Innovative Service Around the Globe YAGEO

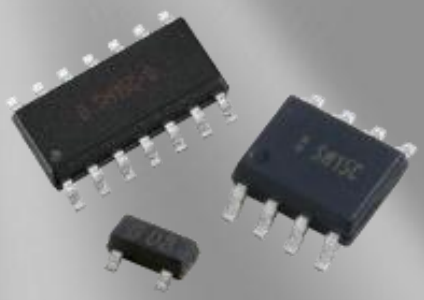
DATA SHEET

ELECTROSTATIC DISCHARGE PROTECTION DEVICES

INDUSTRIAL / CONSUMER

SJD12A(C)XXXL01 series

RoHS compliant & Halogen free



Product specification– November 02, 2018 V.0

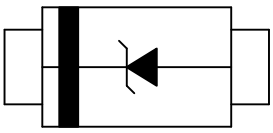
Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

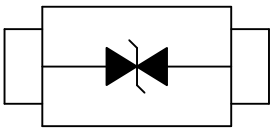
The SJD12A(C)XXL01 series are designed to protect voltage sensitive components from high voltage, high energy transients. Excellent clamping capability, high surge capability, low zener impedance and fast response time. Because of its small size, it is ideal for use in cellular phones, portable device, business machines, power supplies and many other industrial/consumer applications.

Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOD-123S surface mount package
- Protects one I/O line
- Peak power dissipation of 1000W under 8/20μs waveform
- Working voltage: 5V~170V
- Low leakage current
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270℃
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020



SJD12AXXL01



SJD12CXXL01

Pin Configuration

Applications

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

Maximum Ratings

Rating	Symbol	Value	Unit
Peak pulse power (tp=10/1000μs waveform)	P_{PP}	200	W
Peak pulse power (tp=8/20μs waveform)	P_{PP}	1000	W
ESD voltage (Contact discharge)	V_{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

Electrical Characteristics (T_J=25℃)

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(μA)
SJD12A(C)05L01	KE	AE	5.0	6.40	7.00	10	9.2	21.8	800
SJD12A(C)06L01	KG	AG	6.0	6.67	7.37	10	10.3	19.4	800
SJD12A(C)6.5L01	KK	AK	6.5	7.22	7.98	10	11.2	17.9	500
SJD12A(C)07L01	KM	AM	7.0	7.78	8.60	10	12.0	16.7	200
SJD12A(C)7.5L01	KP	AP	7.5	8.33	9.21	1	12.9	15.5	100
SJD12A(C)08L01	KR	AR	8.0	8.89	9.83	1	13.6	14.7	50
SJD12A(C)8.5L01	KT	AT	8.5	9.44	10.40	1	14.4	13.9	20
SJD12A(C)09L01	KV	AV	9.0	10.00	11.10	1	15.4	13.0	10
SJD12A(C)10L01	KX	AX	10.0	11.10	12.30	1	17.0	11.8	5
SJD12A(C)11L01	KZ	AZ	11.0	12.20	13.50	1	18.2	11.0	3
SJD12A(C)12L01	LE	BE	12.0	13.30	14.70	1	19.9	10.1	1
SJD12A(C)13L01	LG	BG	13.0	14.40	15.90	1	21.5	9.3	1
SJD12A(C)14L01	LK	BK	14.0	15.60	17.20	1	23.2	8.6	1
SJD12A(C)15L01	LM	BM	15.0	16.70	18.50	1	24.4	8.2	1
SJD12A(C)16L01	LP	BP	16.0	17.80	19.70	1	26.0	7.7	1
SJD12A(C)17L01	LR	BR	17.0	18.90	20.90	1	27.6	7.3	1
SJD12A(C)18L01	LT	BT	18.0	20.00	22.10	1	29.2	6.9	1
SJD12A(C)20L01	LV	BV	20.0	22.20	24.50	1	32.4	6.2	1
SJD12A(C)22L01	LX	BX	22.0	24.40	26.90	1	35.5	5.7	1
SJD12A(C)24L01	LZ	BZ	24.0	26.70	29.50	1	38.9	5.2	1
SJD12A(C)26L01	ME	CE	26.0	28.90	31.90	1	42.1	4.8	1
SJD12A(C)28L01	MG	CG	28.0	31.10	34.40	1	45.4	4.4	1
SJD12A(C)30L01	MK	CK	30.0	33.30	36.80	1	48.4	4.2	1
SJD12A(C)33L01	MM	CM	33.0	36.70	40.60	1	53.3	3.8	1
SJD12A(C)36L01	MP	CP	36.0	40.00	44.20	1	58.1	3.5	1
SJD12A(C)40L01	MR	CR	40.0	44.40	49.10	1	64.5	3.1	1
SJD12A(C)43L01	MT	CT	43.0	47.80	52.80	1	69.4	2.9	1

Electrical Characteristics (T_J=25℃)

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(μA)
SJD12A(C)45L01	MV	CV	45.0	50.00	55.30	1	72.7	2.8	1
SJD12A(C)48L01	MX	CX	48.0	53.30	58.90	1	77.4	2.6	1
SJD12A(C)51L01	MZ	CZ	51.0	56.70	62.70	1	82.4	2.5	1
SJD12A(C)54L01	NE	DE	54.0	60.00	66.30	1	87.1	2.3	1
SJD12A(C)58L01	NG	DG	58.0	64.40	71.20	1	93.6	2.3	1
SJD12A(C)60L01	NK	DK	60.0	66.70	73.70	1	96.8	2.1	1
SJD12A(C)64L01	NM	DM	64.0	71.10	78.60	1	103.0	2.0	1
SJD12A(C)70L01	NP	DP	70.0	77.80	86.00	1	113.0	1.8	1
SJD12A(C)75L01	NR	DR	75.0	83.30	92.10	1	121.0	1.7	1
SJD12A(C)78L01	NT	DT	78.0	86.70	95.80	1	126.0	1.6	1
SJD12A(C)85L01	NV	DV	85.0	94.40	104.00	1	137.0	1.5	1
SJD12A(C)90L01	NX	DX	90.0	100.00	111.00	1	146.0	1.4	1
SJD12A(C)100L01	NZ	DZ	100.0	111.00	123.00	1	162.0	1.3	1
SJD12A(C)110L01	PE	EE	110.0	122.00	135.00	1	177.0	1.2	1
SJD12A(C)120L01	PG	EG	120.0	133.00	147.00	1	193.0	1.1	1
SJD12A(C)130L01	PK	EK	130.0	144.00	159.00	1	209.0	1.0	1
SJD12A(C)150L01	PM	EM	150.0	167.00	185.00	1	243.0	0.8	1
SJD12A(C)160L01	PP	EP	160.0	178.00	197.00	1	259.0	0.8	1
SJD12A(C)170L01	PR	ER	170.0	189.00	209.00	1	275.0	0.8	1

Typical Characteristics Curves

Figure 1. Peak Pulse Power Rating Curve

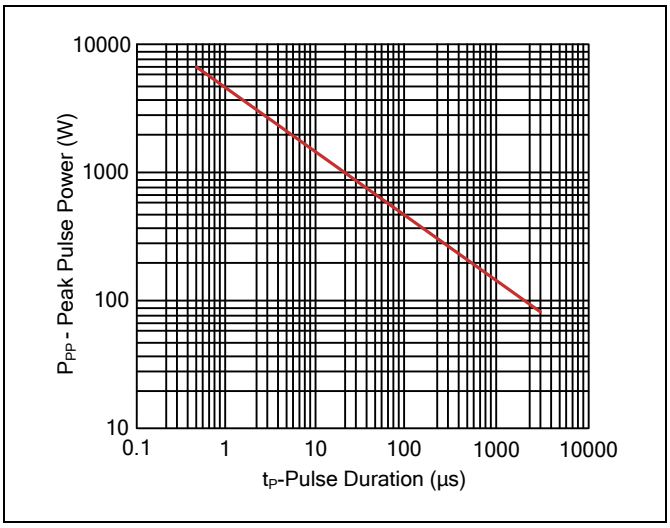


Figure 2. 10/1000μs Pulse Waveforms

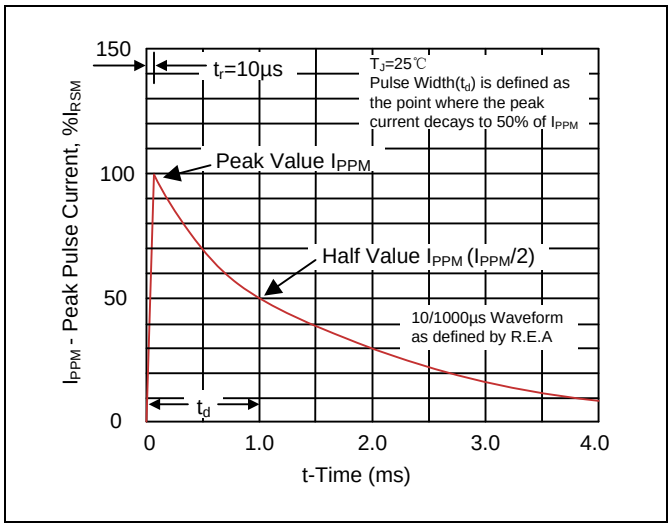


Figure 3. 8/20μs Pulse Waveforms

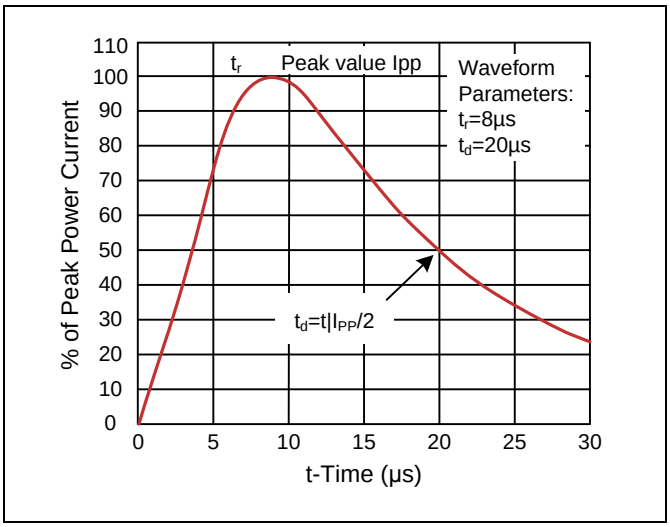


Figure 4. Power Derating Curve

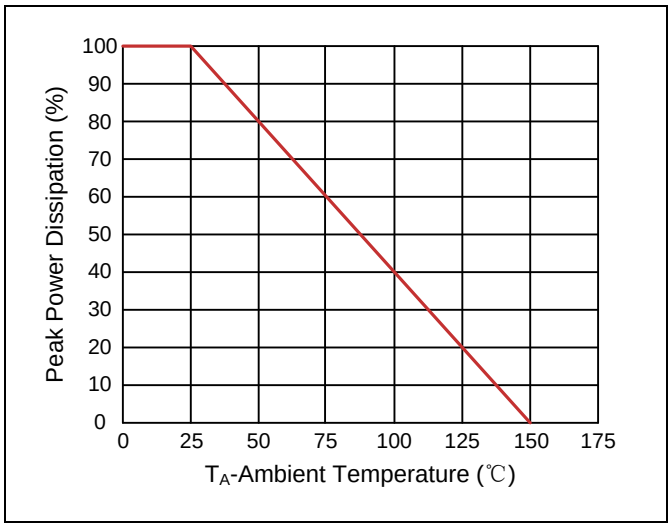
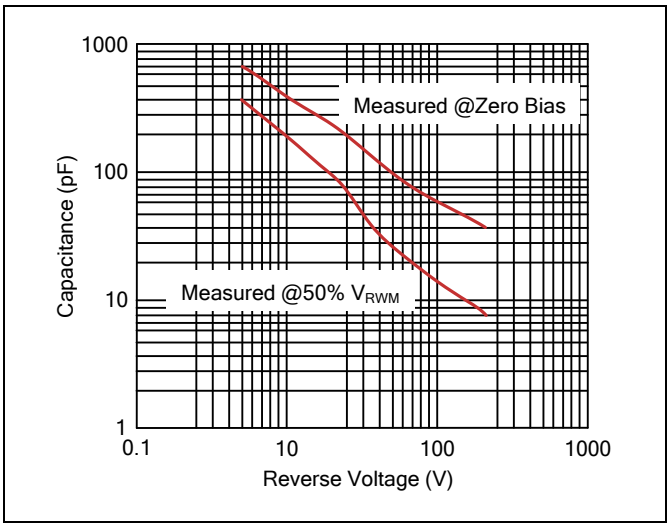
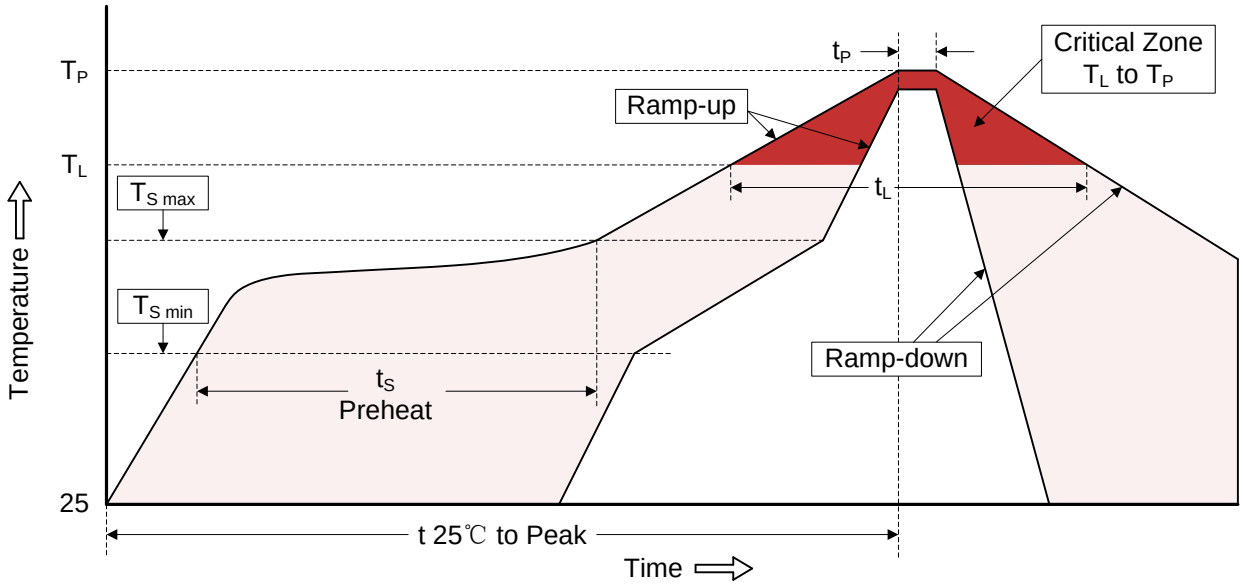


Figure 5. Capacitance vs. Reverse Voltage



Recommended Soldering Conditions

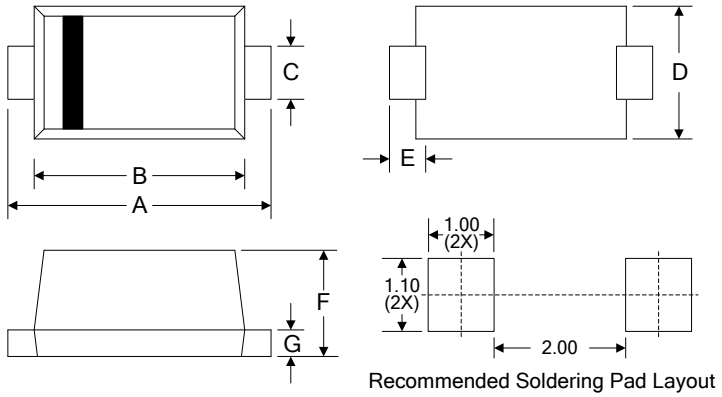
Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (ts)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

Dimensions (SOD-123S)

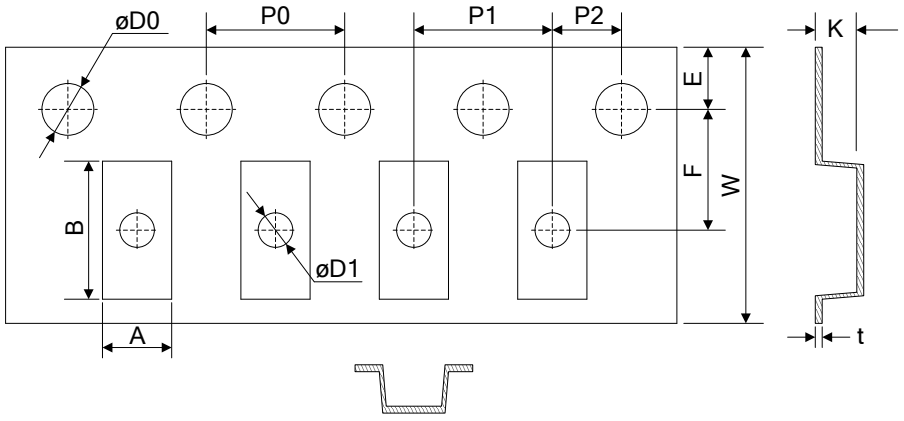


Recommended Soldering Pad Layout

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.50	3.90	0.138	0.154
B	2.60	3.00	0.102	0.118
C	0.75	1.10	0.030	0.043
D	1.60	2.00	0.063	0.079
E	0.80Typ.		0.031Typ.	
F	0.90	1.40	0.035	0.055
G	0.12	0.22	0.005	0.009

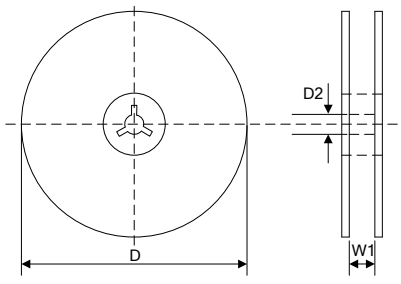
Packaging

Tape



Symbol	Dimension (mm)
W	8.00±0.30
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
D0	Φ1.50±0.10
D1	Φ1.00±0.05
E	1.75±0.10
F	3.50±0.10
A	2.00±0.10
B	3.95±0.10
K	1.40±0.12
t	0.23±0.10

Reel



D	Φ178.0±2.0
D2	Φ13.0
W1	9.5
Quantity: 3000PCS	

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
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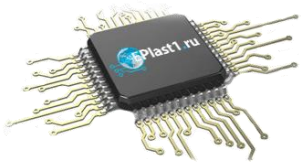
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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