

Features

- For surface mounted applications in order to optimize board space.
- Low profile package.
- Excellent clamping capability.
- IEC61000-4-2 ESD 30kV Air, 30kV contact compliance
- Protects one I/O line
- Lead-free parts meet RoHS requirements.
- Compliant to Halogen-free

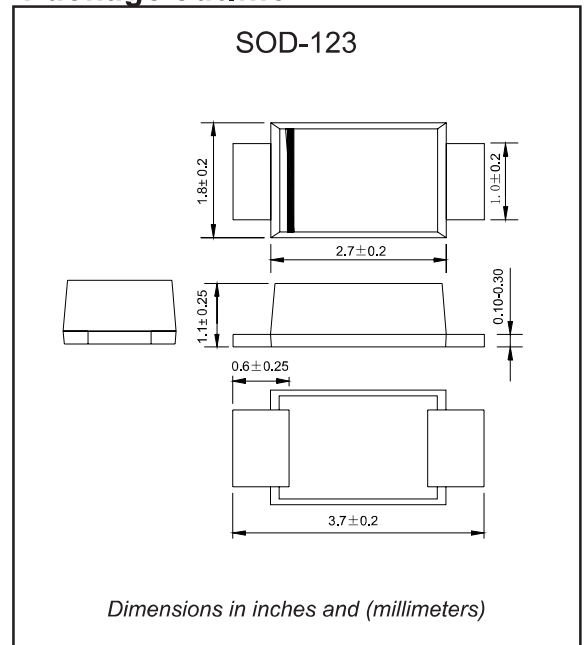
Applications

- Personal digital assistants (PDA)
- Cellular handsets & Accessories
- Portable devices
- Portable instrumentation
- Handhelds and notebooks
- Digital cameras

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-123
- Terminals : Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	Value	UNIT
Peak Power Dissipation	Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ by $10 \times 1000\mu\text{s}$ (Note 1)	P_{PPM}	200	W
Operating junction temperature range		T_J	-55 to +150	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-55 to +150	$^{\circ}\text{C}$

Note: 1. Non-repetitive current pulse, per Fig. 2 and derated above $T_A=25^{\circ}\text{C}$ per Fig. 1

Electrical characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

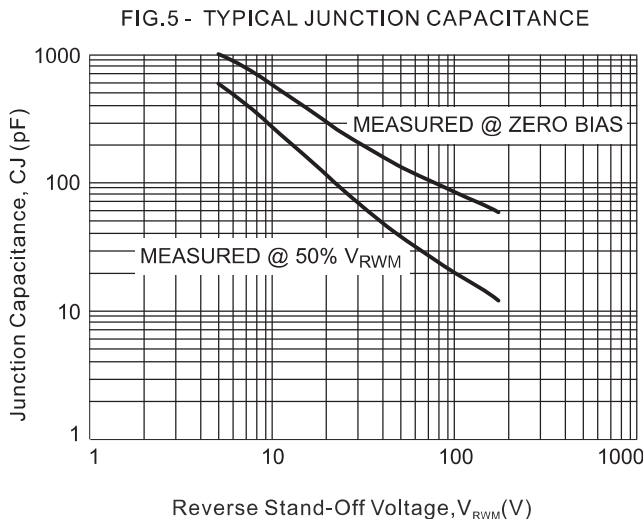
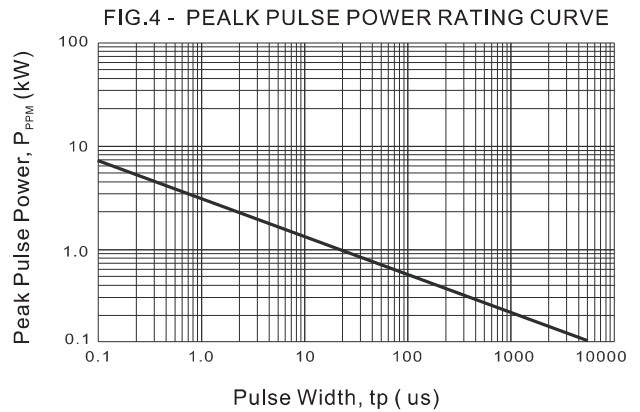
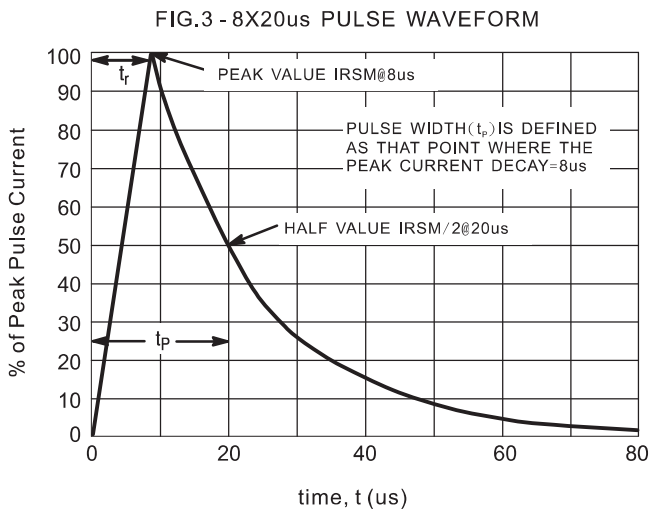
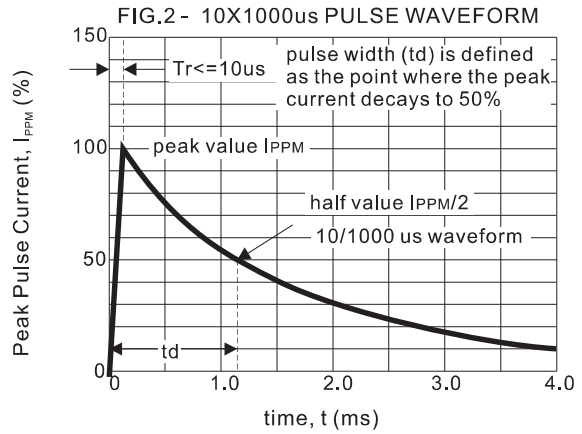
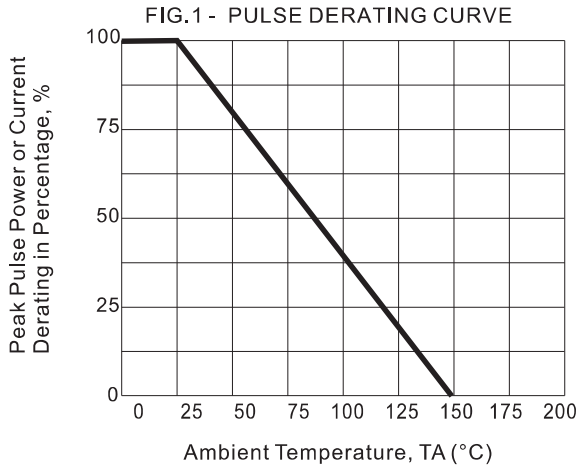
Part Number	Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @ I_T		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}
	UNI	BI	$V_{RWM}(V)$	$V_{BR\ MIN.}(V)$	$V_{BR\ MAX.}(V)$	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
SJD12A(C)05L01	AE	CAE	5.0	6.40	7.00	10	9.2	21.8	800
SJD12A(C)06L01	AG	CAG	6.0	6.67	7.37	10	10.3	19.4	800
SJD12A(C)6.5L01	AK	CAK	6.5	7.22	7.98	10	11.2	17.9	500
SJD12A(C)07L01	AM	CAM	7.0	7.78	8.60	10	12.0	16.7	200
SJD12A(C)7.5L01	AP	CAP	7.5	8.33	9.21	1	12.9	15.5	100
SJD12A(C)08L01	AR	CAR	8.0	8.89	9.83	1	13.6	14.7	50
SJD12A(C)8.5L01	AT	CAT	8.5	9.44	10.40	1	14.4	13.9	20
SJD12A(C)09L01	AV	CAV	9.0	10.00	11.10	1	15.4	13.0	10
SJD12A(C)10L01	AX	CAX	10.0	11.10	12.30	1	17.0	11.8	5
SJD12A(C)11L01	AZ	CAZ	11.0	12.20	13.50	1	18.2	11.0	3
SJD12A(C)12L01	BE	CBE	12.0	13.30	14.70	1	19.9	10.1	1
SJD12A(C)13L01	BG	CBG	13.0	14.40	15.90	1	21.5	9.3	1
SJD12A(C)14L01	BK	CBK	14.0	15.60	17.20	1	23.2	8.6	1
SJD12A(C)15L01	BM	CBM	15.0	16.70	18.50	1	24.4	8.2	1
SJD12A(C)16L01	BP	CBP	16.0	17.80	19.70	1	26.0	7.7	1
SJD12A(C)17L01	BR	CBR	17.0	18.90	20.90	1	27.6	7.3	1
SJD12A(C)18L01	BT	CBT	18.0	20.00	22.10	1	29.2	6.9	1
SJD12A(C)20L01	BV	CBV	20.0	22.20	24.50	1	32.4	6.2	1
SJD12A(C)22L01	BX	CBX	22.0	24.40	26.90	1	35.5	5.7	1
SJD12A(C)24L01	BZ	CBZ	24.0	26.70	29.50	1	38.9	5.2	1
SJD12A(C)26L01	CE	CCE	26.0	28.90	31.90	1	42.1	4.8	1
SJD12A(C)28L01	CG	CCG	28.0	31.10	34.40	1	45.4	4.4	1
SJD12A(C)30L01	CK	CCK	30.0	33.30	36.80	1	48.4	4.2	1
SJD12A(C)33L01	CM	CCM	33.0	36.70	40.60	1	53.3	3.8	1
SJD12A(C)36L01	CP	CCP	36.0	40.00	44.20	1	58.1	3.5	1
SJD12A(C)40L01	CR	CCR	40.0	44.40	49.10	1	64.5	3.1	1
SJD12A(C)43L01	CT	CCT	43.0	47.80	52.80	1	69.4	2.9	1

Electrical characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)


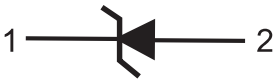


Part Number	Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @ I_T		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}
	UNI	BI	$V_{RWM}(V)$	$V_{BR\ MIN.}(V)$	$V_{BR\ MAX.}(V)$	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
SJD12A(C)45L01	CV	CCV	45.0	50.00	55.30	1	72.7	2.8	1
SJD12A(C)48L01	CX	CCX	48.0	53.30	58.90	1	77.4	2.6	1
SJD12A(C)51L01	CZ	CCZ	51.0	56.70	62.70	1	82.4	2.5	1
SJD12A(C)54L01	DE	CDE	54.0	60.00	66.30	1	87.1	2.3	1
SJD12A(C)58L01	DG	CDG	58.0	64.40	71.20	1	93.6	2.3	1
SJD12A(C)60L01	DK	CDK	60.0	66.70	73.70	1	96.8	2.1	1
SJD12A(C)64L01	DM	CDM	64.0	71.10	78.60	1	103.0	2.0	1
SJD12A(C)70L01	DP	CDP	70.0	77.80	86.00	1	113.0	1.8	1
SJD12A(C)75L01	DR	CDR	75.0	83.30	92.10	1	121.0	1.7	1
SJD12A(C)78L01	DT	CDT	78.0	86.70	95.80	1	126.0	1.6	1
SJD12A(C)85L01	DV	CDV	85.0	94.40	104.00	1	137.0	1.5	1
SJD12A(C)90L01	DX	CDX	90.0	100.00	111.00	1	146.0	1.4	1
SJD12A(C)100L01	DZ	CDZ	100.0	111.00	123.00	1	162.0	1.3	1
SJD12A(C)110L01	EE	CEE	110.0	122.00	135.00	1	177.0	1.2	1
SJD12A(C)120L01	EG	CEG	120.0	133.00	147.00	1	193.0	1.1	1
SJD12A(C)130L01	EK	CEK	130.0	144.00	159.00	1	209.0	1.0	1
SJD12A(C)150L01	EM	CEM	150.0	167.00	185.00	1	243.0	0.8	1
SJD12A(C)160L01	EP	CEP	160.0	178.00	197.00	1	259.0	0.8	1
SJD12A(C)170L01	ER	CER	170.0	189.00	209.00	1	275.0	0.8	1

- Notes:
3. Suffix C denotes Bi-directional device.
 4. V_{BR} measured with I_T current pulse = 300 μ s
 5. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

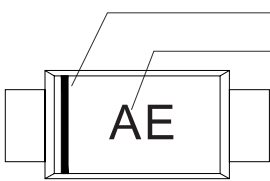

Rating and characteristic curves



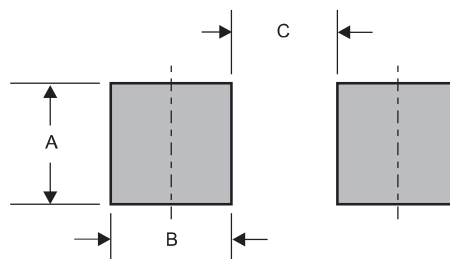
Pinning information

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		
Bi-Directional		

Marking

Type number	Example
Uni-Directional	 Cathode band Marking code (see page 2~3)
Bi-Directional	 Marking code (see page 2~3)

Suggested solder pad layout

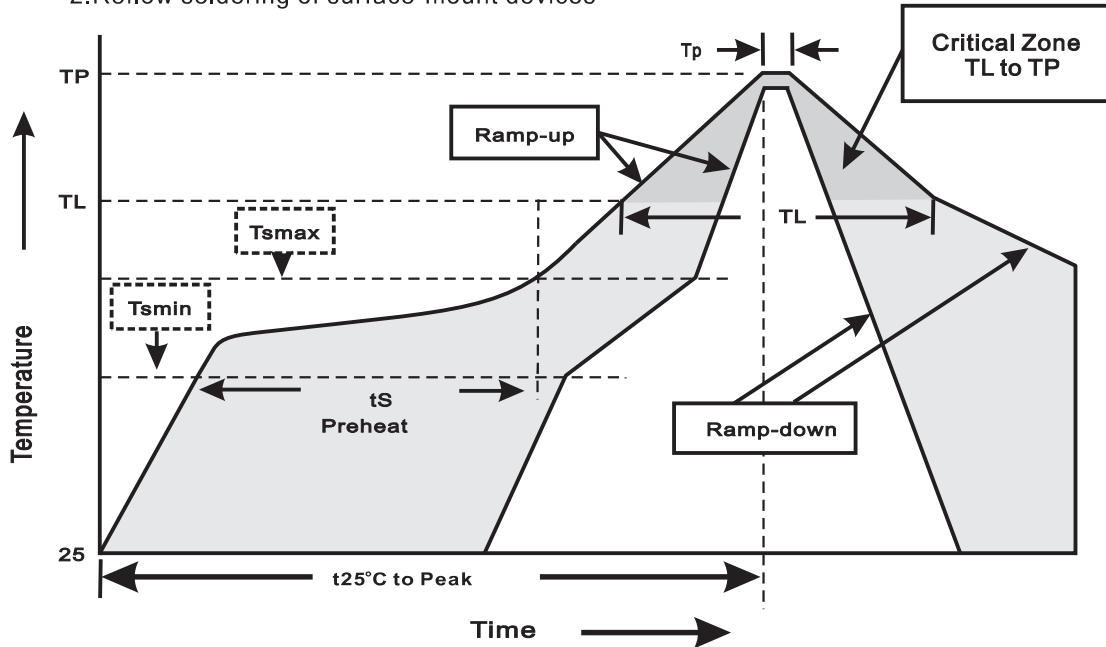


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123	0.044 (1.10)	0.040 (1.00)	0.079 (2.00)

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(TL to TP)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts)	150°C 200°C 60~120sec
Tsmax to TL -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(TL) -Time(tL)	217°C 60~260sec
Peak Temperature(TP)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(tp)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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