

1. Applications

- Personal Digital Assistance
- Wireless System
- DVI
- High Speed Data Line
- Ethernet
- USB 2.0 Power and Data Line Protection

2. Feature

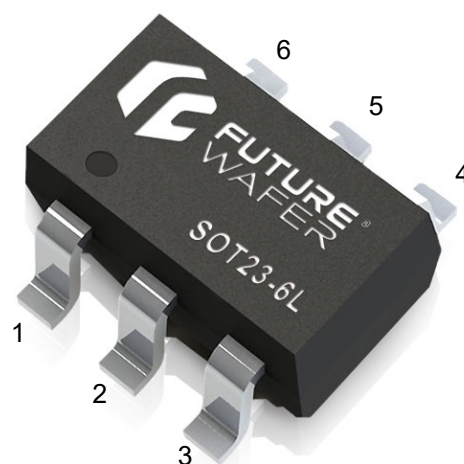
- With TVS Diode
- ESD Protection:Level 4
- Low Clamping Voltage
- 350 Watts Peak Pulse Power Per Line
- Ultra Low Capacitance:3pf Max.(Any I/O to GND.)
- Protection 4 lines I/O port

3. IEC Compatibility

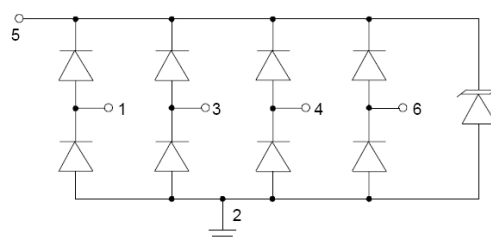
- EN61000-4
- 61000-4-2(ESD):Level 4,Contact:±25KV,Air:±30KV
- 61000-4-4(EFT):80A-5/50ns
- 61000-4-5(Surge):14A,8/20us

4. Mechanical Characteristics

- Molded JEDEC SOT23-6L Package
- Packing: Tape and Reel
- Flammability rating UL 94V-0
- Halogen Free



SOT23-6L



5. Device Characteristics



Maximum Ratings@25°C Unless Otherwise Specified

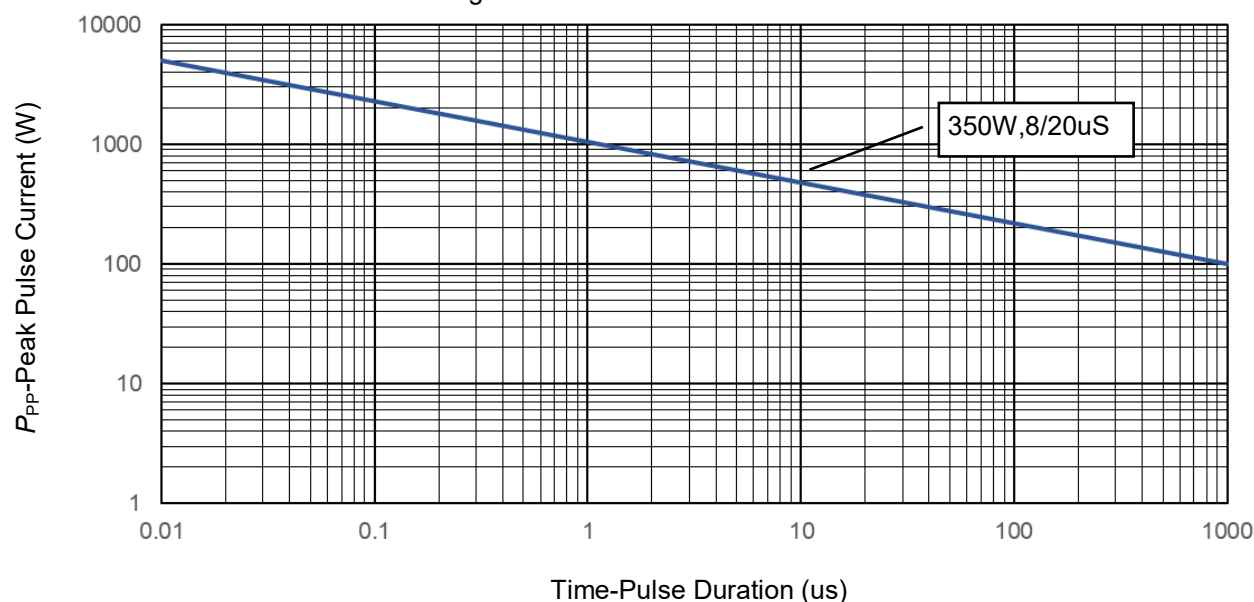
Parameter		Symbol	Value	Units
Peak Pulse Power	$T_p = 8/20\mu s$	P_{PP}	350	Watts
Peak Pulse Current		I_{PP}	14	A
Electrostatic Discharge	Contact	V_{ESD}	30	KV
	Air			
Operating Temperature		T_J	-55~150	°C
Storage Temperature		T_{STG}		

6. Electrical Characteristics

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}	Pin 5 to 2	-	-	3.3	V
Reverse Breakdown Voltage	V_{BR}	$I_Z = 1\text{mA}$ Pin5 to 2	4.5	-	6.5	
Forward Voltage	V_F	$I_F = 15\text{mA}$, Pin 2 to Pin 5.	-	-	1.0	
Clamping Voltage	V_C	$I_{PP} = 5\text{A}$ $t_p = 8/20\mu\text{s}$	-	6	-	
		$I_{PP} = 14\text{A}$ $t_p = 8/20\mu\text{s}$	-	-	25	
Reverse Leakage Current	I_R	Pin 5 to Pin 2.	-	-	0.9	μA
Junction Capacitance	$C_{I/O}$	$V_{dc} = 0\text{V}$, $f = 1\text{MHz}$	-	3	3.5	pF
	$C_{I/O-I/O}$		-	1.5	-	

7. Rating and Characteristic Curve

Fig 1 Peak Pulse Power vs Pulse Time



8. Electrical Characteristics

Fig 2 Clamping Voltage VC Map Pin5 to 2

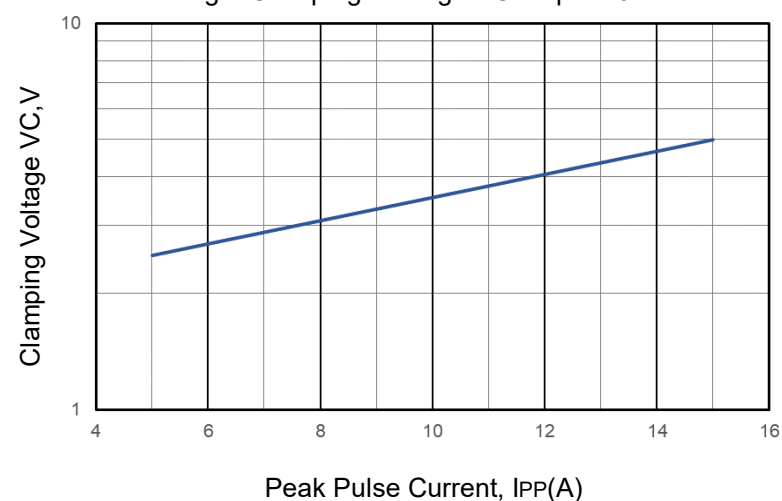


Fig 3 Normalized Capacitance vs. Reverse Voltage

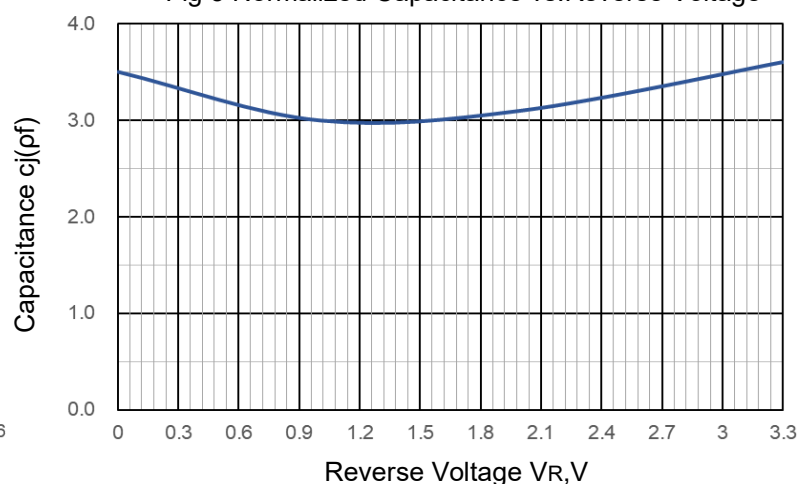


Fig. 4 Power Derating Curve

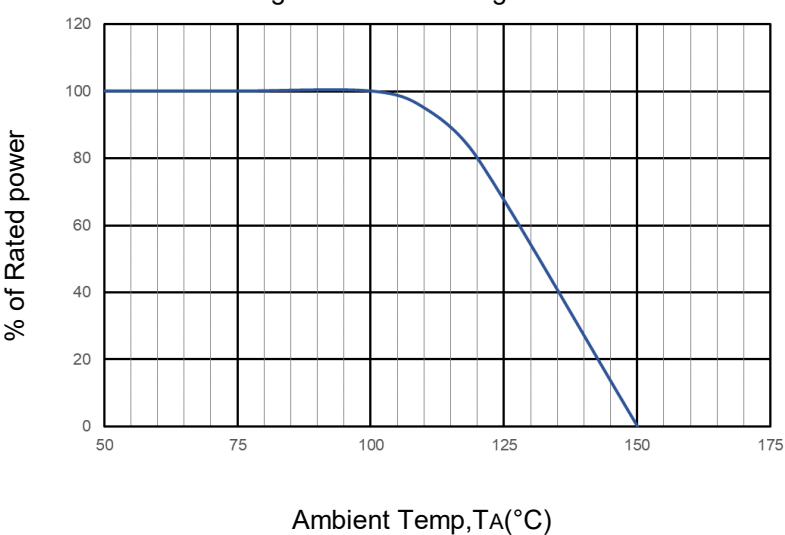
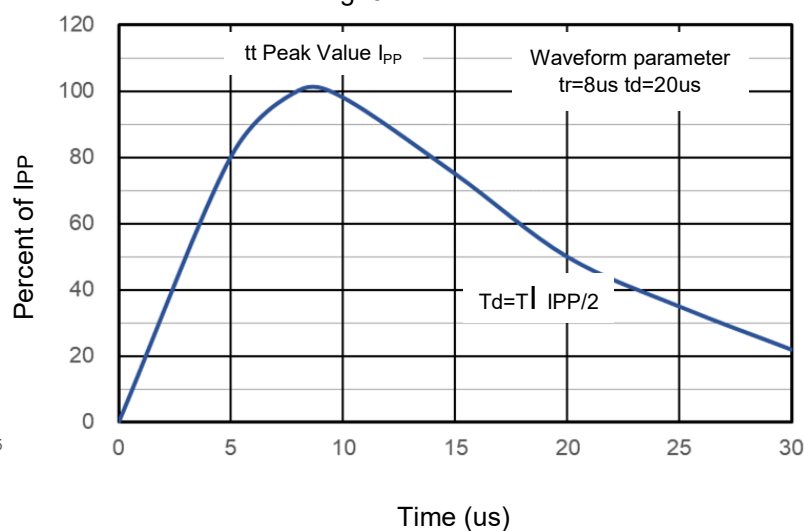
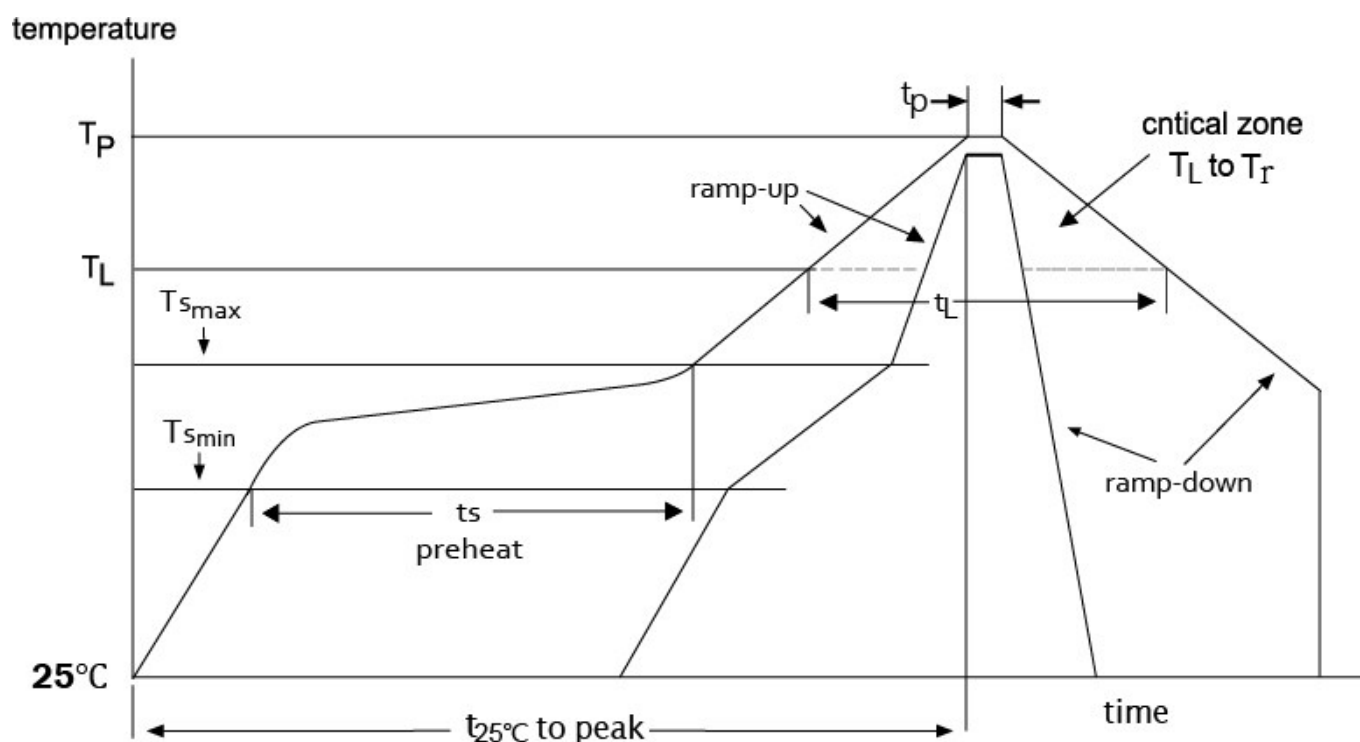


Fig. 5 Pulse Waveform

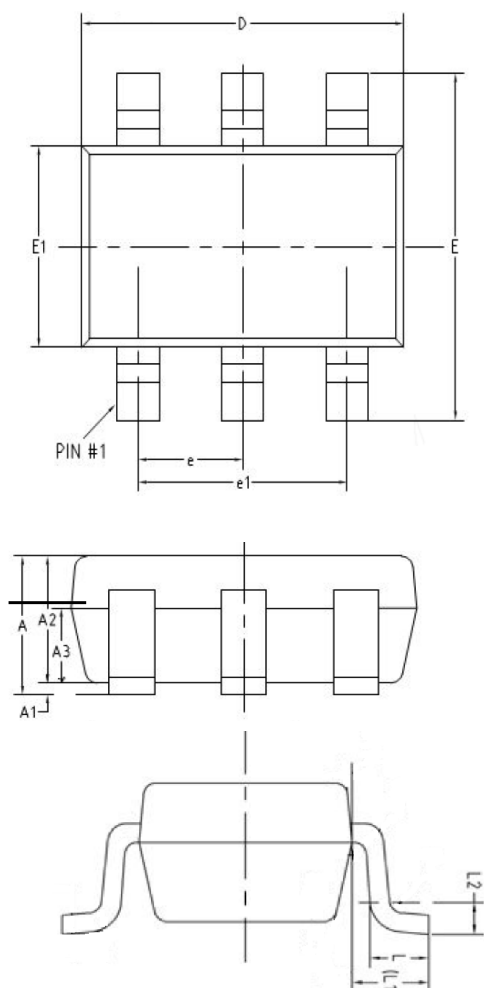


9. Soldering Parameters

Profile Feature	SnPb eutectic assembly	Pb-free assembly
Average ramp-up rate (T _{smax} to T _p)	3 °C/s maximum	3 °C/s maximum
Preheat		
Temperature minimum (T _{smin})	100 °C	150 °C
Temperature maximum (T _{smax})	150 °C	200 °C
Time (t _{smin} to t _{smax})	60 s to 120 s	60 s to 180 s
Time maintained above		
Temperature (T _L)	183 °C	217 °C
Time (t _L)	60 s to 150 s	60 s to 150 s
Peak/classification temperature (T)	235 °C	260 °C
Number of allowed reflow cycles	3	3
Time within 5 °C of actual peak temperature (t _p)	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



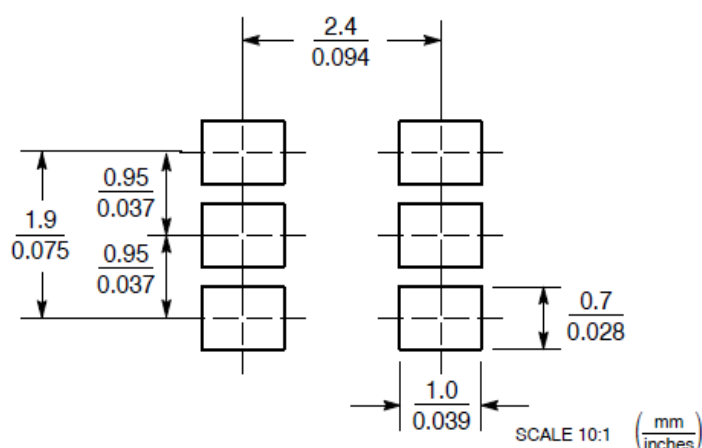
10. Package Information-SOT23-6



Symbol	Millimeters		
	MIN	NOM	MAX
A	-	-	1.30
A1	0.04	0.07	0.10
A2	1.05	1.10	1.15
A3	0.63	0.65	0.68
b	0.36	-	0.50
b1	0.36	0.38	0.45
c	0.14	-	0.20
c1	0.14	0.15	0.16
D	2.82	2.87	2.90
E	2.65	2.80	2.95
E1	1.56	1.62	1.64
e	0.93	0.95	0.98
e1	1.85	1.90	1.95
L	0.40	0.45	0.50
L1	0.59 REF		
L2	0.25 BSC		

Unit : mm

11. Suggest Pad Layout-SOT23-6



12. Ordering Information

Part Number	Marking	Component Package	Quantity	Packaging Option
FSRV3.3-4	V33	SOT23-6L	3,000PCS	Tape&reel-8mm tape / 7"reel

13. History

Version	Date	File No.	Recording	Basis
A	17-Jun-2017	F120251	New Create	Market
2.0	28-Oct-2021		Update Version	System