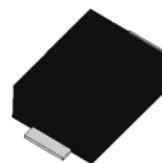


FEATURES:

- ✧ Excellent clamping capability.
- ✧ Low profile package and low inductance.
- ✧ High peak pulse voltage capability on 1.2/50 μ s-8/20 μ s@2 Ω waveform.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ High temperature soldering: 260 $^{\circ}$ C/40s at terminals.
- ✧ Plastic package has underwriters laboratory flammability 94V-0.
- ✧ For surface mounted applications in order to optimize board space.



SMBF



Bi-directional

Symbol

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}$ C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}$ C
operating junction temperature range	T_J	-55 to +150	$^{\circ}$ C
Steady state power dissipation at $T_L=75^{\circ}$ C	$P_{M(AV)}$	6.5	W
Peak pulse voltage on 1.2/50 μ s-8/20 μ s@2 Ω waveform	V_{PP}	2000	V

ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$)

Part Number	Marking Code	V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@V_{PP}^{①}$	$V_{PP}^{①}$
Bi-Polar		V	μA	min(V)	max(V)	mA	max(V)	V
SM1K5CF	1K5CF	5.0	300	6.40	7.10	10	20	2000
SM1K6CF	1K6CF	6.0	250	6.50	7.40	10	20	2000
SM1K6VCF	1K6VF	6.5	150	7.20	8.00	10	22	2000
SM1K7CF	1K7CF	7.0	100	7.70	8.60	10	22	2000
SM1K15CF	1K15CF	15	1	16.7	18.5	1	32	2000
SM1K16CF	1K16CF	16	1	17.8	19.7	1	34	2000
SM1K18CF	1K18CF	18	1	20.0	22.3	1	37	2000
SM1K20CF	1K20CF	20	1	22.0	24.5	1	40	2000
SM1K30CF	1K30CF	30	1	32.0	37.0	1	65	2000
SM1K33CF	1K33CF	33	1	36.0	41.0	1	70	2000
SM1K40CF	1K40CF	40	1	44.0	49.1	1	75	2000

① Surge waveform: 1.2/50 μs -8/20 μs @2 Ω

V_R : Stand-off voltage -- Maximum voltage that can be applied

V_{BR} : Breakdown voltage

V_C : Clamping voltage -- Peak voltage measured across the suppressor at a specified V_{PP}

I_R : Reverse leakage current

ORDERING INFORMATION

SM1K		5	C	F
Surface mount 8/20 μs 1KA		V_R Voltage	C: Bi-directional	Package:SMBF

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Bi-directional)

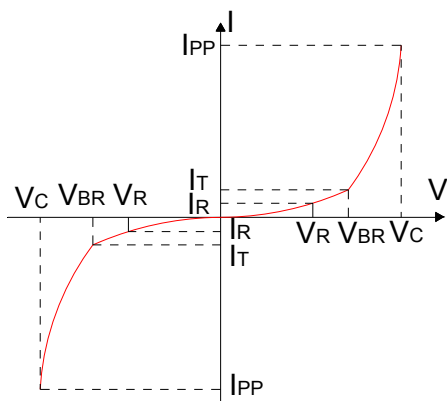


FIG.2: Pulse waveform

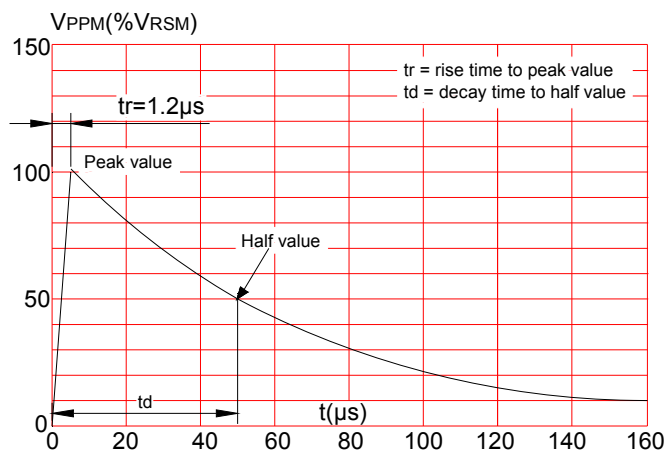
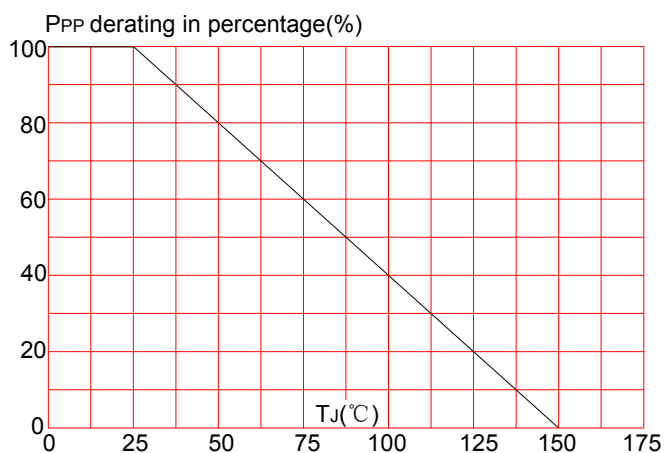
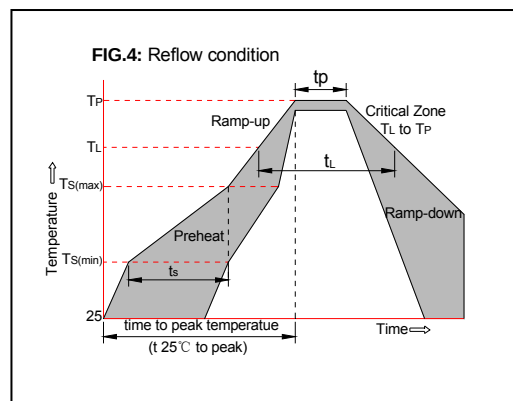


FIG.3: Pulse derating curve

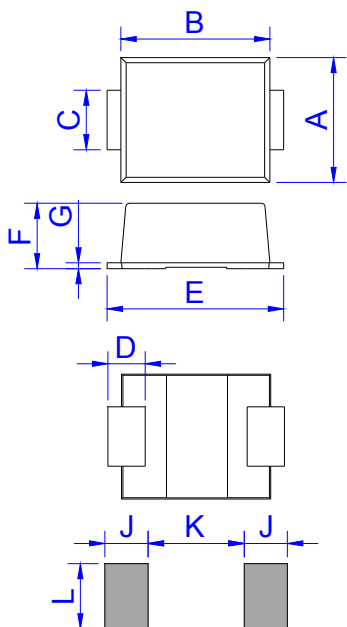


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.4)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



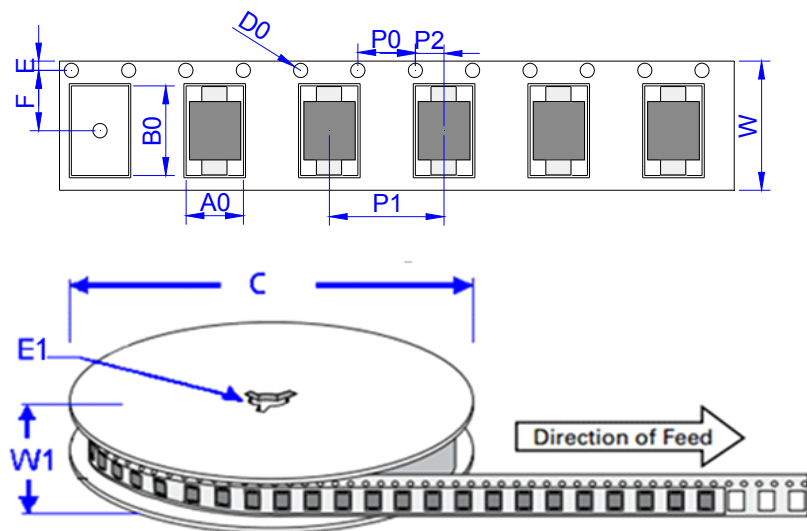
PACKAGE MECHANICAL DATA



SMBF

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.90	4.50	0.154	0.177
B	4.65	5.15	0.183	0.203
C	1.85	2.15	0.073	0.085
D	0.60		0.024	
E	5.60	6.00	0.220	0.236
F	2.05	2.35	0.081	0.093
G	0.12	0.28	0.005	0.011
J	2.00		0.079	
K		3.20		0.126
L	2.30		0.091	

TAPE AND REEL SPECIFICATION-SMBF



Ref.	Dimensions	
	Millimeters	Inches
A0	4.50±0.3	0.177 ± 0.012
B0	6.10±0.3	0.240 ± 0.012
C	330.0	13.0
D0	1.55±0.1	0.061 ± 0.004
E	1.75±0.2	0.069 ± 0.008
E1	13.3±0.3	0.524± 0.012
F	5.5±0.2	0.217 ± 0.008
P0	4.00±0.2	0.157 ± 0.008
P1	8.00±0.2	0.315 ± 0.008
P2	2.00±0.2	0.079 ± 0.008
W	12.0±0.2	0.472 ± 0.008
W1	15.7±2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)
SM1KxxCF	0.13	3,000	48,000	330