulse Current（t_p =8/20μs）	I_{PP}	3	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)

WE05DGCMS-BH						
Parameter	**Symbol**	**Conditions**	**Minimum**	**Typical**	**Maximum**	**Units**
Reverse Stand-Off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6			V
Reverse Leakage Current	I_R	V_{RWM}=5V			500	nA
Clamping Voltage	V_C	I_{PP}=3A, t_p=8/20μs		17.5	21	V
ESD Clamping Voltage[1]	V_C	I_{PP} = 4A t_p = 0.2/100ns		13.1		V
ESD Clamping Voltage[1]	V_C	I_{PP} = 16A t_p = 0.2/100ns		26.7		V
Dynamic Resistance[1,2]	R_{DYN}	TLP=0.2/100ns		1.13		Ω
Junction Capacitance	C_j	V_R = 0V, f= 1MHz		0.15	0.23	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

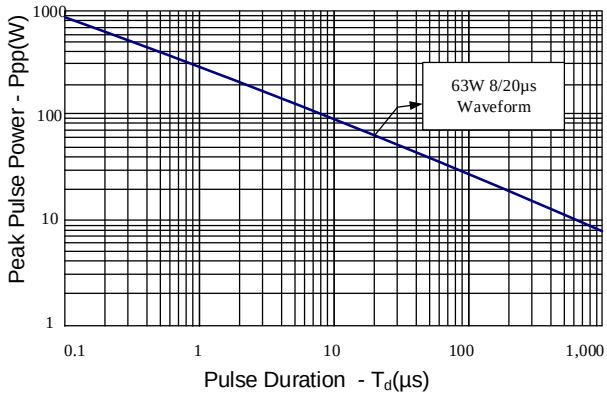


Figure 2: Power Derating Curve

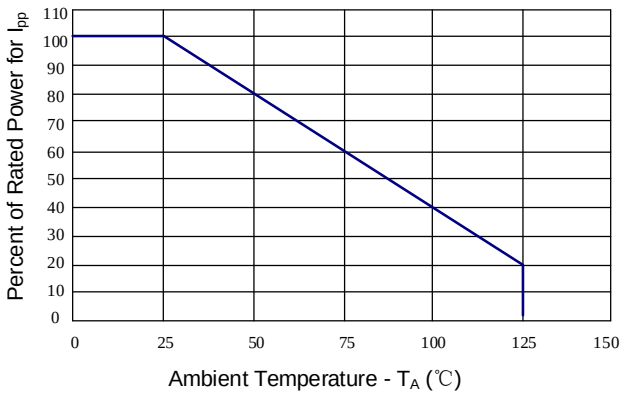


Figure 3: Clamping Voltage vs. Peak Pulse Current

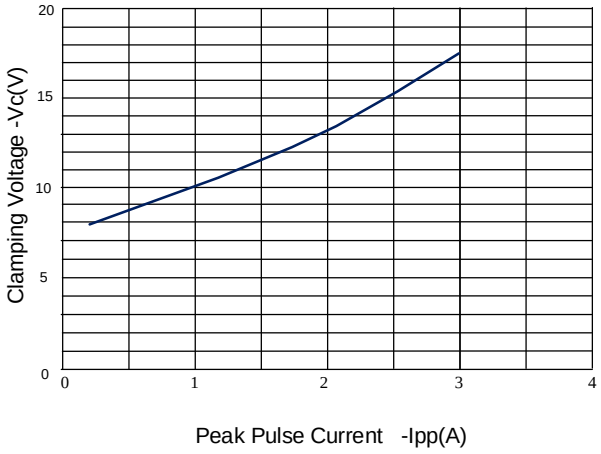


Figure 4: Capacitance vs. Reverse Voltage

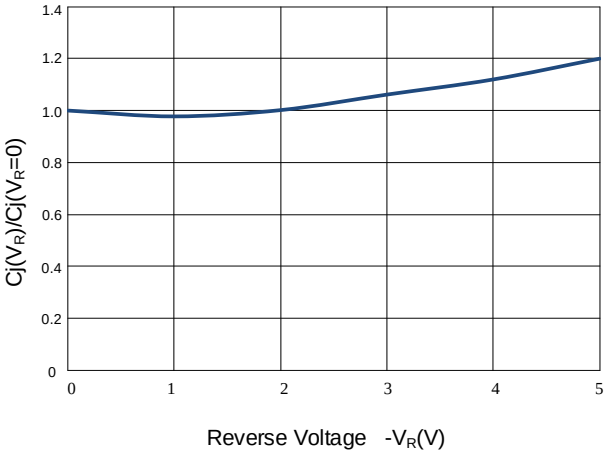


Figure 5: TLP Positive I-V Curve

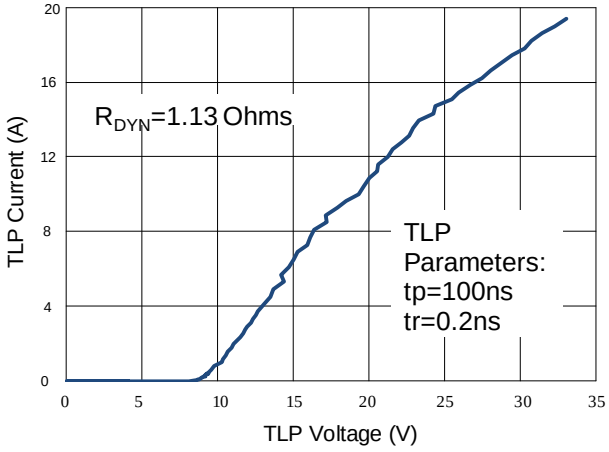
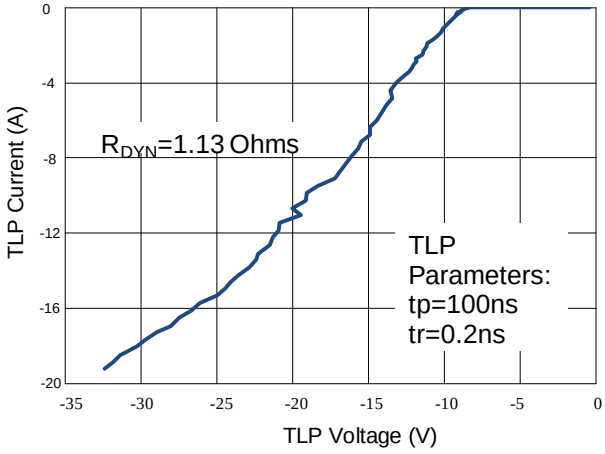
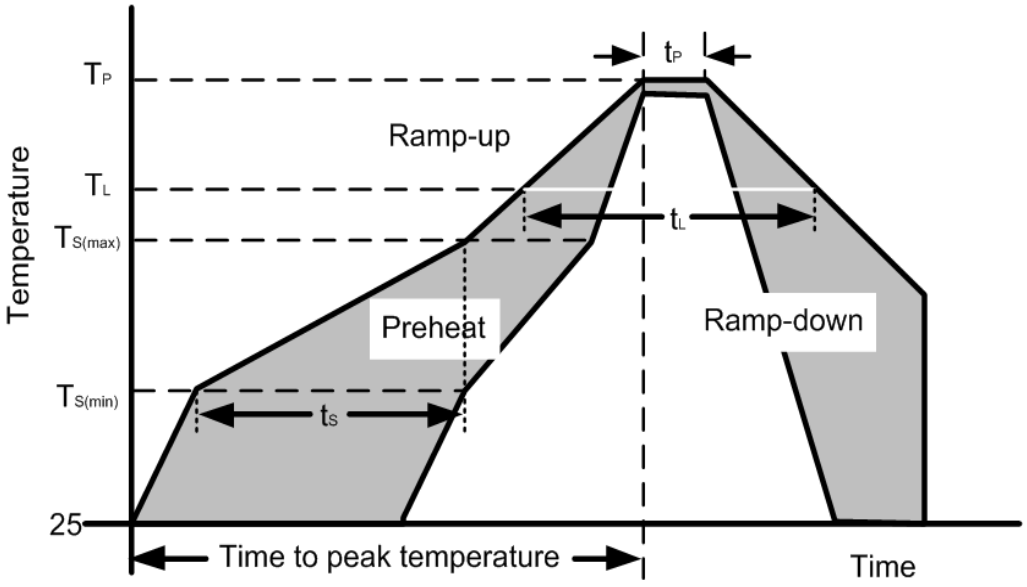


Figure 6: TLP Negative I-V Curve



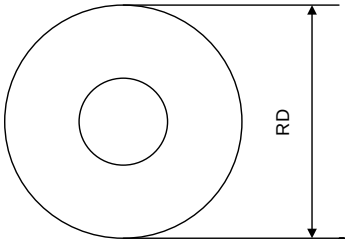
Soldering Parameters

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

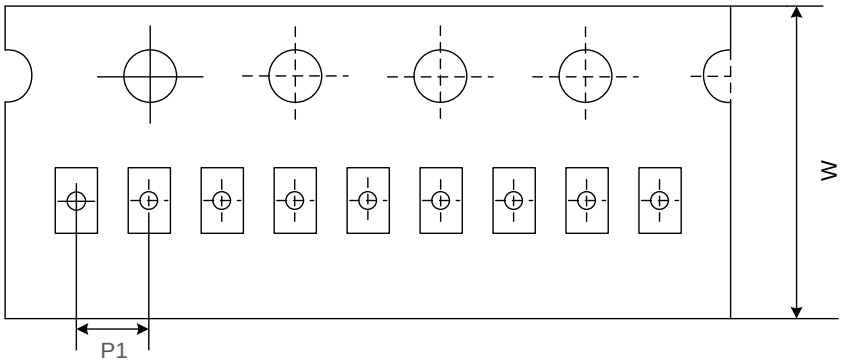


Tape And Reel Information

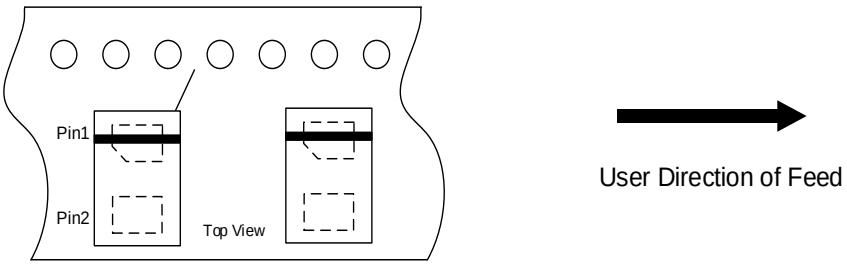
Reel Dimensions



Tape Dimensions



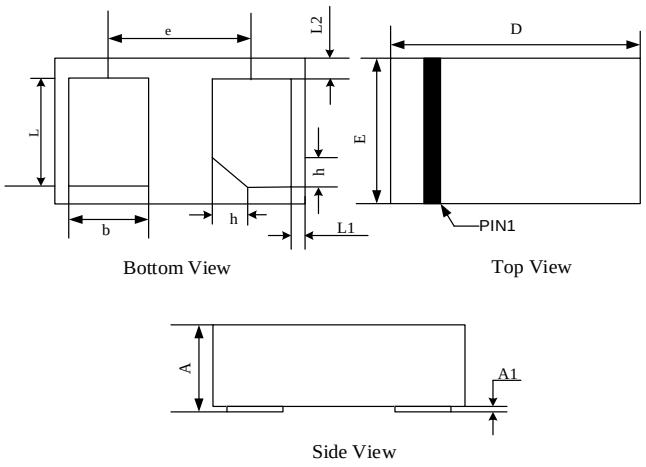
Quadrant Assignments For PIN1 Orientation In Tape



RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	2mm

Outline Drawing –DFN0603-2L

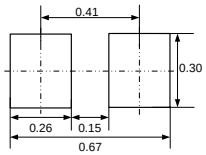
PACKAGE OUTLINE



DFN0603-2L

SYMBOL	MILLIMETERS		
	NOM	MIN	MAX
A	0.300	0.280	0.320
A1	--	--	0.050
D	0.620	0.590	0.640
E	0.320	0.290	0.340
b	0.180	0.155	0.205
L	0.240	0.215	0.265
h	--	0.050	0.100
L1	0.040REF		
L2	0.040REF		
e	0.360BSC		

Land Pattern



Marking Codes

Part Number	Marking Code
WE05DGCMS-BH	Pin1 G≧ G=Specific Device Code M=Month Code

Package Information

Qty：15k/Reel

CONTACT INFORMATION

No.1001, Shiwan(7) Road, Pudong District, Shanghai, P.R.China.201207
Tel: 86-21-68969993 Fax: 86-21-50757680 Email: market@way-on.com
WAYON website: **http://www.way-on.com**

For additional information, please contact your local Sales Representative.