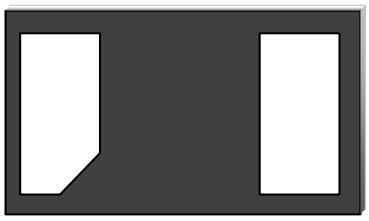
WS2057KP

Transient Voltage Suppressor

Features

- Small Body Outline Dimensions:
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 5V
- Low Leakage Current



DFN1610-2L

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 (Lightning) 170A (8/20μs)**

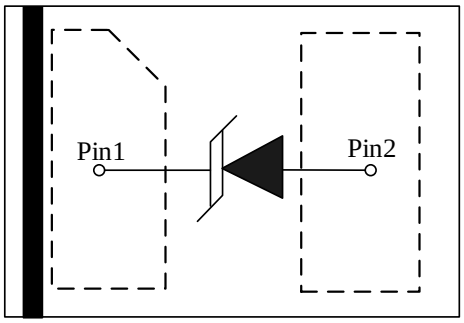
Mechanical Characteristics

- DFN1610-2L package
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant& HF

Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

Schematic & PIN Configuration



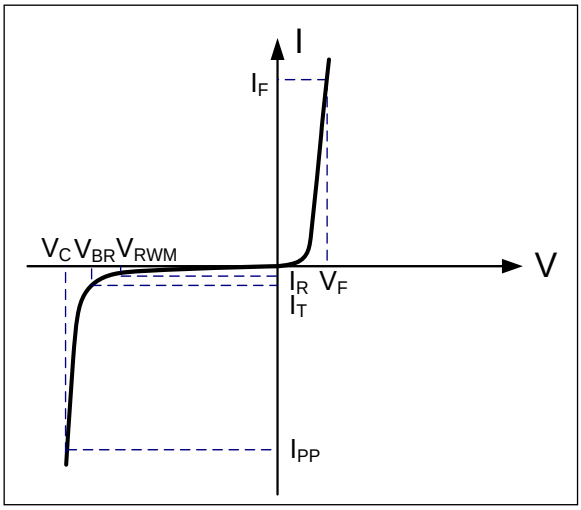
（TOP VIEW）

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power（t_p =8/20μs）	P_{PP}	2040	Watts
Peak Pulse Current（t_p =8/20μs）	I_{PP}	170	A
Operating Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Electrical Parameters

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics(T=25℃ unless otherwise noted)

WS2057KP						
Parameter	**Symbol**	**Conditions**	**Minimum**	**Typical**	**Maximum**	**Units**
Reverse Stand-Off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	5.5		9	V
Forward Voltage	V_F	I_F=10mA	0.6		1.2	V
Reverse Leakage Current	I_R	V_{RWM}=5V			500	nA
Clamping Voltage	V_C	I_{PP}=170A,t_p=8/20μs		10	12	V
Dynamic Resistance[1,2]	R_{DYN}	TLP=0.2/100ns		0.06		Ω
ESD Clamping Voltage[1]	V_C	IPP = 4A, tp = 0.2/100ns (TLP)		6.2		V
ESD Clamping Voltage[1]	V_C	IPP = 16A, tp = 0.2/100ns (TLP)		6.9		V
Junction Capacitance	C_j	V_R=0V, f=1MHz		540	700	pF

Notes：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

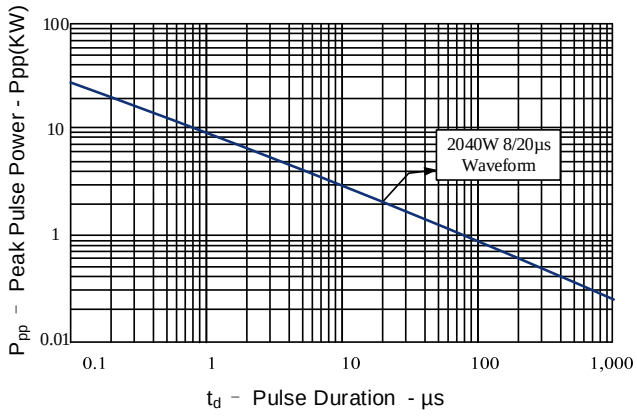


Figure 2: Power Derating Curve

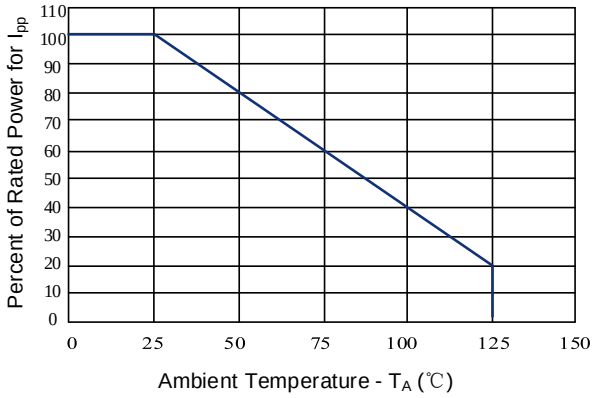


Figure 3: Clamping Voltage vs. Peak Pulse Current

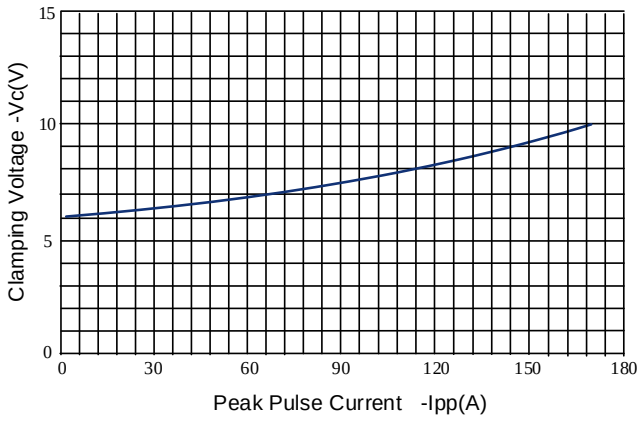


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

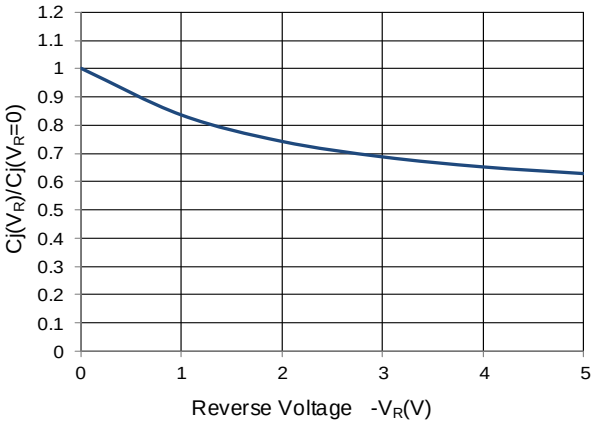


Figure 5: Pulse Waveform

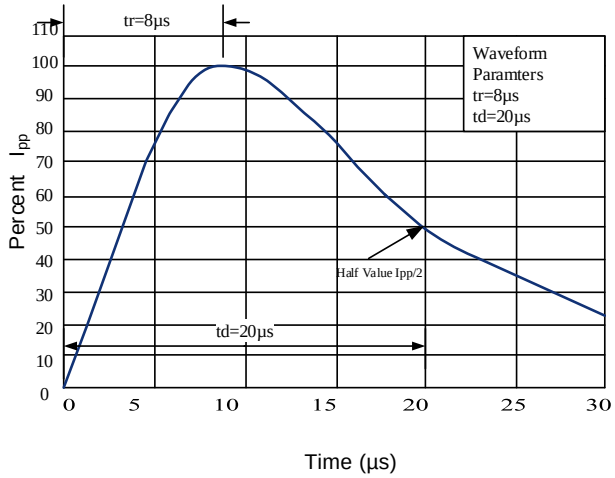
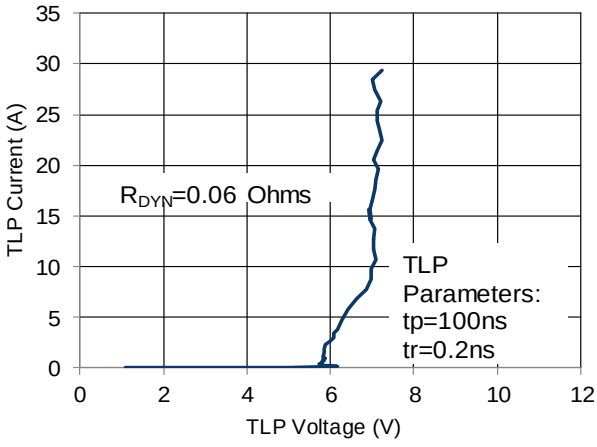
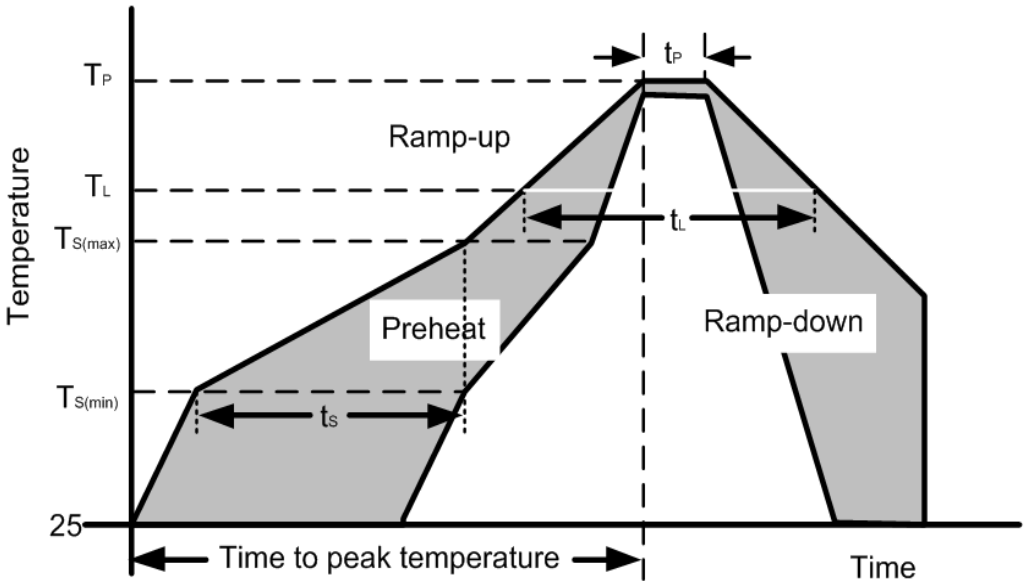


Figure 6: TLP Curve



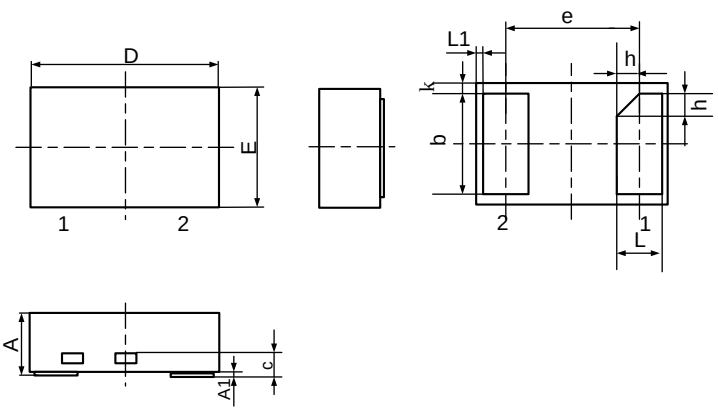
Soldering Parameters

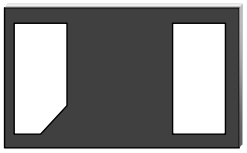
Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (ts)	60 – 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L——Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (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 –DFN1610-2L

PACKAGE OUTLINE





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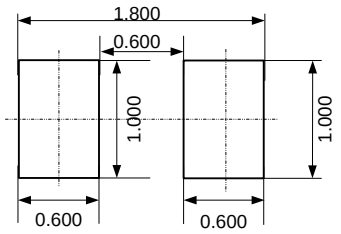
SYMBOL	MILLIMETERS		
	MIN	NOM	MAX
A	0.450	0.500	0.550
A1	0.000	0.020	0.050
b	0.750	0.800	0.850
c		0.152REF	
D	1.550	1.600	1.650
e		1.100BSC	
E	0.950	1.000	1.050
L	0.350	0.400	0.450
L1		0.05REF	
h	0.150	0.200	0.250
k	0.050	0.100	0.150

Land Pattern



Marking Codes

Part Number	Marking Code
WS2057KP	

M=Specific Device Code
XX=Lot Code

Package Information

Qty：10k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.

单击下面可查看定价，库存，交付和生命周期等信息

>>WAY-ON(维安)