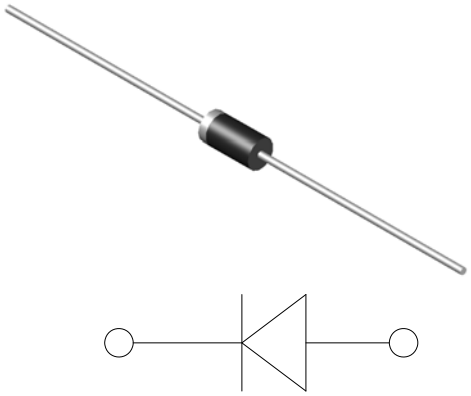
Transient Voltage Suppressor Diodes



Features

- Excellent clamping capability
- Low dynamic impedance
- Solder dip 275 °C max. 7 s, per JESD 22-B106

Mechanical Data

- **Package**: DO-204AC(DO-15)
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:**Color band denotes cathode end

■Maximum Ratings (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform (1)	P_{PPM}	W	500
Peak pulse current, with a 10/1000us waveform (1)	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at TL=75℃	P_D	W	3
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only (2)	I_{FSM}	A	70
Operating junction and storage temperature range	T_J,T_{STG}	℃	-55 to +150

■Electrical Characteristics (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage at 35A for unidirectional only	V_{FM}	V	3.5

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃per Fig.2.

(2) Measured on 8.3ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.

■Ordering Information (Example)

PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SA SERIES	D1	Approximate 0.38	3000	3000	30000	Tape
SA SERIES	C1	Approximate 0.38	500	500	25000	Bulk

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R @ V_{WM} （μA）	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current IPP (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)	Maximum Temperature Coefficient of VBR (%/°C)
		Min (V)	Max (V)	IT (mA)					
SA5.0	SA5.0C	6.40	7.30	10	600	5.0	52.1	9.6	5.0
SA5.0A	SA5.0CA	6.4	7.07	10	600	5.0	54.3	9.2	5.0
SA6.0	SA6.0C	6.67	8.15	10	600	6.0	43.9	11.4	5.0
SA6.0A	SA6.0CA	6.67	7.37	10	600	6.0	48.5	10.3	5.0
SA6.5	SA6.5C	7.22	8.82	10	400	6.5	40.7	12.3	5.0
SA6.5A	SA6.5CA	7.22	7.98	10	400	6.5	44.7	11.2	5.0
SA7.0	SA7.0C	7.78	9.51	10	150	7.0	37.6	13.3	6.0
SA7.0A	SA7.0CA	7.78	8.60	10	150	7.0	41.7	12.0	6.0
SA7.5	SA7.5C	8.33	10.2	1.0	50	7.5	35.0	14.3	7.0
SA7.5A	SA7.5CA	8.33	9.21	1.0	50	7.5	38.8	12.9	7.0
SA8.0	SA8.0C	8.89	10.9	1.0	25	8.0	33.3	15.0	7.0
SA8.0A	SA8.0CA	8.89	9.83	1.0	25	8.0	36.8	13.6	7.0
SA8.5	SA8.5C	9.44	11.5	1.0	5.0	8.5	31.4	15.9	8.0
SA8.5A	SA8.5CA	9.44	10.4	1.0	5.0	8.5	34.7	14.4	8.0
SA9.0	SA9.0C	10.0	12.2	1.0	5.0	9.0	29.6	16.9	9.0
SA9.0A	SA9.0CA	10.0	11.1	1.0	5.0	9.0	32.5	15.4	9.0
SA10	SA10C	11.1	13.6	1.0	5.0	10	26.6	18.8	10
SA10A	SA10CA	11.1	12.3	1.0	5.0	10	29.4	17.0	10
SA11	SA11C	12.2	14.9	1.0	5.0	11	24.9	20.1	11
SA11A	SA11CA	12.2	13.5	1.0	5.0	11	27.5	18.2	11
SA12	SA12C	13.3	16.3	1.0	5.0	12	22.7	22.0	12
SA12A	SA12CA	13.3	14.7	1.0	5.0	12	25.1	19.9	12
SA13	SA13C	14.4	17.6	1.0	5.0	13	21.0	23.8	13
SA13A	SA13CA	14.4	15.9	1.0	5.0	13	23.3	21.5	13
SA14	SA14C	15.6	19.1	1.0	5.0	14	19.4	25.8	14
SA14A	SA14CA	15.6	17.2	1.0	5.0	14	21.6	23.2	14
SA15	SA15C	16.7	20.4	1.0	5.0	15	18.6	26.9	16
SA15A	SA15CA	16.7	18.5	1.0	5.0	15	20.5	24.4	16
SA16	SA16C	17.8	21.8	1.0	5.0	16	17.4	28.8	19
SA16A	SA16CA	17.8	19.7	1.0	5.0	16	19.2	26.0	17
SA17	SA17C	18.9	23.1	1.0	5.0	17	16.4	30.5	20
SA17A	SA17CA	18.9	20.9	1.0	5.0	17	18.1	27.6	19
SA18	SA18C	20.0	24.4	1.0	5.0	18	15.5	32.2	21
SA18A	SA18CA	20.0	22.1	1.0	5.0	18	17.1	29.2	20
SA19	SA19C	21.13	25.76	1.0	5.0	19.0	14.7	34.0	23
SA19A	SA19CA	21.1	23.3	1.0	5.0	19.0	16.24	30.8	21
SA20	SA20C	22.2	27.1	1.0	5.0	20	14.0	35.8	25

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R @ V_{WM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current IPP (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)	Maximum Temperature Coefficient of VBR (%/°C)
		Min (V)	Max (V)	IT (mA)					
SA20A	SA20CA	22.2	24.5	1.0	5.0	20	15.4	32.4	23
SA22	SA22C	24.4	29.8	1.0	5.0	22	22.7	39.4	28
SA22A	SA22CA	24.4	26.9	1.0	5.0	22	14.1	35.5	25
SA24	SA24C	26.7	32.6	1.0	5.0	24	11.6	43.0	31
SA24A	SA24CA	26.7	29.5	1.0	5.0	24	12.9	38.9	28
SA26	SA26C	28.9	35.3	1.0	5.0	26	10.7	46.6	31
SA26A	SA26CA	28.9	31.9	1.0	5.0	26	11.9	42.1	30
SA28	SA28C	31.1	38.0	1.0	5.0	28	10.0	50.1	35
SA28A	SA28CA	31.1	34.4	1.0	5.0	28	11.0	45.4	31
SA30	SA30C	33.3	40.7	1.0	5.0	30	9.3	53.5	39
SA30A	SA30CA	33.3	36.8	1.0	5.0	30	10.0	48.4	36
SA33	SA33C	36.7	44.9	1.0	5.0	33	8.5	59.0	42
SA33A	SA33CA	36.7	40.6	1.0	5.0	33	9.4	53.3	39
SA36	SA36C	40.0	48.9	1.0	5.0	36	7.8	64.3	46
SA36A	SA36CA	40.0	44.2	1.0	5.0	36	8.6	58.1	41
SA40	SA40C	44.4	54.3	1.0	5.0	40	7.0	71.4	51
SA40A	SA40CA	44.4	49.1	1.0	5.0	40	7.8	64.5	46
SA43	SA43C	47.8	58.4	1.0	5.0	43	6.5	76.7	55
SA43A	SA43CA	47.8	52.8	1.0	5.0	43	7.2	69.4	50
SA45	SA45C	50.0	61.1	1.0	5.0	45	6.2	80.3	58
SA45A	SA45CA	50.0	55.3	1.0	5.0	45	6.9	72.7	52
SA48	SA48C	53.3	65.2	1.0	5.0	48	5.8	85.5	63
SA48A	SA48CA	53.3	58.9	1.0	5.0	48	6.5	77.4	56
SA51	SA51C	56.7	69.3	1.0	5.0	51	5.5	91.1	66
SA51A	SA51CA	56.7	62.7	1.0	5.0	51	6.1	82.4	61
SA54	SA54C	60.0	73.3	1.0	5.0	54	5.2	96.3	71
SA54A	SA54CA	60.0	66.3	1.0	5.0	54	5.7	87.1	65
SA58	SA58C	64.4	78.7	1.0	5.0	58	4.9	103	78
SA58A	SA58CA	64.4	71.2	1.0	5.0	58	5.3	93.6	70
SA60	SA60C	66.7	81.5	1.0	5.0	60	4.7	107	80
SA60A	SA60CA	66.7	73.7	1.0	5.0	60	5.2	96.8	71
SA64	SA64C	71.1	86.9	1.0	5.0	64	4.4	114	86
SA64A	SA64CA	71.1	78.6	1.0	5.0	64	4.9	103	76
SA70	SA70C	77.8	95.1	1.0	5.0	70	4.0	125	94
SA70A	SA70CA	77.8	86.0	1.0	5.0	70	4.4	113	85
SA75	SA75C	83.3	102	1.0	5.0	75	3.7	134	101

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R @ V_{WM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current IPP (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)	Maximum Temperature Coefficient of VBR (%/°C)
		Min (V)	Max (V)	IT (mA)					
SA75A	SA75CA	83.3	92.1	1.0	5.0	75	4.1	121	91
SA78	SA78C	86.7	106	1.0	5.0	78	3.6	139	105
SA78A	SA78CA	86.7	95.8	1.0	5.0	78	4.0	126	95
SA85	SA85C	94.4	115	1.0	5.0	85	3.3	151	114
SA85A	SA85CA	94.4	104	1.0	5.0	85	3.6	137	103
SA90	SA90C	100	122	1.0	5.0	90	3.1	160	121
SA90A	SA90CA	100	111	1.0	5.0	90	3.4	146	110
SA100	SA100C	111	136	1.0	5.0	100	2.8	179	135
SA100A	SA100CA	111	123	1.0	5.0	100	3.1	162	123
SA110	SA110C	122	149	1.0	5.0	110	2.6	196	148
SA110A	SA110CA	122	135	1.0	5.0	110	2.8	177	133
SA120	SA120C	133	163	1.0	5.0	120	2.3	214	162
SA120A	SA120CA	133	147	1.0	5.0	120	2.6	193	146
SA130	SA130C	144	176	1.0	5.0	130	2.2	230	175
SA130A	SA130CA	144	159	1.0	5.0	130	2.4	209	158
SA140	SA140C	155.68	190.4	1.0	5.0	140	2.0	250.6	188
SA140A	SA140CA	155	171	1.0	5.0	140	2.2	226.8	170
SA150	SA150C	167	204	1.0	5.0	150	1.9	268	203
SA150A	SA150CA	167	185	1.0	5.0	150	2.1	243	184
SA160	SA160C	178	218	1.0	5.0	160	1.7	257	217
SA160A	SA160CA	178	197	1.0	5.0	160	1.9	259	196
SA170	SA170C	189	231	1.0	5.0	170	1.6	304	230
SA170A	SA170CA	189	209	1.0	5.0	170	1.8	275	208
SA180	SA180C	200.16	244.80	1.0	5.0	180	1.55	322.2	244
SA180A	SA180CA	200.0	220.0	1.0	5.0	180	1.71	291.6	221
SA190	SA190C	211.28	258.40	1.0	5.0	190	1.47	340.1	258
SA190A	SA190CA	211.0	232.0	1.0	5.0	190	1.62	307.8	234

Note:

For bi-directional types having VWM of 10 V and less, the I_R limit is doubled

■ Characteristics (Typical)

FIG1:Peak Pulse Power Rating Curve

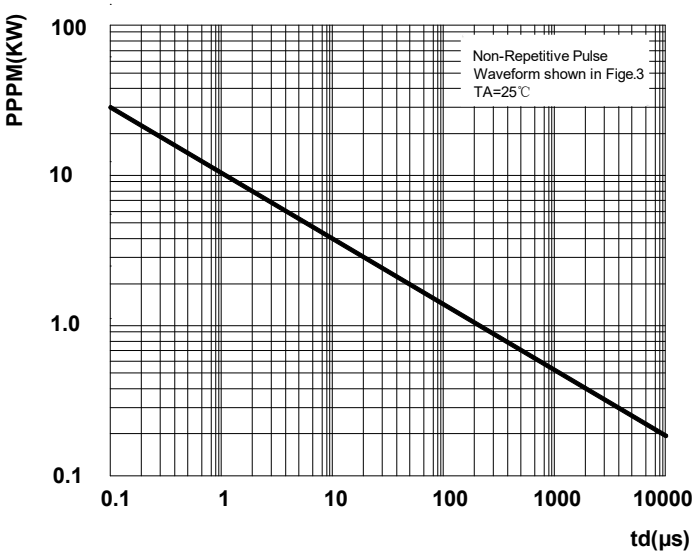


FIG2: Pulse Power or Current vs Initial Junction Temperature

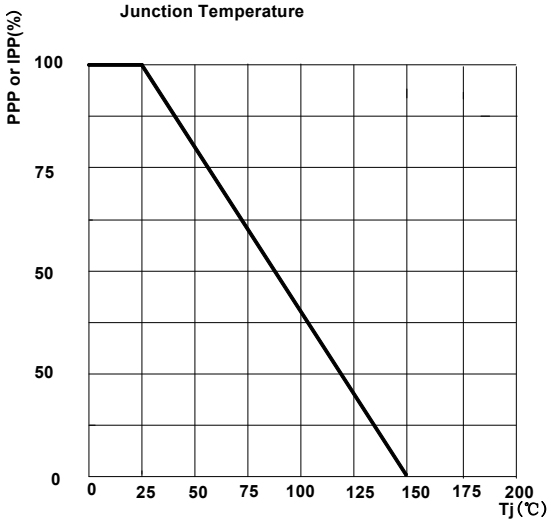


FIG3: Pulse Waveform

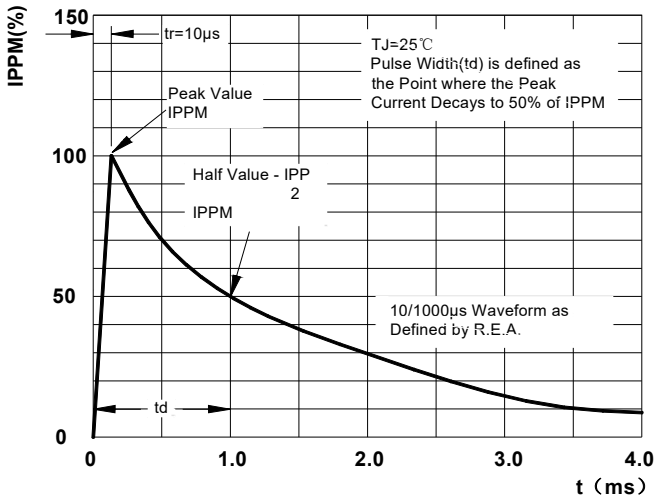


FIG4: Power Derating Curve

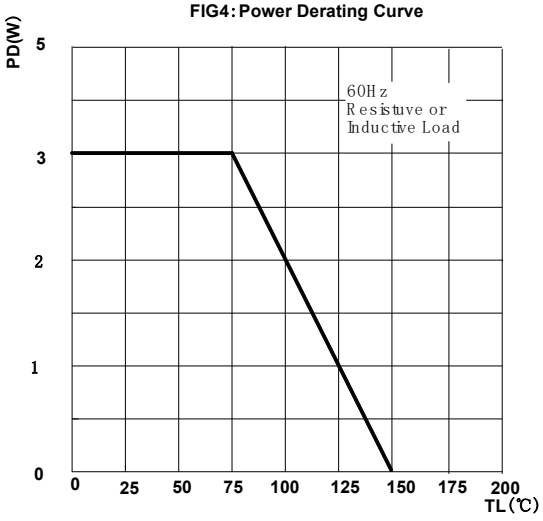
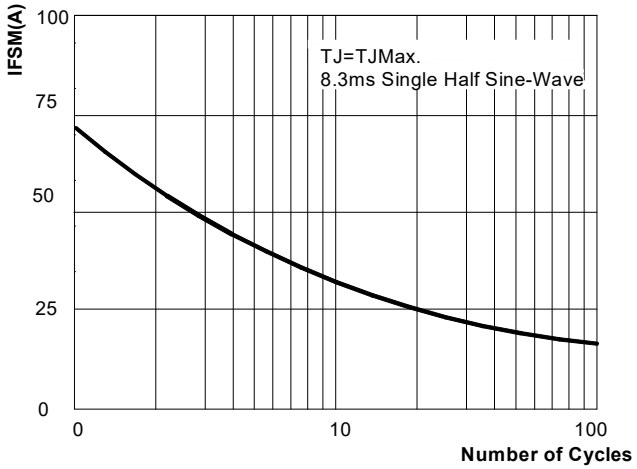
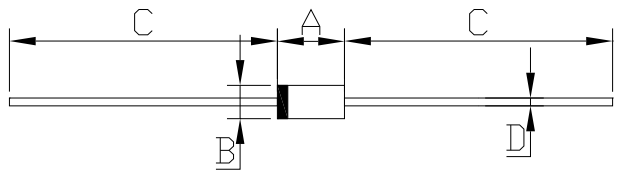


FIG5: Maximum Non-Repetitive Surge Current



■ Outline Dimensions

DO-204AC(DO-15)



Dimensions in millimeters

DO-204AC(DO-15)		
Dim	Min	Max
A	5.80	7.60
B	2.60	3.60
C	25.4	/
D	0.70	0.90

Notice

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