

FrelTec GmbH

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Surface Mount Transient Voltage Suppressors SMAF

2/3/2022

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SMAF

Transient Voltage Suppressors

SPECIFICATION

63B	L4TVS_____	SMAF	L10
Type	Type	Package	Packing
63B: Transient Voltage Suppressors	L4TVS_____	SMAF	L10: tape and Reel(embossed tape) for 10000 pc (13'reel)

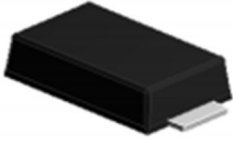
All products according to RoHS (2015/863/EU)



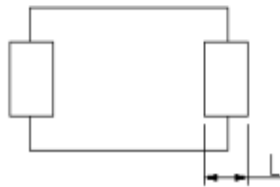
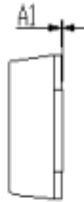
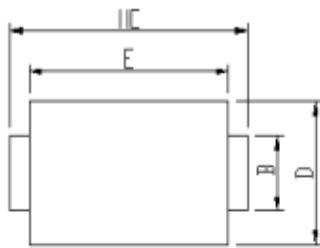
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FrelTec Transient Voltage Suppressors L4TVA10,0A thru L4TVS190AA

PACKAGE OUTLINE

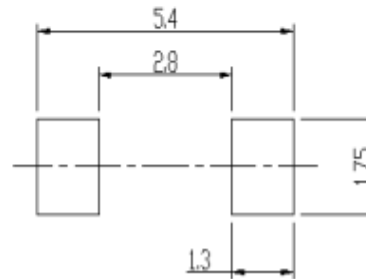


eSGB (SMAF)



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
A	0.9	1.08	0.035	0.043
A1	0	0.1	0.000	0.004
B	1.25	1.45	0.049	0.057
C	0.1	0.25	0.004	0.010
D	2.6	2.8	0.102	0.110
E	4.1	4.3	0.161	0.169
L	0.7	1.1	0.028	0.043
HE	4.8	5.2	0.189	0.205

Soldering footprint



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Transient Voltage Suppressors

MAXIMUM RATING @ $T_a=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000us waveform	$P_{PPM}^{1)}$	Minimum 400	W
Peak pulse current with a 10/1000us waveform	$I_{PPM}^{1)}$	See Next Table	A
Power dissipation on infinite heatsink $T_A=25^\circ\text{C}$	$P_{M(AV)}^{2)}$	1	W
Peak forward surge current 8.3ms single half sine-wave uni-directional only	I_{FSM}	40,0	A
Maximum instantaneous forward voltage at 25A	V_F	2,0	V
Typical thermal resistance, junction to ambient air	R_{thja}	75	$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig.4

2. Power dissipation mounted on recommended pad layout

3. Thermal resistance from junction to ambient, mounted on PCB with 0,8 x 0,8mm copper pads

Electrical CharacteristicsRating at 25°C ambient temperature unless otherwise specified, $V_F=3,5V$ at $I_F=50A$ (uni-directional only)

Part name	Reverse Stand-off Voltage	Breakdown voltage		Test current	Max Reverse Leakage Current	Max. Clamping Voltage	Peak Pulse Current
	VRWM	VBR @ IT		IT	IR @ VRWM	Vc @ IPP	IPP
	V	Min	Max	mA	uA	V	A
L4TVS10A	10	11,1	12,3	1	2,5	17	23,5
L4TVS11A	11	12,2	13,5	1	2,5	18,2	22
L4TVS12A	12	13,3	14,7	1	2,5	19,9	20,1
L4TVS13A	13	14,4	15,9	1	1	21,5	18,6
L4TVS14A	14	15,6	17,2	1	1	23,2	17,2
L4TVS15A	15	16,7	18,5	1	1	24,4	16,4
L4TVS16A	16	17,8	19,7	1	1	26	15,4
L4TVS17A	17	18,9	20,9	1	1	27,6	14,5
L4TVS18A	18	20	22,1	1	1	29,2	13,7
L4TVS20A	20	22,2	24,5	1	1	32,4	12,3
L4TVS22A	22	24,4	26,9	1	1	35,5	11,3
L4TVS24A	24	26,7	29,5	1	1	38,9	10,3
L4TVS26A	26	28,9	31,9	1	1	42,1	9,5
L4TVS28A	28	31,1	34,4	1	1	45,4	8,8
L4TVS30A	30	33,3	36,8	1	1	48,4	8,3
L4TVS33A	33	36,7	40,6	1	1	53,3	7,5
L4TVS36A	36	40	44,2	1	1	58,1	6,9
L4TVS40A	40	44,4	49,1	1	1	64,5	6,2
L4TVS43A	43	47,8	52,8	1	1	69,4	5,8
L4TVS45A	45	50	55,3	1	1	72,7	5,5
L4TVS48A	48	53,3	58,9	1	1	77,4	5,2
L4TVS51A	51	56,7	62,7	1	1	82,4	4,9
L4TVS54A	54	60	66,3	1	1	87,1	4,6
L4TVS58A	58	64,4	71,2	1	1	93,6	4,3
L4TVS60A	60	66,7	73,7	1	1	96,8	4,1
L4TVS64A	64	71,1	78,6	1	1	103	3,9
L4TVS70A	70	77,8	86	1	1	113	3,5
L4TVS75A	75	83,3	92,1	1	1	121	3,3
L4TVS78A	78	86,7	95,8	1	1	126	3,2
L4TVS80A	80	88,8	97,6	1	1	129	3,1
L4TVS85A	85	94,4	104	1	1	137	2,9
L4TVS90A	90	100	111	1	1	146	2,7
L4TVS100A	100	111	123	1	1	162	2,5
L4TVS110A	110	122	135	1	1	177	2,2
L4TVS120A	120	133	147	1	1	193	2,1
L4TVS130A	130	144	159	1	1	209	1,9
L4TVS140A	140	155	171	1	1	224	1,8
L4TVS150A	150	167	185	1	1	243	1,6
L4TVS160A	160	178	197	1	1	259	1,5
L4TVS170A	170	189	209	1	1	275	1,4
L4TVS180A	180	201	222	1	1	292	1,4
L4TVS190A	190	211	232	1	1	324	1,2

Note: 1. $V_{(BR)}$ measured after L_T applied for 300us square wave pulse or equivalent

2. Surge current waveform per Fig.3 and derated per Fig.2

3. All terms and symbols are consistent with ANSI/IEE C62,35

4. For bi-directional types have V_{WM} of 10 Volts and less, the I_D limit is doubled

2/3/2022

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RATINGS AND CHARACTERISTIC CURVES

Transient Voltage Suppressors

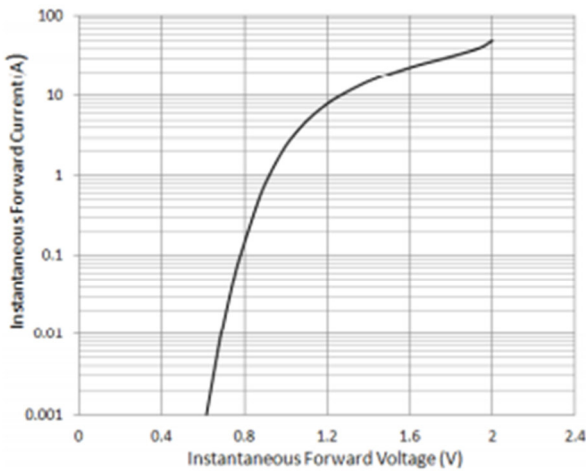


Figure 1. Typical Instantaneous Forward Characteristics

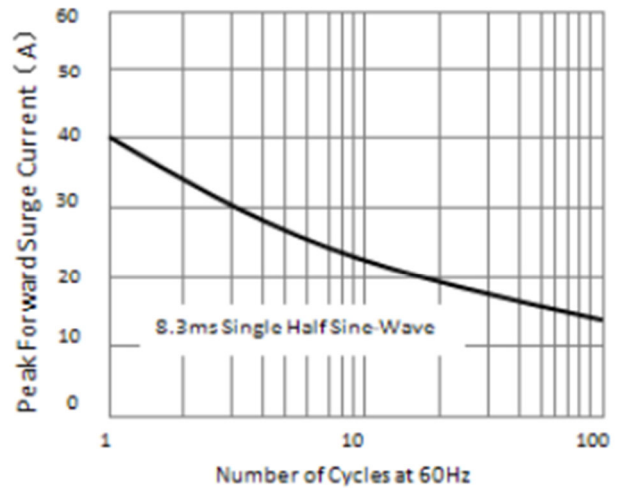


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

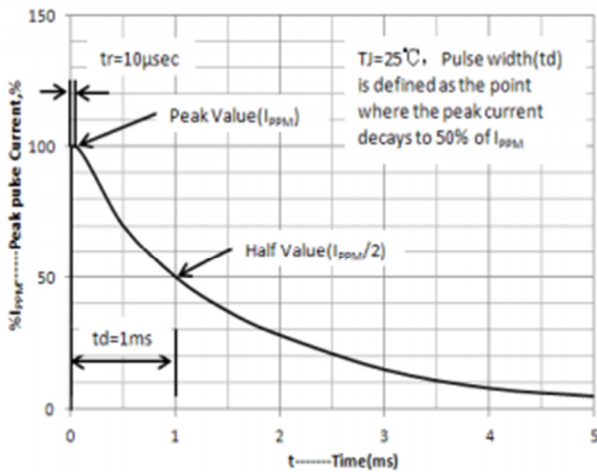


Figure 3. Pulse Waveform

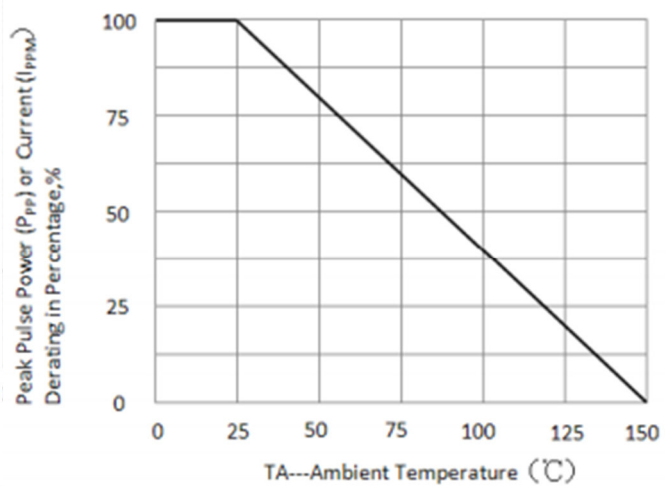


Figure 4. Peak Pulse Power Derating Curve

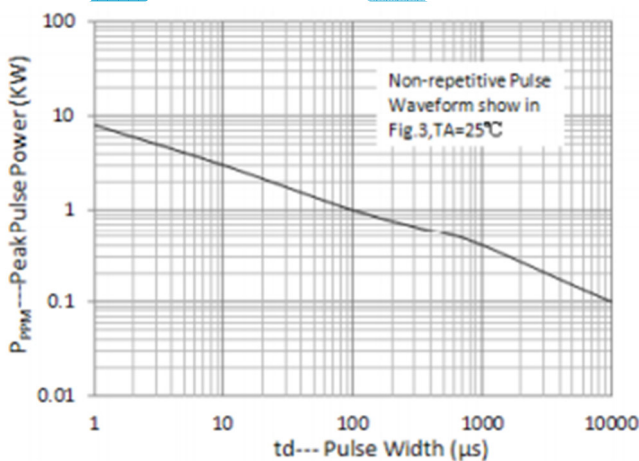
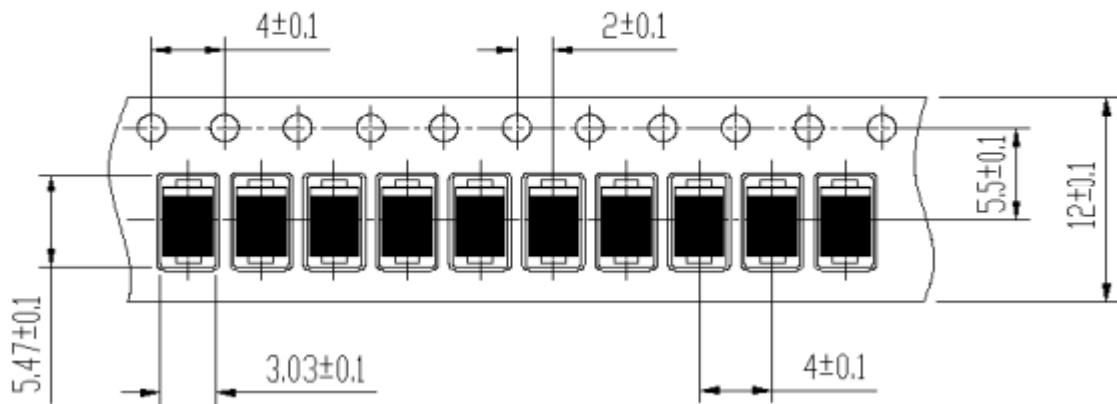


Figure 5. Peak Pulse Power Derating Curve

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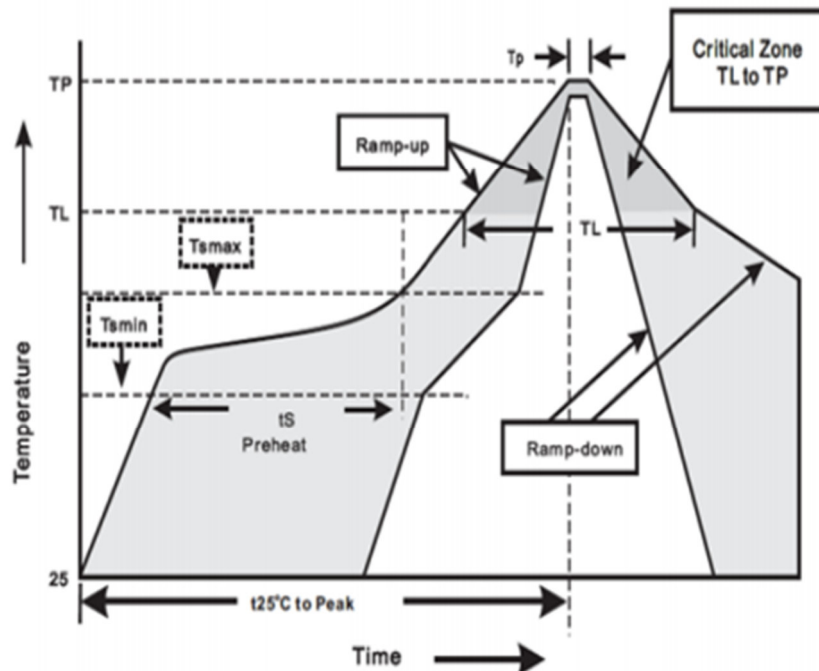
Tape and reel in specification

Tape & Reel Specification



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Soldering Parameters



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Stock period

The performance of these products, including the solderability, is guaranteed for 12 month, provided that they remain packed as they were when delivered and stored at a temperature of 20-30°C and a relative humidity 20-60%RH

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