Surface Mount Transient Voltage Suppressor
Stand-Off Voltage - 6.0 to 440 Volts
400 Watt Peak Pulse Power

Features

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition Rate (duty cycle):0.01%
- Fast response time: typically less than 1.0ps from 0 Volts to V(BR) for unidirectional types
- Typical IR less than 1μA above 10V
- High Temperature solderting: 260°C/10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability 94V-O
- Pb-free plated

Mechanical Data

- **Case:** JEDEC SOD-123FL molded plastic over passivated chip
- **Terminals:** Solder plated, solderable per MIL-STD-750 Method 2026
- **Polarity:** For uni-directional types the bandby laser denotes the cathode, which is positive with respect to the anode under normal TVS operation

Devices For Bipolar Application

- For Bidirectional use C or CA Suffix for types TECA6.0 thru types TECA440 (e.g. TECA6.0C , TECA440CA)
- Electrical characteristics apply in both directions

Maximum Ratings And Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000μs waveform (Note 1,2 ,FIG.1)	P_{PPM}	Minimum 400	Watts
Peak Pulse Current of on 10/1000μs waveform (Note 1,FIG.3)	I_{PPM}	SEE TABLE 1	Amps
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load,(JEDEC Method) (Note2,3)	I_{FSM}	20	Amps
Operating junction and Storage Temperature Range	T_J , T_{STG}	−55 to +150	℃

Notes :

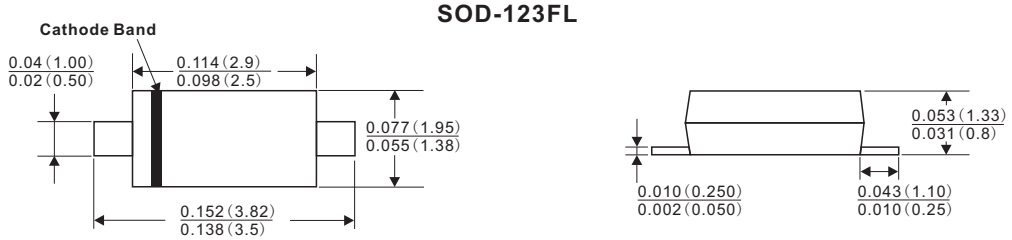
1.Non-repetitive current pulse , per Fig. 3 and derated above TA = 25℃ per Fig. 2 .

2.Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal

3.8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

Dimensions (SOD-123FL)

SOD-123FL



Dimensions in inches and(millimeters)

Electrical Characteristics

TABLE1

TECA Part Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @IT		Test Current	Maximum Clamping Voltage @Ipp	Peak Pulse Current	Reverse Leakage @VRWM
UNI-Polar	BI-Polar	UNI	BI	VRWM(V)	VBR(V)Min.	VBR(V)Max.	IT(mA)	Vc(V)	Ipp(A)	IR(μA)
TECA6.0A	TECA6.0CA	6A	6B	6.0	6.67	7.37	10	10.3	46.6	100
TECA8.0A	TECA8.0CA	8A	8B	8.0	8.89	9.83	1	13.6	35.3	50
TECA12A	TECA12CA	12A	12B	12.0	13.30	14.70	1	19.9	24.1	1
TECA15A	TECA15CA	15A	15B	15.0	16.70	18.50	1	24.4	19.7	1
TECA16A	TECA16CA	16A	16B	16.0	17.80	19.70	1	26.0	18.5	1
TECA20A	TECA20CA	20A	20B	20.0	22.20	24.50	1	32.4	14.8	1
TECA22A	TECA22CA	22A	22B	22.0	24.40	26.90	1	35.5	13.5	1
TECA26A	TECA26CA	26A	26B	26.0	28.90	31.90	1	42.1	11.4	1
TECA28A	TECA28CA	28A	28B	28.0	31.10	34.40	1	45.4	10.6	1
TECA30A	TECA30CA	30A	30B	30.0	33.30	36.80	1	48.4	9.9	1
TECA33A	TECA33CA	33A	33B	33.0	36.70	40.60	1	53.3	9.0	1
TECA36A	TECA36CA	36A	36B	36.0	40.00	44.20	1	58.1	8.3	1
TECA40A	TECA40CA	40A	40B	40.0	44.40	49.10	1	64.5	7.4	1
TECA58A	TECA58CA	58A	58B	58.0	64.40	71.20	1	93.6	5.1	1
TECA60A	TECA60CA	60A	60B	60.0	66.70	73.70	1	96.8	5.0	1
TECA150A	TECA150CA	150A	150B	150.0	167.00	185.00	1	243.0	2.0	1
TECA170A	TECA170CA	170A	170B	170.0	189.00	209.00	1	275.0	1.7	1
TECA440A	TECA440CA	440A	440B	440.0	492.00	543.00	1	713.0	0.7	1

Notes :
1.For bidirectional type having VRWM of 10 volts and less, the IR limit is double
2.For parts with A , the VBR is ± 5%

Characteristic Curves (TA=25 ℃ unless otherwise noted)

Fig.1 Peak Pulse Power Rating

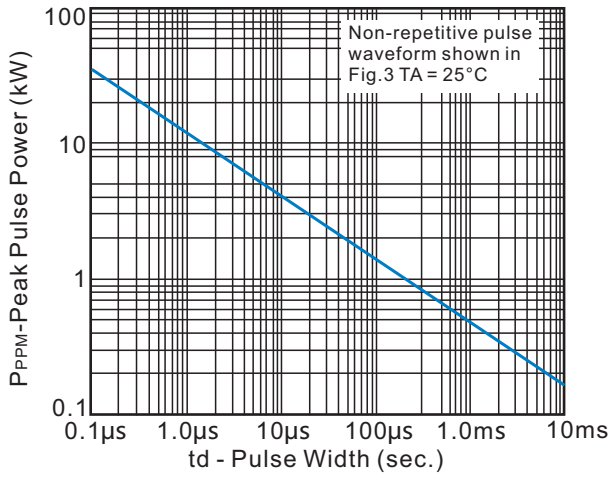


Fig.2 Pulse Derating Cruve

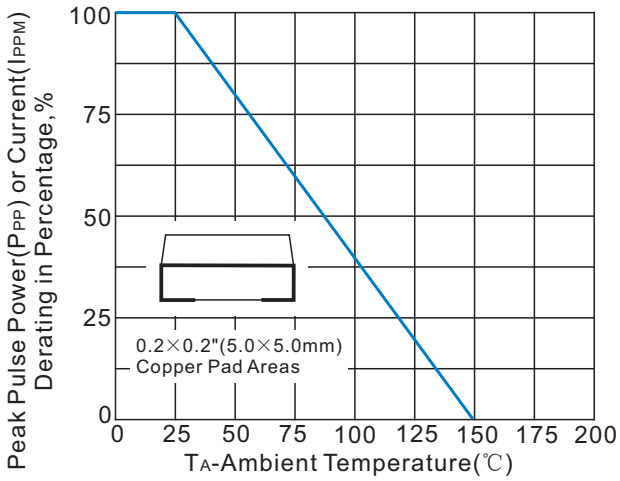


Fig.3 Pulse Waveform

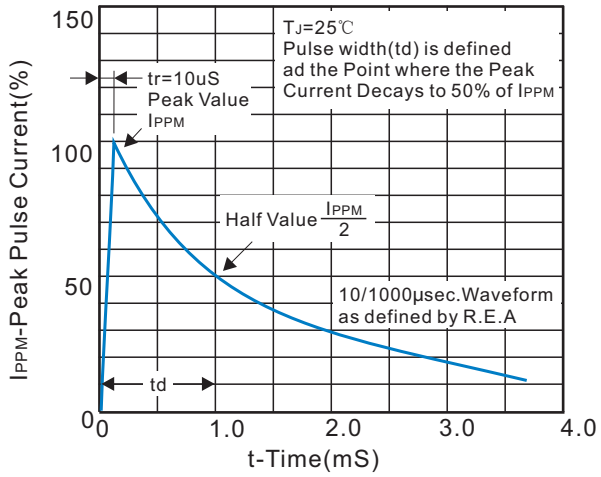


Fig.4 Typical Junction Capacitance

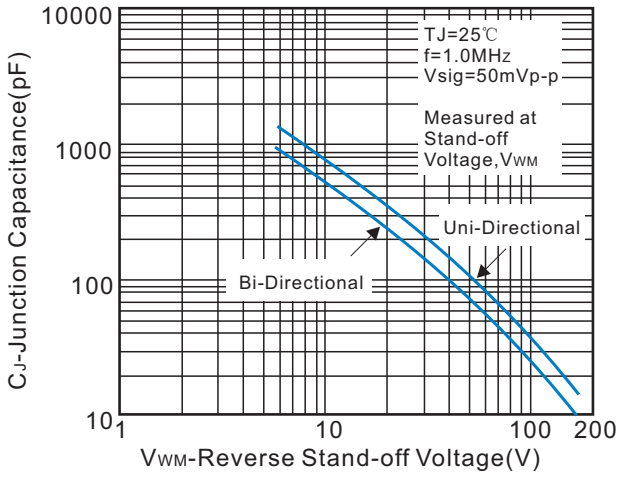


Fig.5 Typ.Transient Thermal Impedance

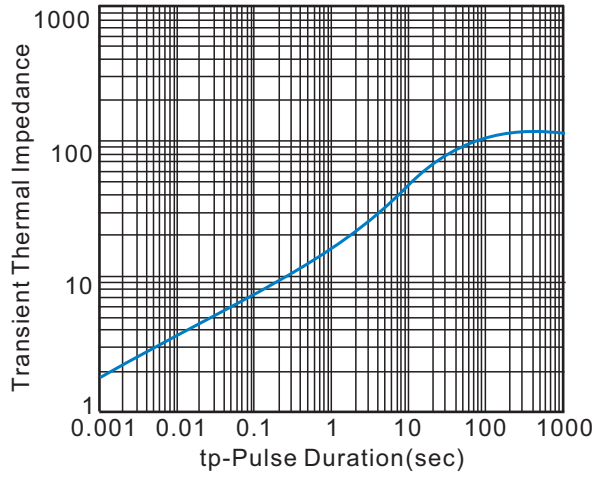
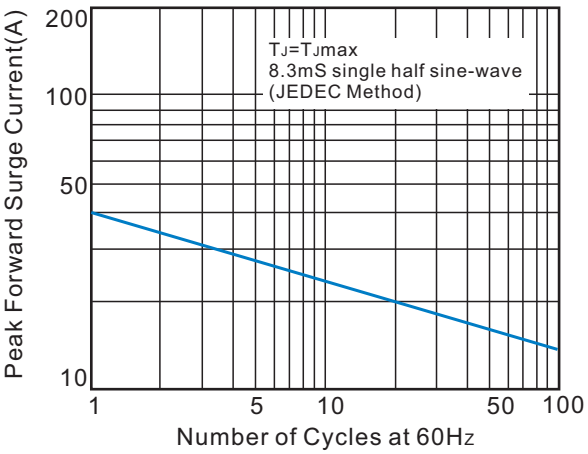


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

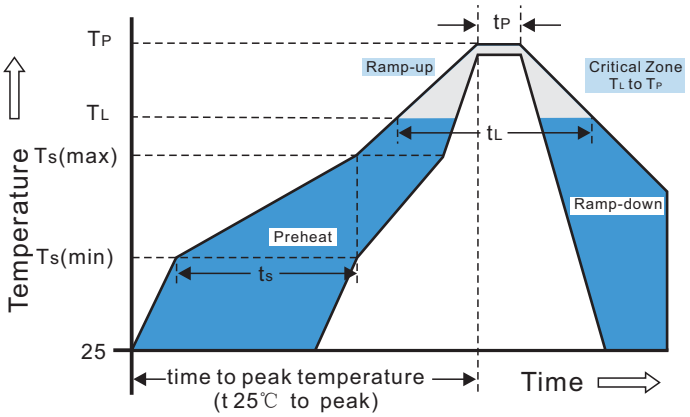


Recommended Soldering Conditions

Recommended Conditions

Re"ow Condition		Pb-Free assembly (see Fig.1)
Pre Heat	-Temperature Min($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time(Min to Max)(t_s)	60-180secs
Average ramp up rate (Liquidus Temp(T_L) to peak)		3℃/sec.Max.
$T_{s(max)}$ to T_L -Ramp-up Rate		3℃/sec.Max.
Re"ow	-Temperature(T_L)(Liquidus)	+217℃
	-Temperature(t_L)	60-150secs
Peak Temp(T_P)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp(t_P)		30 secs.Max.
Ramp-down Rate		6℃/sec.Max.
Time 25℃ to Peak Temp(T_P)		8 min.Max.
Do not exceed		+260℃

Reflow Soldering



Marking Code