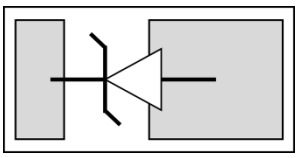
1. Synopsis

1-1. Feature List

- With TVS Diode
- ESD Protection: Level 4
- Low Clamping Voltage
- 1300 Watts Peak Pulse Power Per Line (t_p = 8/20uS)
- Low Clamping Voltage
- Protection One Line I/O Port
- Max. Operating Voltage Options: 24V



DFN1608-2L



1-2. Applications

- Cellular Handsets
- USB V-BUS
- Battery Protection
- Ethernet
- Digital Lines

1-3. IEC Compatibility

- EN61000-4
- 61000-4-2(ESD): Level 4, Contact: ±30KV, Air: ±30KV
- 61000-4-4(EFT): 40A-5/50ns
- 61000-4-5(Surge): 20A-8/20us

1-4. Mechanical Characteristics

- Molded JEDEC DFN1608-2L Package
- Packing: Tape and Reel
- Flammability rating UL 94V-0
- Halogen Free
- Meet AEC-Q101 Qualified
- JEDEC MSL Classification: LEVEL 1

1-5. Device Characteristics

Maximum Ratings@25°C Unless Otherwise Specified

Parameter	Symbol	Values	Units
Peak Pulse Power (t_p = 8/20us)	P_{PP}	1300	W
Operating Temperature	T_J	-55 ~ +150	°C
Storage Temperature	T_{STG}		

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2. Contents

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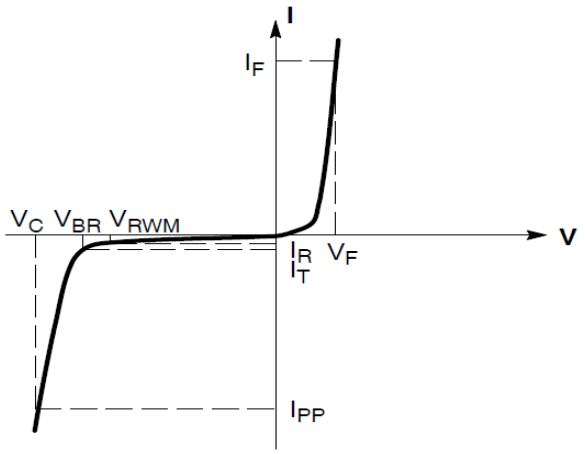
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3. Electrical Property

3-1. Electrical Characteristics

Parameter	Symbol	Condition	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}	Pin 1-2	-	24	V
Reverse Breakdown Voltage	V_{BR}	I_Z = 1mA, Pin-Pin	27	36	
Forward Voltage	V_F	I_F = 15mA	-	0.95	
Clamping Voltage	V_C	I_{PP} = 10A, t_p = 8/20us	-	55	
		I_{PP} = 20A, t_p = 8/20us		65	
Reverse Leakage Current	I_R	@ V_{RWM}	-	1	uA
Peak Pulse Current	I_{PP}	t_p = 8/20us	-	20	A
Junction Capacitance	C_J	Pin Capacitance to GND. V_{dc} = 0V, f = 1MHz	-	165	pF

3-2. I-V Curve Characteristics TA=(25°C)



Uni–Directional TVS

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

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3-3. Ratings and Characteristics Curve

Fig 1. Non-repetitive Peak Pulse Power vs. Pulse Time

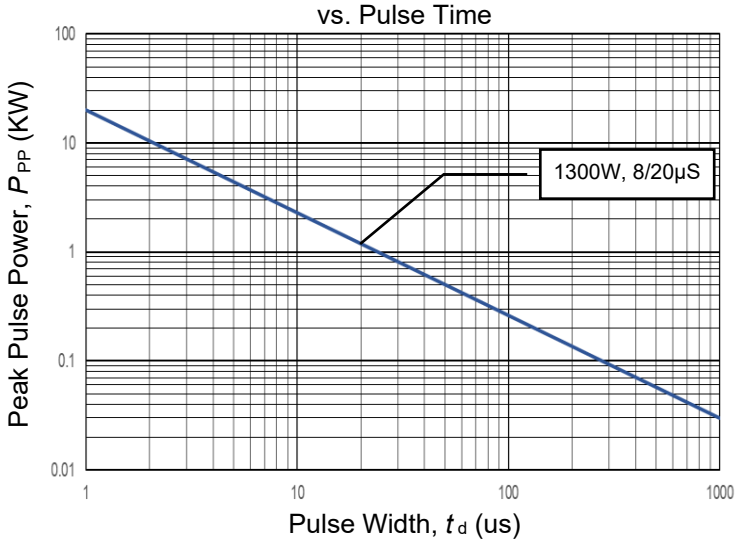


Fig 2. V_C & I_{PP} Drawing

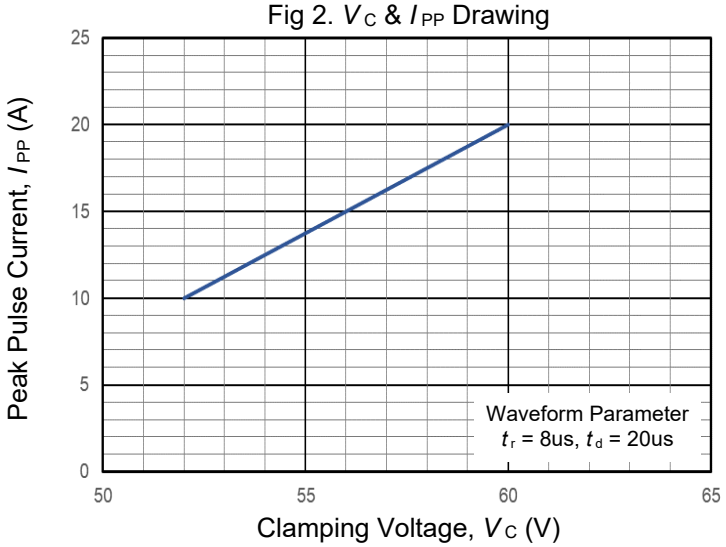


Fig 3. Power Derating Curve

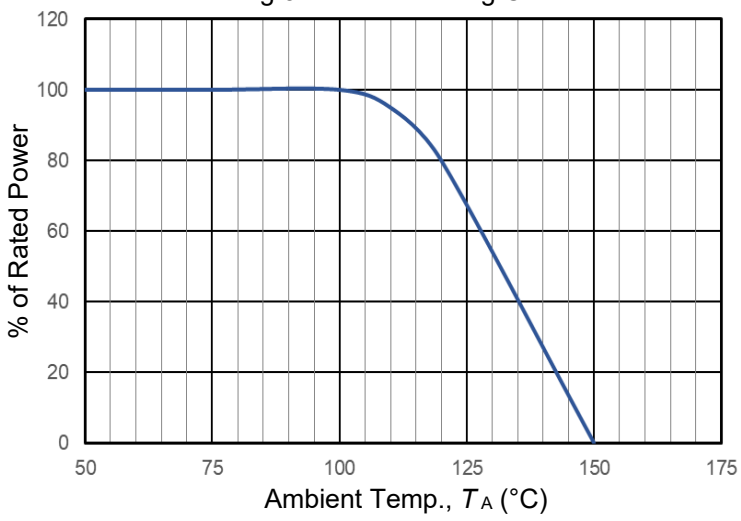


Fig 4. Capacitance vs. Reverse Voltage

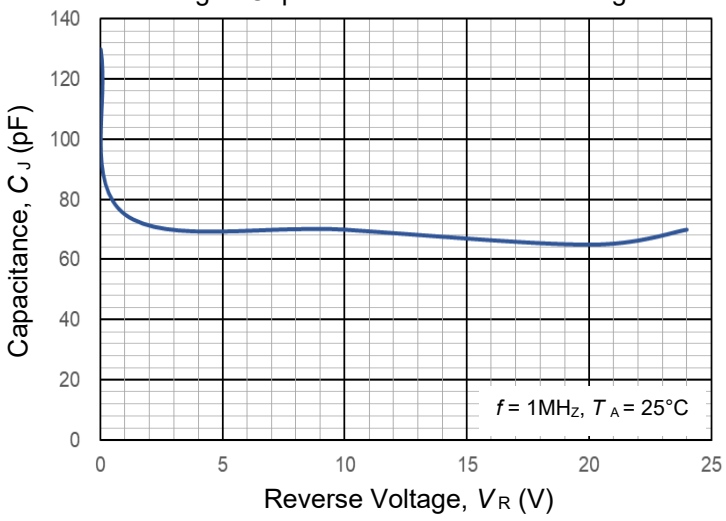
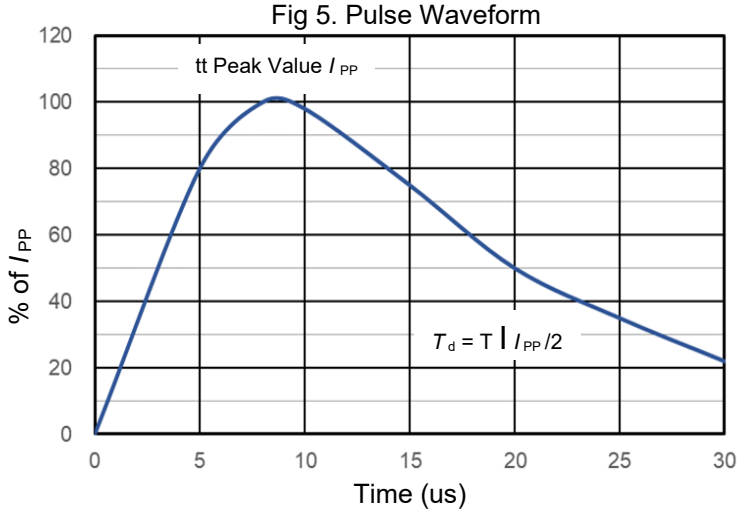


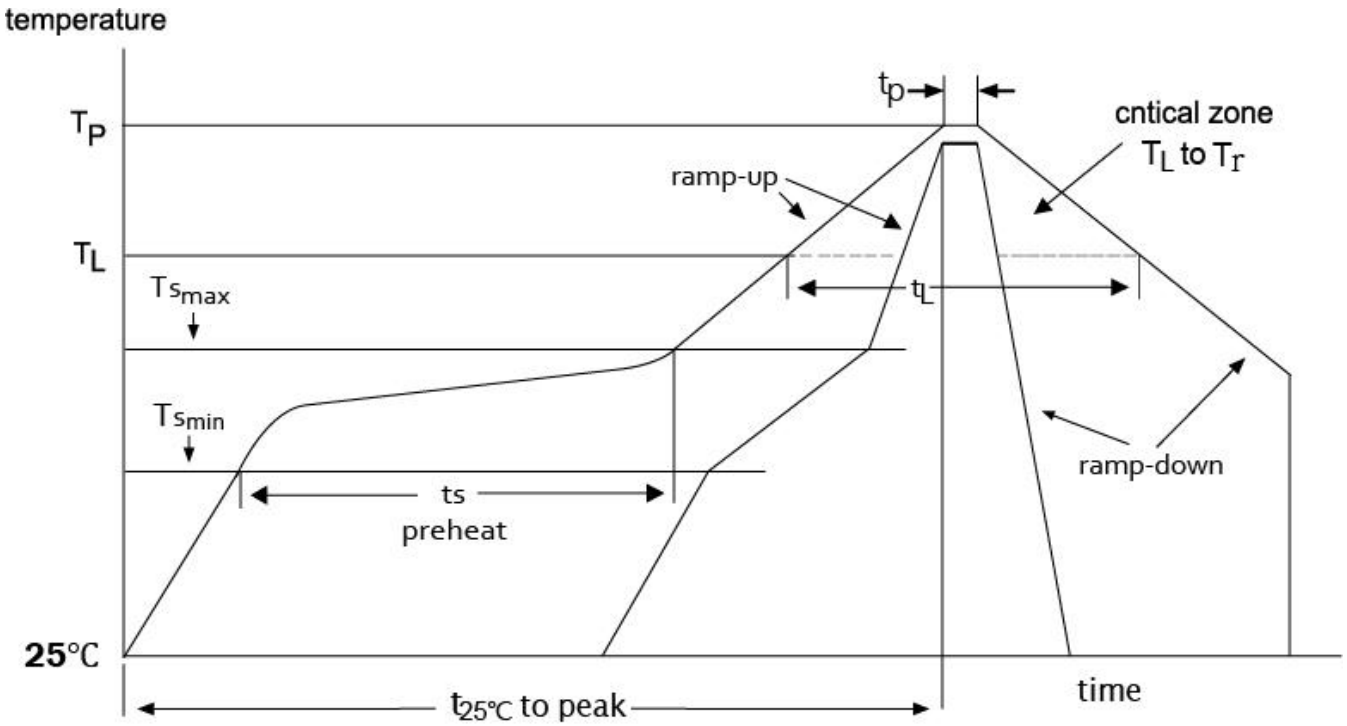
Fig 5. Pulse Waveform



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4. Soldering Parameters

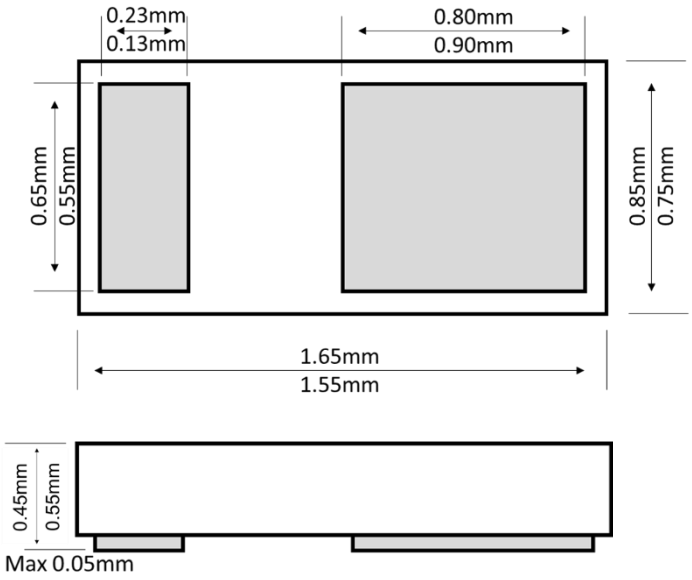
Profile Feature	SnPb eutectic assembly	Pb-free assembly
Average ramp-up rate (Tsmax to Tp)	3 °C/s maximum	3 °C/s maximum
Preheat		
Temperature minimum (Tsmin)	100 °C	150 °C
Temperature maximum (Tsmax)	150 °C	200 °C
Time (tsmin to tsmax)	60 s to 120 s	60 s to 180 s
Time maintained above		
Temperature (TL)	183 °C	217 °C
Time (tL)	60 s to 150 s	60 s to 150 s
Peak/classificationtemperature(T)	235 °C	260 °C
Number of allowed reflow cycles	3	3
Time within 5 °C of actual peak temperature (tp)	10 s to 30 s	20 s to 40 s
Ramp-down rate	6 °C/s maximum	6 °C/s maximum
Time 25 °C to peak temperature	6 minutes maximum	8 minutes maximum



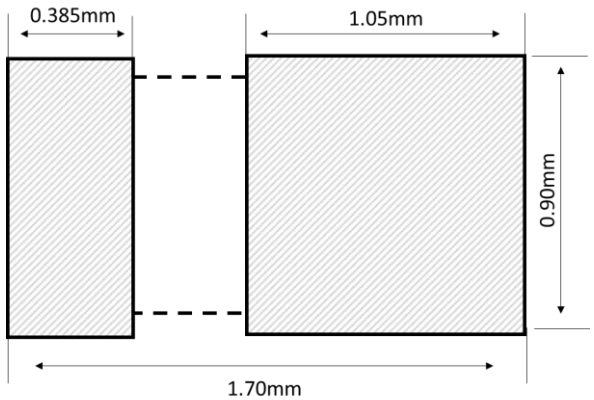
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5. Package Information

5-1. Dimension



5-2. PCB Pad Layout Recommendation



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6. Ordering Information

Part Number	Marking Code	Quantity	Component Package	Packaging Option
FHC2421D	F4 II	10,000 PCS	DFN1608-2L	Tape & Reel - 8mm tape / 7”reel

7. Version

7-1. History

Version	Date	File No.	Recording	Basis
A	10-Aug-2019	F119169	New Create	Market
2.0	13-Dec-2021		Update Version	System

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