

ATV02W-B1-HF Series

Working Peak Reverse Voltage: 5 to 220 V

Peak Pulse Power: 200 W

RoHS Device

Halogen Free

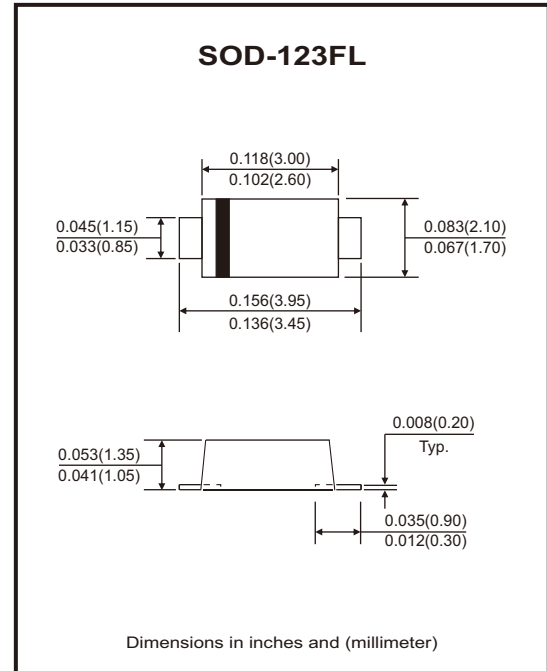


Features

- Low profile package with built-in strain relief for SMT applications.
- Low incremental surge resistance, excellent clamping capability.
- 200W peak pulse power capability with very fast response time.
- High temperature soldering guaranteed: 260°C/10s.
- Uni and Bidirectional unit.
- AEC-Q101 Qualified.

Mechanical data

- Case: SOD-123FL, molded plastic.
- Terminals: Solder plated; solderable per MIL-STD-202, method 208.
- Polarity: Cathode band except bipolar.
- Mounting position: Any.



Circuit Diagram



Bi-directional



Uni-directional

Maximum Ratings (at Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Units
Peak power dissipation with a 10/1000µs waveform (Note 1)	P _{PP}	200	W
Peak pulse current with a 10/1000µs waveform (Note 1)	I _{PP}	See next table	A
Forward voltage @I _F =1A for undirectional only	V _F	1.6	V
Typical thermal resistance (Note 2)	R _{θJA}	85	°C/W
	R _{θJC}	23	°C/W
	R _{θJL}	15	°C/W
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C

Notes: 1. Non-repetitive current pulse and derated above TA=25°C.

2. Device mounted on p.c.b with 10mm x 20mm x 0.1mm copper pad area.

SMD Transient Voltage Suppressor

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Part No.	Breakdown voltage V _{BR} @ I _T			Working peak reverse voltage V _{RWM} (V)	Maximum reverse leakage @ V _{RWM} I _R (μA)	Maximum peak pulse current I _{PP} (A)	Maximum clamping voltage @ I _{PP} V _C (V)	Marking code	
	Min (V)	Max (V)	I _T (mA)					UNI	BI
ATV02W5V0(B)-B1-HF	6.4	7.0	10	5.0	400	21.7	9.2	AE	AEC
ATV02W6V0(B)-B1-HF	6.7	7.4	10	6.0	400	19.4	10.3	AG	AGC
ATV02W6V5(B)-B1-HF	7.2	8	10	6.5	250	17.9	11.2	AK	AKC
ATV02W7V0(B)-B1-HF	7.8	8.6	10	7.0	100	16.7	12.0	AM	AMC
ATV02W7V5(B)-B1-HF	8.3	9.2	1	7.5	50	15.5	12.9	AP	APC
ATV02W8V0(B)-B1-HF	8.9	9.8	1	8.0	25	14.7	13.6	AR	ARC
ATV02W8V5(B)-B1-HF	9.4	10.4	1	8.5	10	13.9	14.4	AT	ATC
ATV02W9V0(B)-B1-HF	10	11.1	1	9.0	5	13.0	15.4	AV	AVC
ATV02W100(B)-B1-HF	11.1	12.3	1	10.0	2.5	11.8	17.0	AX	AXC
ATV02W110(B)-B1-HF	12.2	13.5	1	11.0	2.5	11	18.2	AZ	AZC
ATV02W120(B)-B1-HF	13.3	14.7	1	12.0	2.5	10.1	19.9	BE	BEC
ATV02W130(B)-B1-HF	14.4	15.9	1	13.0	1	9.3	21.5	BG	BGC
ATV02W140(B)-B1-HF	15.6	17.2	1	14.0	1	8.6	23.2	BK	BKC
ATV02W150(B)-B1-HF	16.7	18.5	1	15.0	1	8.2	24.4	BM	BMC
ATV02W160(B)-B1-HF	17.8	19.7	1	16.0	1	7.7	26.0	BP	BPC
ATV02W170(B)-B1-HF	18.9	20.9	1	17.0	1	7.2	27.6	BR	BRC
ATV02W180(B)-B1-HF	20	22.1	1	18.0	1	6.8	29.2	BT	BTC
ATV02W200(B)-B1-HF	22.2	24.5	1	20.0	1	6.2	32.4	BV	BVC
ATV02W220(B)-B1-HF	24.4	26.9	1	22.0	1	5.6	35.5	BX	BXC
ATV02W240(B)-B1-HF	26.7	29.5	1	24.0	1	5.1	38.9	BZ	BZC
ATV02W260(B)-B1-HF	28.9	31.9	1	26.0	1	4.8	42.1	CE	CEC
ATV02W280(B)-B1-HF	31.1	34.4	1	28.0	1	4.4	45.4	CG	CGC
ATV02W300(B)-B1-HF	33.3	36.8	1	30.0	1	4.1	48.4	CK	CKC
ATV02W330(B)-B1-HF	36.7	40.6	1	33.0	1	3.8	53.3	CM	CMC
ATV02W360(B)-B1-HF	40	44.2	1	36.0	1	3.4	58.1	CP	CPC
ATV02W400(B)-B1-HF	44.4	49.1	1	40.0	1	3.1	64.5	CR	CRC
ATV02W430(B)-B1-HF	47.8	52.8	1	43.0	1	2.9	69.4	CT	CTC
ATV02W450(B)-B1-HF	50	55.3	1	45.0	1	2.8	72.7	CV	CVC
ATV02W480(B)-B1-HF	53.3	58.9	1	48.0	1	2.6	77.4	CX	CXC
ATV02W510(B)-B1-HF	56.7	62.7	1	51.0	1	2.4	82.4	CZ	CZC
ATV02W540(B)-B1-HF	60	66.3	1	54.0	1	2.3	87.1	DE	DEC
ATV02W580(B)-B1-HF	64	71.2	1	58.0	1	2.1	93.6	DG	DGC
ATV02W600(B)-B1-HF	66.7	73.7	1	60.0	1	2.1	96.8	DK	DKC
ATV02W640(B)-B1-HF	71.1	78.6	1	64.0	1	1.9	103.0	DM	DMC
ATV02W700(B)-B1-HF	78.8	86	1	70.0	1	1.8	113.0	DP	DPC
ATV02W750(B)-B1-HF	83.3	92.1	1	75.0	1	1.7	121.0	DR	DRC
ATV02W780(B)-B1-HF	86.7	95.8	1	78.0	1	1.6	126.0	DT	DTC

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Part No.	Breakdown voltage V _{BR} @ I _T			Working peak reverse voltage V _{RWM} (V)	Maximum reverse leakage @V _{RWM} I _R (μA)	Maximum peak pulse current I _{PP} (A)	Maximum clamping voltage @I _{PP} V _C (V)	Marking code	
	Min (V)	Max (V)	I _T (mA)					UNI	BI
ATV02W850(B)-B1-HF	94.4	104	1	85.0	1	1.5	137.0	DV	DVC
ATV02W900(B)-B1-HF	100	111	1	90.0	1	1.4	146.0	DX	DXC
ATV02W101(B)-B1-HF	111	123	1	100.0	1	1.2	162.0	DZ	DZC
ATV02W111(B)-B1-HF	122	135	1	110.0	1	1.1	177.0	EE	EEC
ATV02W121(B)-B1-HF	133	147	1	120.0	1	1.0	193.0	EG	EGC
ATV02W131(B)-B1-HF	144	159	1	130.0	1	1.0	209.0	EK	EKC
ATV02W151(B)-B1-HF	167	185	1	150.0	1	0.8	243.0	EM	EMC
ATV02W161(B)-B1-HF	178	197	1	160.0	1	0.8	259.0	EP	EPC
ATV02W171(B)-B1-HF	189	209	1	170.0	1	0.7	275.0	ER	ERC
ATV02W201(B)-B1-HF	224	247	1	200.0	1	0.6	324.0	EX	EVC
ATV02W221(B)-B1-HF	245	270	1	220.0	1	0.6	356.0	ET	EXC

Notes: 1. Suffix B after part number to specify Bi-directional devices.

Typical Rating and Characteristic Curves (ATV02W-B1-HF Series)

Fig.1 - Peak Pulse Power Rating Curve

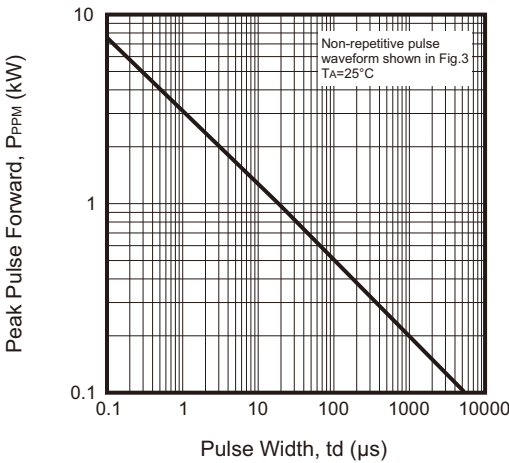


Fig.2 - Derating Curve

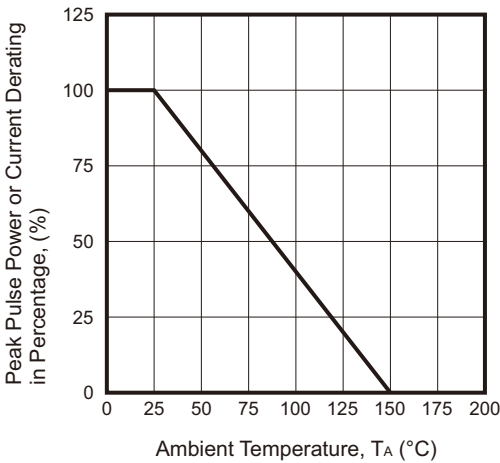
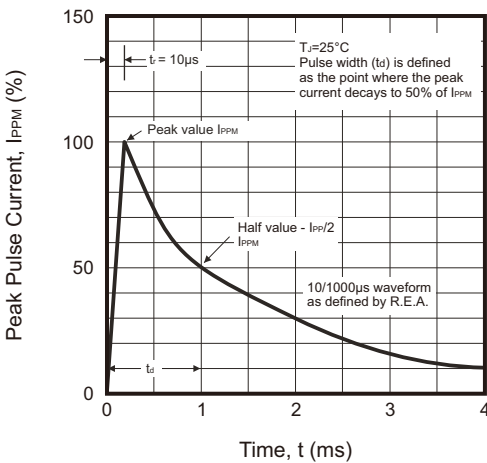
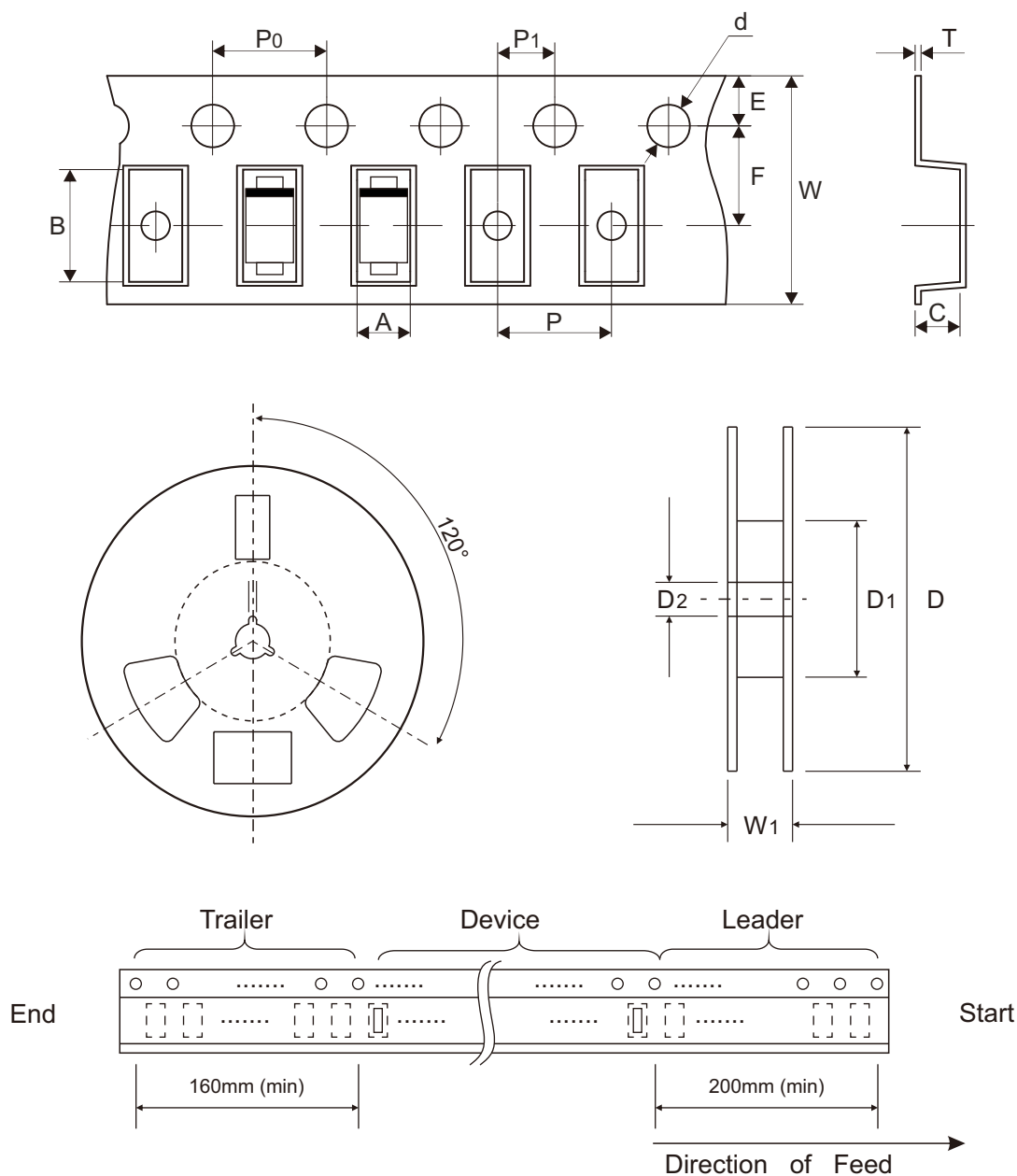


Fig.3 - Pulse Waveform



Reel Taping Specification

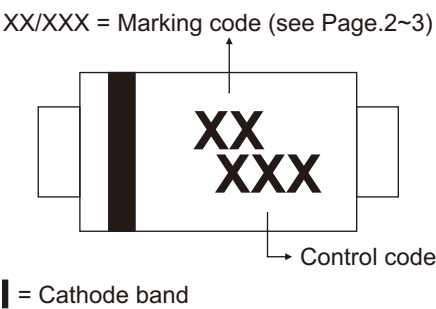


SOD-123FL	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	1.90 ± 0.20	3.90 ± 0.10	1.34 ± 0.05	1.55 ± 0.10	330.00 ± 1.00	75.00 ± 1.00	13.50 ± 0.50
	(inch)	0.075 ± 0.008	0.154 ± 0.004	0.053 ± 0.002	0.061 ± 0.004	12.992 ± 0.039	2.953 ± 0.039	0.531 ± 0.020

SOD-123FL	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.23 ± 0.05	8.00 ± 0.10	13.60 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.009 ± 0.002	0.315 ± 0.004	0.535 ± 0.039

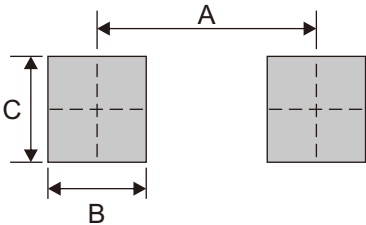
Marking Code

Part Number	Marking Code
ATV02W-B1-HF	See Page.2~3



Suggested P.C.B. PAD Layout

SIZE	SOD-123FL	
	(mm)	(inch)
A	3.16	0.124
B	1.16	0.046
C	1.17	0.046



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOD-123FL	10,000	13