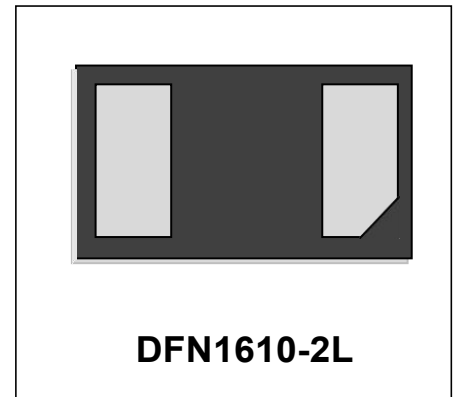


Features

- ◆ Small Body Outline Dimensions:
- ◆ 0.063" x 0.040" (1.6 mm x 1.0 mm)
- ◆ Protects one I/O or power line
- ◆ Low Clamping Voltage
- ◆ Working Voltage: 5V
- ◆ Low Leakage Current
- ◆ Response Time is Typically < 1 ns



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) 160A (8/20µs)

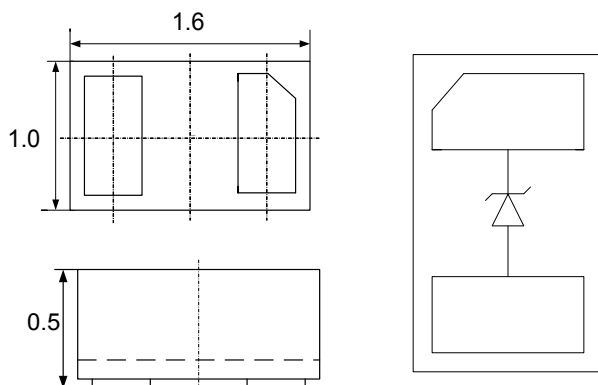
Mechanical Characteristics

- ◆ DFN1610-2L package
- ◆ Molding compound flammability rating:
- ◆ UL 94V-0
- ◆ Marking: Marking Code
- ◆ Packaging: Tape and Reel per EIA 481
- ◆ RoHS Compliant

Applications

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

Dimensions and PIN Configuration



Package Dimensions

Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
ST4871D6	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (TA=25°C unless otherwise specified)

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$)	P _{PP}	2400	Watts
Peak Pulse Current ($t_p=8/20\mu s$)	I _{PP}	160	A
Operating Temperature	T _J	-55 to + 125	°C
Storage Temperature	T _{STG}	-55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

ST4871D6						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V _{RWM}				4.8	V
Reverse Breakdown Voltage	V _{BR}	I _T =1mA	5	6	6.5	V
Forward Voltage	V _F	I _F =10mA	0.6		1.0	V
Reverse Leakage Current	I _R	V _{RWM} =5V, T=25°C			500	nA
Clamping Voltage	V _C	I _{PP} =160A, t _p =8/20μs		11	15	V
Dynamic Resistance ^{1,2}	R _{DYN}	TLP=0.2/100ns		0.06		Ω
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:t₁=70ns to t₂=90ns.

2、 Dynamic resistance calculated from I_{PP}=4A to I_{PP}=16A using 'Best Fit' .

Typical Performance Characteristics (TA=25°C unless otherwise specified)

Figure 1: Peak Pulse Power vs. Pulse Time

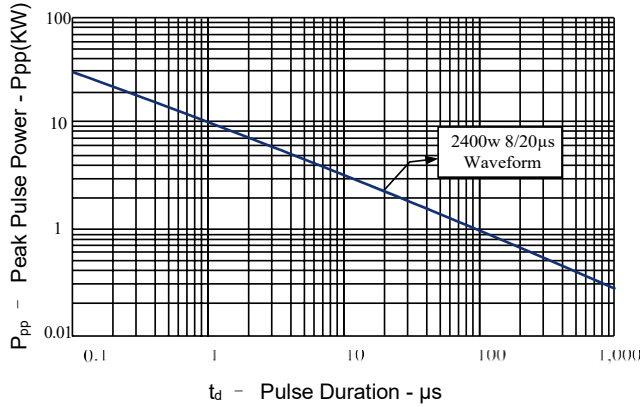


Figure 2: Power Derating Curve

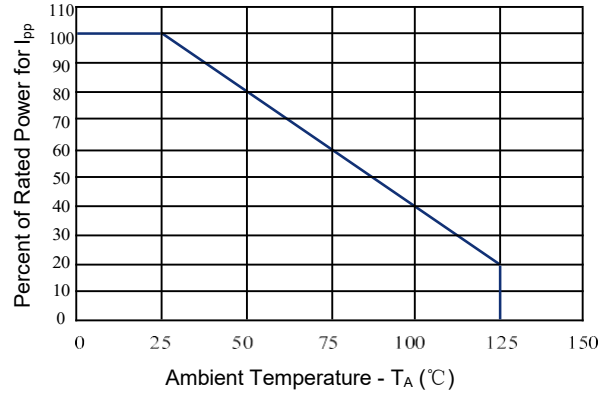


Figure 3: Clamping Voltage vs. Peak Pulse Current

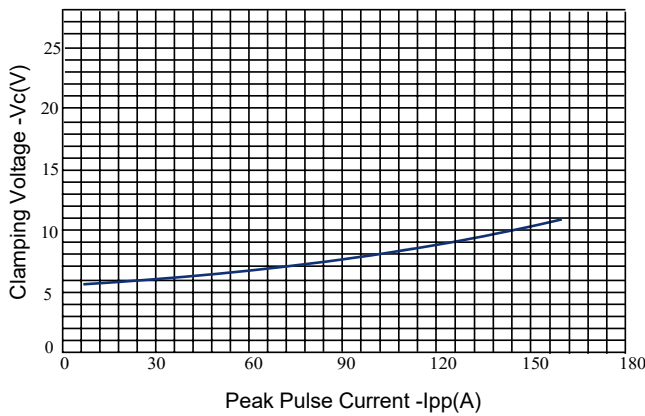


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

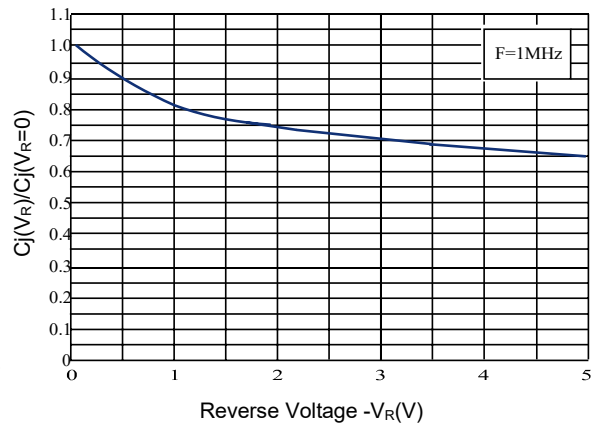


Figure 5: Pulse Waveform

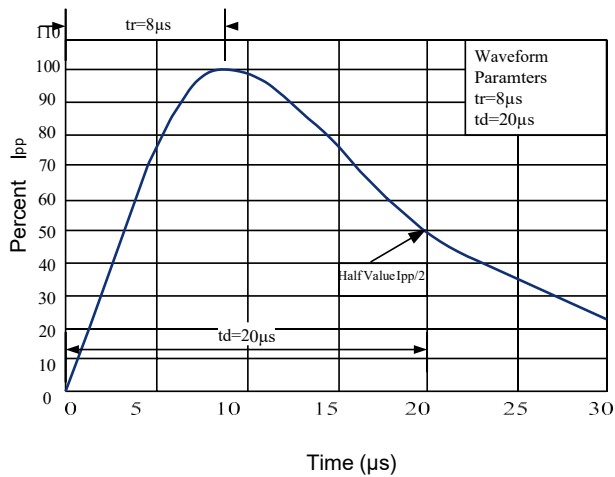
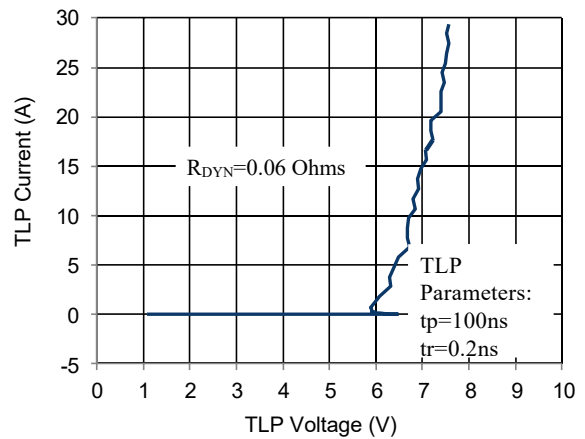
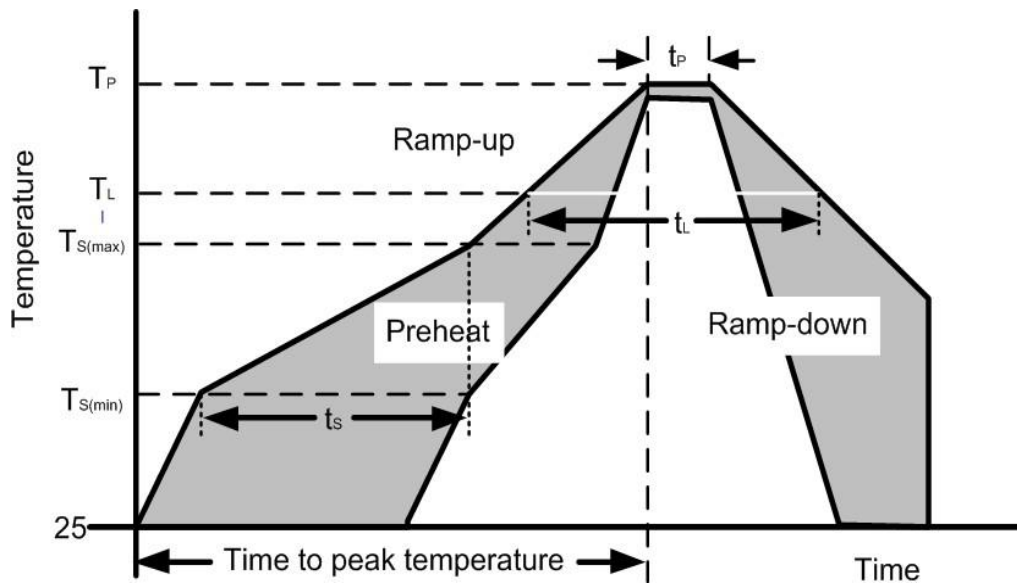


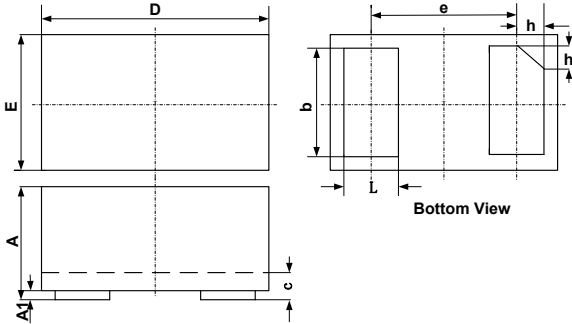
Figure 6: TLP Curve



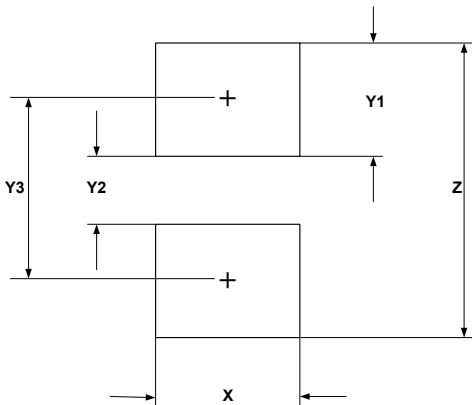
Solderin Parameters

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



DFN1610-2 Package Outline Drawing


SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018
h	0.15	0.20	0.25	0.006	0.008	0.010

Suggested Land Pattern


SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074

Contact Information

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