

1N6267-1N6303A

Transient Voltage Suppressor

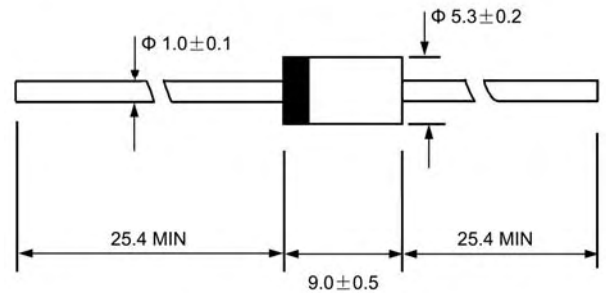
BREAKDOWN VOLTAGE: 6.8 --- 200 V
PEAK PULSE POWER: 1500 W



Features

- ◇ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◇ Glass passivated junction
- ◇ 1500W peak pulse power capability with a 10/1000 μ s waveform, repetition rate (duty cycle): 0.05%
- ◇ Excellent clamping capability
- ◇ Low incremental surge resistance
- ◇ Fast response time: typically less than 1.0ps from 0 Volts to $V_{(BR)}$ for uni-directional and 5.0ns for bi-directional types
- ◇ For devices with $V_{(BR)} \geq 10V$, I_D are typically less than 1.0 μ A
- ◇ High temperature soldering guaranteed: 265 $^{\circ}C$ / 10 seconds, 0.375"(9.5mm) lead length, 51bs. (2.3kg) tension

DO-201AE



Dimensions in millimeters

Mechanical Data

- ◇ Case: JEDEC DO-201AE, molded plastic
- ◇ Polarity: Color band denotes positive end (cathode) except for bidirectional
- ◇ Weight: 0.032 ounces, 0.9 grams
- ◇ Mounting position: Any

DEVICES FOR BIDIRECTIONAL APPLICATIONS

For bi-directional use C or CA suffix for types 1N6267 thru types 1N6303A (e.g. 1N6267, 1N6303A). Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25 $^{\circ}C$ ambient temperature unless otherwise specified.

	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000 μ s waveform (NOTE 1, FIG.1)	P_{PPM}	Minimum 1500	W
Peak pulse current with a 10/1000 μ s waveform (NOTE 1)	I_{PPM}	SEE TABLE 1	A
Steady state power dissipation at $T_L=75^{\circ}C$ lead lengths 0.375"(9.5mm) (NOTE 2)	$P_{M(AV)}$	6.5	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) (NOTE 3)	I_{FSM}	200.0	A
Maximum instantaneous forward voltage at 100 A for unidirectional only (NOTE 4)	V_F	3.5/5.0	V
Typical thermal resistance junction-to-lead	$R_{\theta JL}$	20	$^{\circ}C/W$
Typical thermal resistance junction-to-ambient	$R_{\theta JA}$	75	$^{\circ}C/W$
Operating junction and storage temperature range	T_J, T_{STG}	-50---+175	$^{\circ}C$

NOTES: (1) Non-repetitive current pulses, per Fig. 3 and derated above $T_A=25^{\circ}C$ per Fig. 2

(2) Mounted on copper pad area of 1.6" x 1.6"(40 x 40mm 2) per Fig. 5

(3) Measured of 8.3ms single half sine-wave or square wave, duty cycle=4 pulses per minute maximum

(4) $V_F=3.5$ Volt max. for devices of $V_{(BR)} \leq 200V$, and $V_F=5.0$ Volt max. for devices of $V_{(BR)} > 200V$



1N6267-1N6303A

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ELECTRICAL CHARACTERISTICS at(T_A=25°C unless otherwise noted)

Device Type	Breakdown Voltage V _{BR} (V)(NOTE1)		Test Current at I _T (mA)	Stand-off Voltage V _{WM} (V)	Maximum Reverse Leakage at V _{WM} I _D (NOTE3)(μA)	Maximum Peak Pulse I _{PPM} (NOTE2)(A)	Maximum Clamping Voltage at I _{PPM} V _C (V)	Maximum Temperature Coefficient of V _{BR} (%/°C)
	Min	Max						
1N6267	6.12	7.48	10.0	5.50	1000	139	10.8	0.057
1N6267A	6.45	7.14	10.0	5.80	1000	143	10.5	0.057
1N6268	6.75	8.25	10.0	6.05	500	128	11.7	0.061
1N6268A	7.13	7.88	10.0	6.40	500	133	11.3	0.061
1N6269	7.38	9.02	10.0	6.63	200	120	12.5	0.065
1N6269A	7.79	8.61	10.0	7.02	200	124	12.1	0.065
1N6270	8.19	10.0	1.0	7.37	50	109	13.8	0.068
1N6270A	8.65	9.55	1.0	7.78	50	112	13.4	0.068
1N6271	9.0	11.0	1.0	8.10	10	100	15.0	0.073
1N6271A	9.5	10.5	1.0	8.55	10	103	14.5	0.073
1N6272	9.9	12.1	1.0	8.92	5.0	92.6	16.2	0.075
1N6272A	10.5	11.6	1.0	9.40	5.0	96.2	15.6	0.075
1N6273	10.8	13.2	1.0	9.72	5.0	86.7	17.3	0.076
1N6273A	11.4	12.6	1.0	10.2	5.0	89.8	16.7	0.078
1N6274	11.7	14.3	1.0	10.5	5.0	78.9	19.0	0.081
1N6274A	12.4	13.7	1.0	11.1	5.0	82.4	18.2	0.081
1N6275	13.5	16.5	1.0	12.1	1.0	68.2	22.0	0.084
1N6275A	14.3	15.8	1.0	12.8	1.0	70.8	21.2	0.084
1N6276	14.4	17.6	1.0	12.9	1.0	63.8	23.5	0.086
1N6276A	15.2	16.8	1.0	13.6	1.0	66.7	22.5	0.086
1N6277	16.2	19.8	1.0	14.5	1.0	56.6	26.5	0.088
1N6277A	17.1	18.9	1.0	15.3	1.0	59.5	25.2	0.089
1N6278	18.0	22.0	1.0	16.2	1.0	51.5	29.1	0.090
1N6278A	19.0	21.0	1.0	17.1	1.0	54.2	27.7	0.090
1N6279	19.8	24.2	1.0	17.8	1.0	47.0	31.9	0.092
1N6279A	20.9	23.1	1.0	18.8	1.0	49.0	30.6	0.092
1N6280	21.6	26.4	1.0	19.4	1.0	43.2	34.7	0.094
1N6280A	22.8	25.2	1.0	20.5	1.0	45.2	33.2	0.094
1N6281	24.3	29.7	1.0	21.8	1.0	38.4	39.1	0.096
1N6281A	25.7	28.4	1.0	23.1	1.0	40.0	37.5	0.096
1N6282	27.0	33.0	1.0	24.3	1.0	34.5	43.5	0.097
1N6282A	28.5	31.5	1.0	25.6	1.0	36.2	41.4	0.097
1N6283	29.7	36.3	1.0	26.8	1.0	31.4	47.7	0.098
1N6283A	31.4	34.7	1.0	28.2	1.0	32.8	45.7	0.098
1N6284	32.4	39.6	1.0	29.1	1.0	28.8	52.0	0.099
1N6284A	34.2	37.8	1.0	30.8	1.0	30.1	49.9	0.099
1N6285	35.1	42.9	1.0	31.6	1.0	26.6	56.4	0.100
1N6285A	37.1	41.0	1.0	33.3	1.0	27.8	53.9	0.100



1N6267-1N6303A

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ELECTRICAL CHARACTERISTICS at(T_A=25°C unless otherwise noted)

Device Type	Breakdown Voltage V _(BR) (V)(NOTE1)		Test Current at I _T (mA)	Stand-off Voltage V _{WM} (V)	Maximum Reverse Leakage at V _{WM} I _D (NOTE3)(μA)	Maximum Peak Pulse I _{PPM} (NOTE2) (A)	Maximum Clamping Voltage at I _{PPM} V _C (V)	Maximum Temperature Coefficient of V _(BR) (%/°C)
	Min	Max						
1N6286	38.7	47.3	1.0	34.8	1.0	24.2	61.9	0.101
1N6286A	40.9	45.2	1.0	36.8	1.0	25.3	59.3	0.101
1N6287	42.3	51.7	1.0	38.1	1.0	22.1	67.8	0.101
1N6287A	44.7	49.4	1.0	40.2	1.0	23.1	64.8	0.101
1N6288	45.9	56.1	1.0	41.3	1.0	20.4	73.5	0.102
1N6288A	48.5	53.6	1.0	43.6	1.0	21.4	70.1	0.102
1N6289	50.4	61.8	1.0	45.4	1.0	18.6	80.5	0.103
1N6289A	53.2	58.8	1.0	47.8	1.0	19.5	77.0	0.103
1N6290	55.8	68.2	1.0	50.2	1.0	16.9	89.0	0.104
1N6290A	58.9	65.1	1.0	53.0	1.0	17.6	85.0	0.104
1N6291	61.2	74.8	1.0	55.1	1.0	15.3	98.0	0.104
1N6291A	64.6	71.4	1.0	58.1	1.0	16.3	92.0	0.104
1N6292	67.5	82.5	1.0	60.7	1.0	13.9	109	0.105
1N6292A	71.3	78.8	1.0	64.1	1.0	14.6	104	0.105
1N6293	73.8	90.2	1.0	66.4	1.0	12.7	118	0.105
1N6293A	77.9	86.1	1.0	70.1	1.0	13.3	113	0.105
1N6294	81.9	100	1.0	73.7	1.0	11.5	131	0.106
1N6294A	86.5	95.5	1.0	77.8	1.0	12.0	125	0.106
1N6295	90.0	110	1.0	81.0	1.0	10.4	144	0.106
1N6295A	95.0	105	1.0	85.5	1.0	10.9	137	0.106
1N6296	99.0	121	1.0	89.2	1.0	9.5	158	0.107
1N6296A	105	116	1.0	94.0	1.0	9.9	152	0.107
1N6297	108	132	1.0	97.2	1.0	8.7	173	0.107
1N6297A	114	126	1.0	102	1.0	9.1	165	0.107
1N6298	117	143	1.0	105	1.0	8.0	187	0.107
1N6298A	124	137	1.0	111	1.0	8.4	179	0.107
1N6299	136	165	1.0	121	1.0	7.0	215	0.108
1N6299A	143	158	1.0	128	1.0	7.2	207	0.106
1N6300	144	176	1.0	130	1.0	6.5	230	0.106
1N6300A	152	168	1.0	136	1.0	6.8	219	0.108
1N6301	153	187	1.0	138	1.0	6.1	244	0.108
1N6301A	162	179	1.0	145	1.0	6.4	234	0.108
1N6302	162	198	1.0	146	1.0	5.8	258	0.108
1N6302A	171	189	1.0	154	1.0	6.1	246	0.108
1N6303	180	220	1.0	162	1.0	5.2	287	0.108
1N6303A	190	210	1.0	171	1.0	5.5	274	0.108

NOTE: For bidirectional use C or CA suffix for types 1N6267 thru types 1N6303A(e.g.1N6267,1N6303A). Electrical characteristics apply in both directions.

Ratings AND Characteristic Curves

FIG.1 – PEAK PULSE POWER RATING CURVE

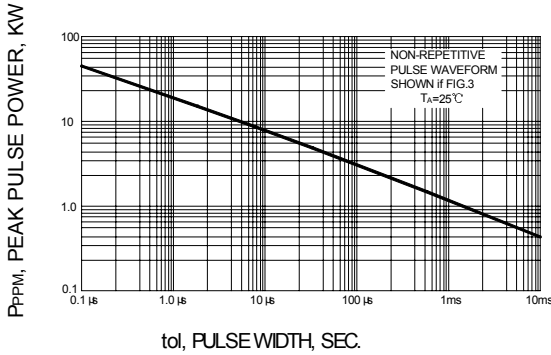


FIG.2 – PULSE DERATING CURVE

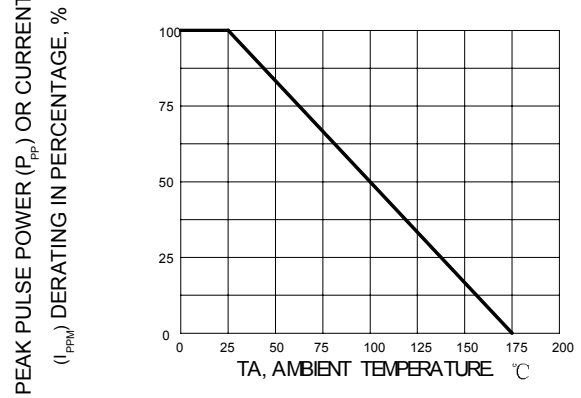


FIG.3 – PULSE WAVEFORM

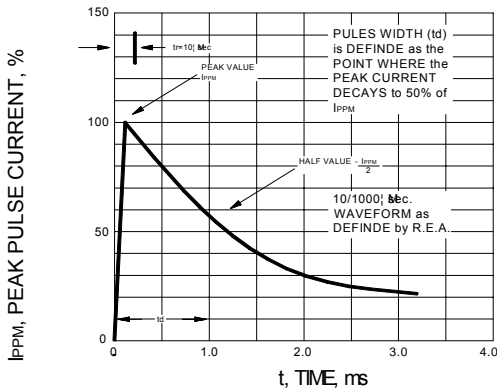


FIG.4 – TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

C_j , JUNCTION CAPACITANCE, pF

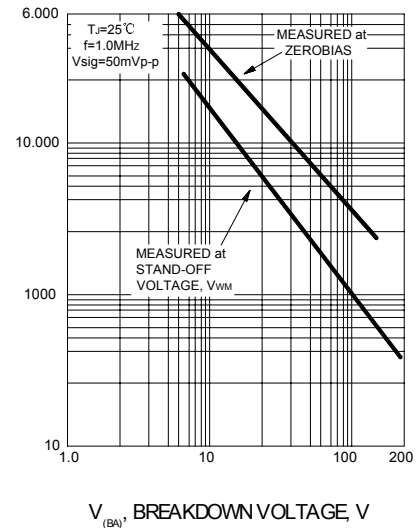


FIG.5 – STEADY STATE POWER DERATING CURVE

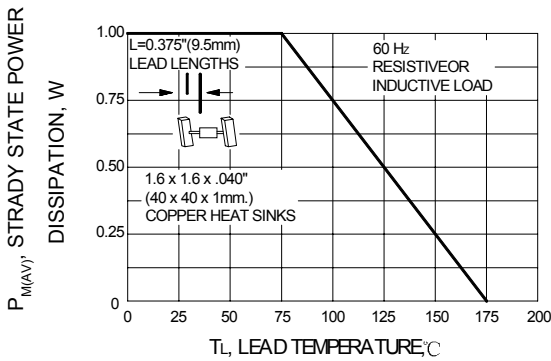


FIG.7 – TYPICAL REVERSE LEAKAGE CHARACTERISTICS

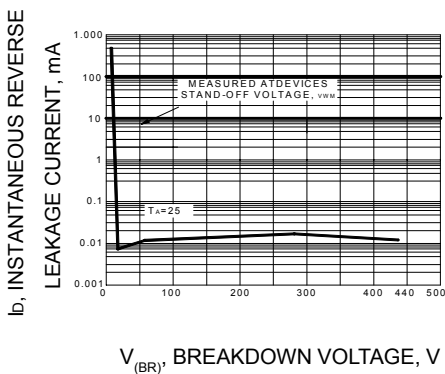


FIG.6 – MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

I_{FSM} , PEAK FORWARD SURGE CURRENT, A

