

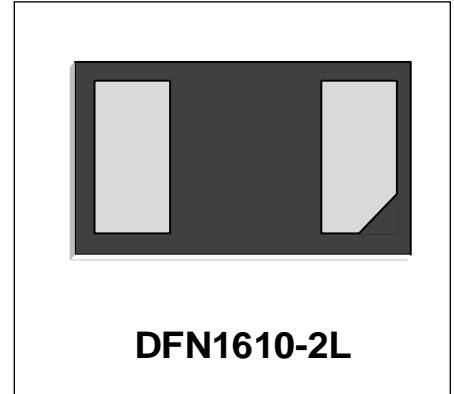


Features

- Small Body Outline Dimensions
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 4.5V
- Low Leakage Current
- AEC-Q101 Qualified

IEC Compatibility (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 130A (8/20 μs)



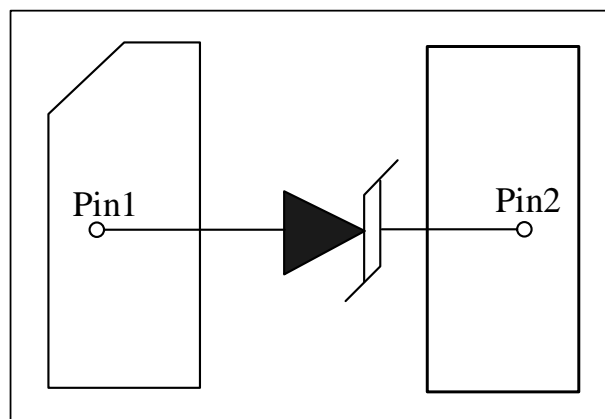
Mechanical Characteristics

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

Applications

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

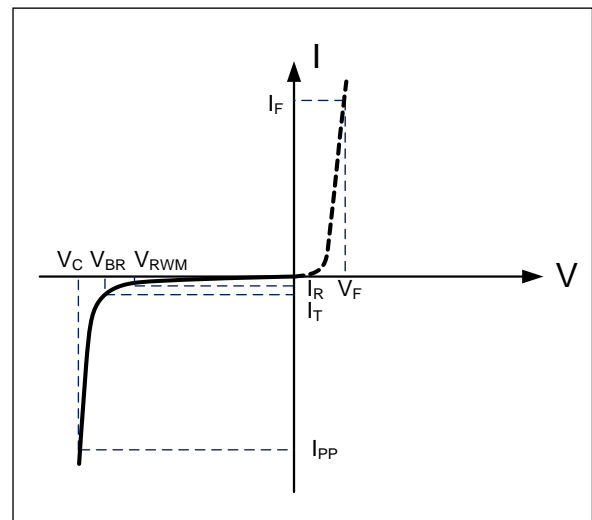
Schematic & PIN Configuration



Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P_{PP}	1560	Watts
Peak Pulse Current ($t_p=8/20\mu s$)	I_{PP}	130	A
Operating Temperature	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Parameters (T=25 $^{\circ}C$)

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
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics

DW4.5DPV-AT-S						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				4.5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	4.8		6.5	V
Forward Voltage	V_F	$I_F=10mA$	0.6		1.0	V
Reverse Leakage Current	I_R	$V_{RWM}=4.5V, T=25^{\circ}C$			500	nA
Clamping Voltage	V_C	$I_{PP}=130A, t_p=8/20\mu s$		10	12	V
Dynamic Resistance ^{1,2}	R_{DYN}	TLP=0.2/100ns		0.04		Ω
ESD Clamping Voltage ¹	V_C	$I_{PP} = 4A,$ $t_p = 0.2/100ns$ (TLP)		5.76		V
ESD Clamping Voltage ¹	V_C	$I_{PP} = 16A,$ $t_p = 0.2/100ns$ (TLP)		6.25		V
Junction Capacitance	C_j	$V_R=0V, f=1MHz$		480	600	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".

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Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

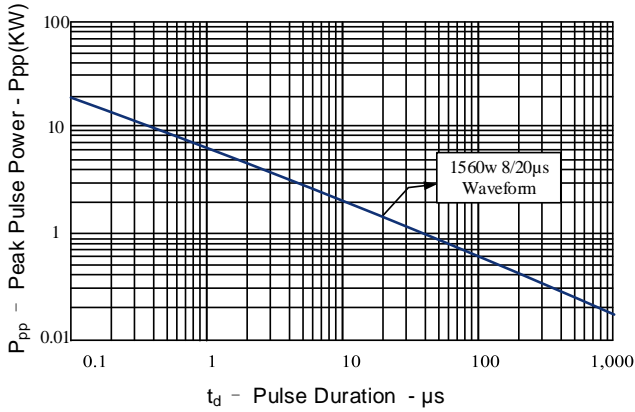


Figure 2: Power Derating Curve

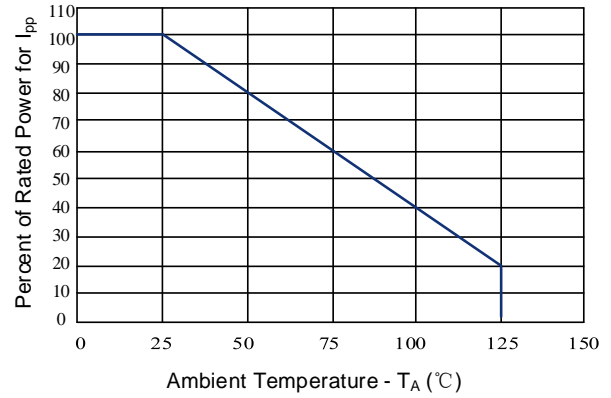


Figure 3: Clamping Voltage vs. Peak Pulse Current

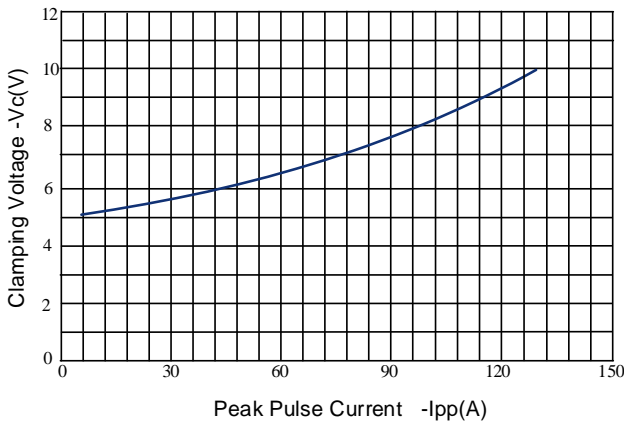


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

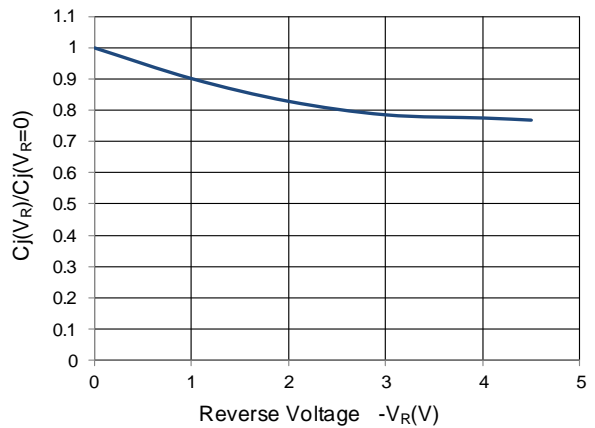


Figure 5: Pulse Waveform

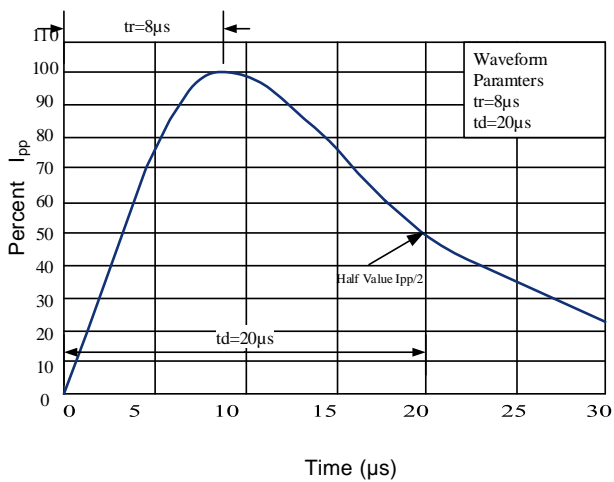
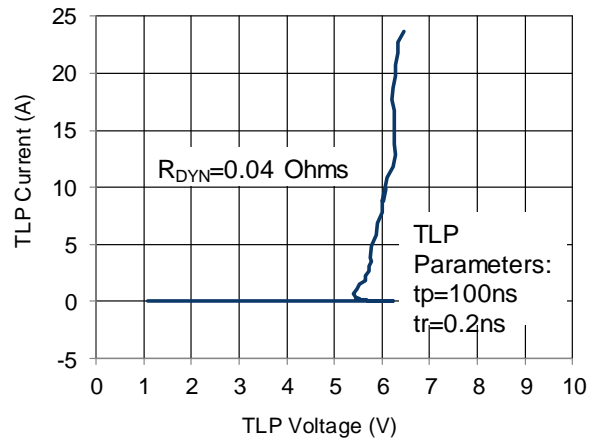


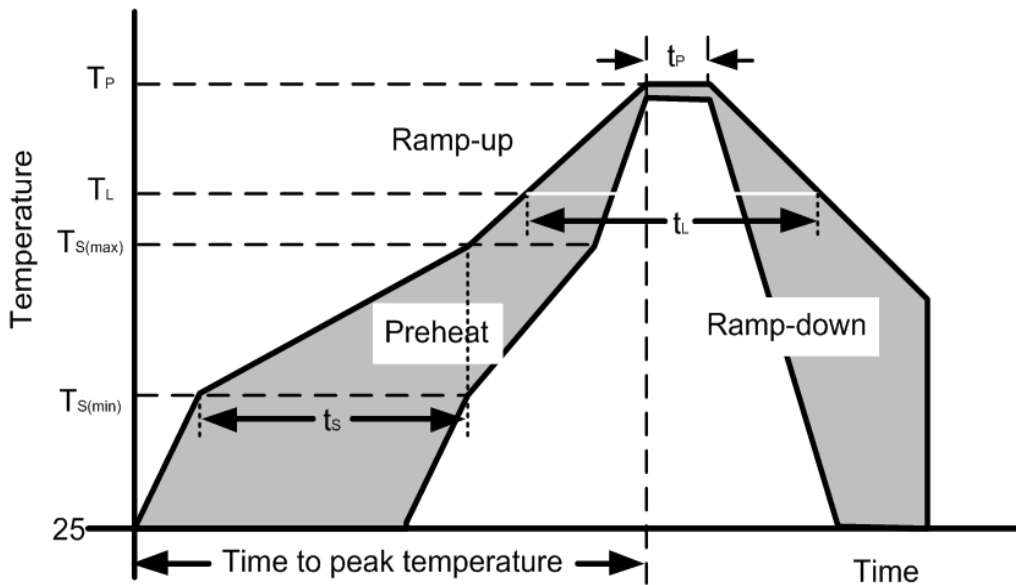
Figure 6: TLP Curve





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) (t_s)	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

TOP VIEW

BOTTOM VIEW

SIDE VIEW

DFN1610-2L

DIMENSIONS			
SYMBOL	MILLIMETERS		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
b	0.75	0.80	0.85
c	0.10	0.15	0.20
D	1.55	1.60	1.65
e	1.10BSC		
E	0.95	1.00	1.05
L	0.35	0.40	0.45
h	0.15	0.20	0.25

Land Pattern

Marking Codes

Part Number	Marking Code
DW4.5DPV-AT-S	<p>M=Specific Device Code X=Month Code</p>

Package Information

Qty: 3k/Reel