

Silicon Avalanche Diodes

1500 Watt Metal Axial Leaded Transient Voltage Suppressors

1N60 Series



FEATURES

- Hermetically sealed
- Breakdown voltage range 6.8 - 200 volts
- Glass passivated junction
- Excellent clamping capability
- Low zener impedance
- 100% surge tested
- -55°C to +150°C
- Bi-directional

MAXIMUM RATING

- Peak Pulse Power (Ppk): 15000 Watts (10 x 1000μs)@25°C (see diagram on page 3 for wave form)
- 1 watt steady state
- Response time: 1×10^{-12} seconds (theoretical)
- Operating & storage temperature: -55°C to +150°C

MECHANICAL CHARACTERISTICS

- Case: Metal hermetically sealed DO-13 package
- Terminals: Axial leads, solderable per MIL-STD-202 Method 208
- Solderable leads = 230°C for 10 seconds (1.59mm from case)
- Weight: 1.5 grammes (approx)

Agency Approvals: Recognized under the Components Program of Underwriters Laboratories.

Agency File Number: E128662

ORDERING INFORMATION

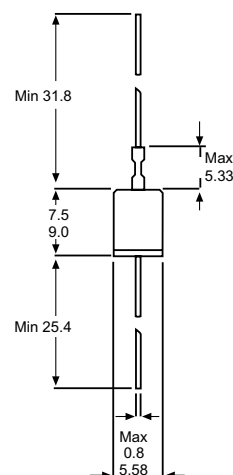
1N60 [X][X][A][]

Voltage Reference

5% Voltage Tolerance

Packaging Option

B = Bulk (500 pcs)



All dimensions in mm

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SILICON DIODE
ARRAYS

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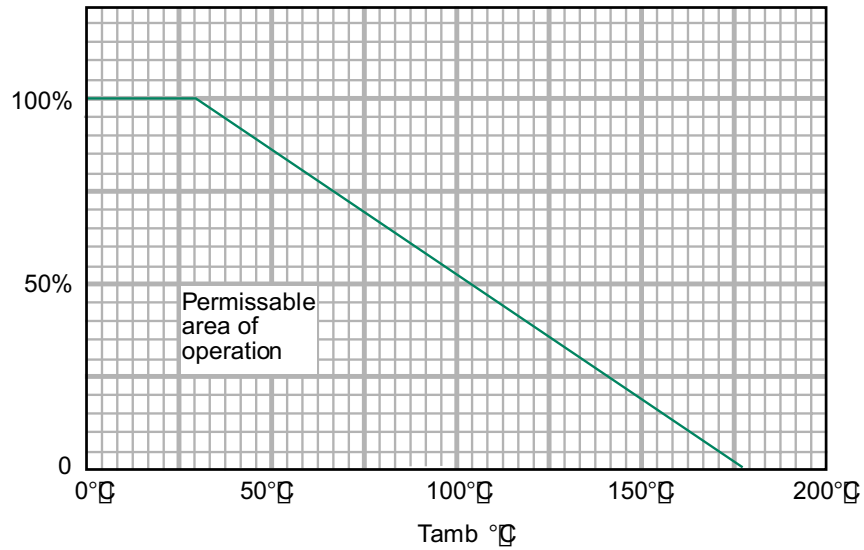


Figure 1 - Peak Power Derating Curve
Peak pulse power in percent of 25°C rating

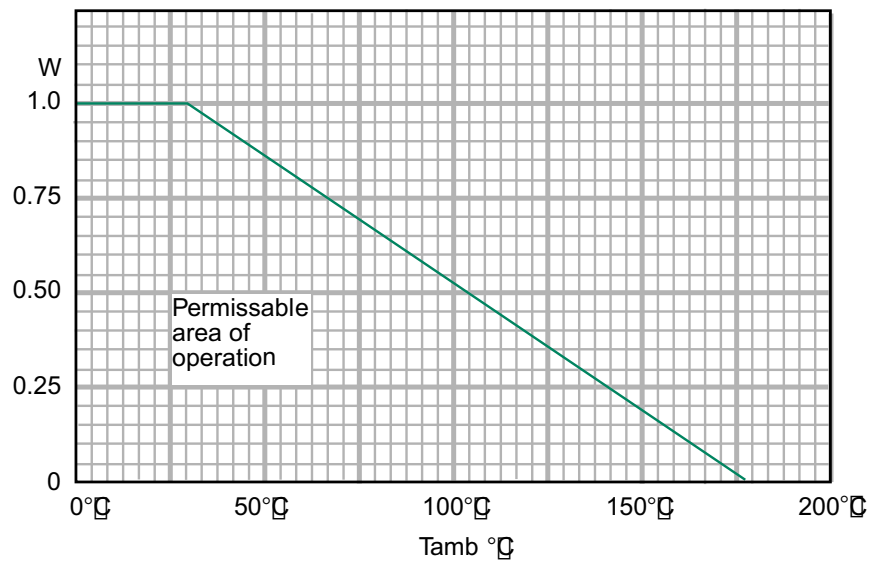


Figure 2 - Continuous D.C. Power Derating Curve
Continuous d.c. power dissipation

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ELECTRICAL SPECIFICATION @ Tamb 25°C

Part Number	Reverse Stand Off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_T			Maximum Reverse Leakage I_R @ V_R (μA)	Maximum Clamping Voltage V_C @ I_{PP} (Volts)	Maximum Peak Pulse Current I_{PP} (A)	Max Voltage Temperature Variation of V_{BR} (mV/°C)
		MIN	MAX	(mA)				
1N6036*	5.5	6.75	8.25	10	1000.0	11.7	128.0	5.0
1N6036A*	6.0	7.13	7.88	10	1000.0	11.3	132.0	5.0
1N6037*	6.5	7.38	9.02	10	500.0	12.5	120.0	5.0
1N6037A*	7.0	7.79	8.61	10	500.0	12.1	124.0	5.0
1N6038	7.0	8.19	10.00	1.0	200.0	13.8	109.0	7.0
1N6038A	7.5	8.65	9.55	1.0	200.0	13.4	112.0	7.0
1N6039	8.0	9.00	11.00	1.0	50.0	15.0	100.0	7.0
1N6039A	8.5	9.50	10.50	1.0	50.0	14.5	103.0	7.0
1N6040*	8.5	9.90	12.10	1.0	10.0	16.2	93.0	8.0
1N6040A*	9.0	10.50	11.60	1.0	10.0	15.6	96.0	8.0
1N6041*	9.0	10.80	13.20	1.0	5.0	17.3	87.0	9.0
1N6041A*	10.0	11.40	12.60	1.0	5.0	16.7	90.0	9.0
1N6042	10.0	11.70	14.30	1.0	5.0	19.0	79.0	10.0
1N6042A	11.0	12.40	13.70	1.0	5.0	18.2	82.0	10.0
1N6043	11.0	13.50	16.50	1.0	5.0	22.0	68.0	11.0
1N6043A	12.0	14.30	15.80	1.0	5.0	21.2	71.0	12.0
1N6044	12.0	14.40	17.60	1.0	5.0	23.5	64.0	12.0
1N6044A	13.0	15.20	16.80	1.0	5.0	22.5	67.0	13.0
1N6045*	14.0	16.20	19.80	1.0	5.0	26.5	56.5	14.0
1N6045A*	15.0	17.10	18.90	1.0	5.0	25.2	59.5	15.0
1N6046	16.0	18.00	22.00	1.0	5.0	29.1	51.5	17.0
1N6046A	17.0	19.00	21.00	1.0	5.0	27.7	54.0	18.0
1N6047	17.0	19.80	24.20	1.0	5.0	31.9	47.0	19.0
1N6047A	18.0	20.90	23.10	1.0	5.0	30.6	49.0	20.0
1N6048	19.0	21.60	26.40	1.0	5.0	34.7	43.0	24.0
1N6048A	20.0	22.80	25.20	1.0	5.0	33.2	45.0	24.0
1N6049*	21.0	24.30	29.70	1.0	5.0	39.1	38.5	27.0
1N6049A*	22.0	25.70	28.40	1.0	5.0	37.5	40.0	28.0
1N6050	24.0	27.00	33.00	1.0	5.0	43.5	34.5	36.0
1N6050A	25.0	28.50	31.50	1.0	5.0	41.4	36.0	31.0
1N6051*	26.0	29.70	36.30	1.0	5.0	47.7	31.5	32.0
1N6051A*	28.0	31.40	34.70	1.0	5.0	45.7	33.0	34.0
1N6052	29.0	32.40	39.60	1.0	5.0	52.0	29.0	36.0
1N6052A	30.0	34.20	37.80	1.0	5.0	49.9	30.0	37.0

Suffix 'A' denotes 5% tolerance device, no suffix denotes a 10% tolerance device.

* Preferred voltages.

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Part Number	Reverse Stand Off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_T			Maximum Reverse Leakage I_R @ V_R (μA)	Maximum Clamping Voltage V_C @ I_{PP} (Volts)	Maximum Peak Pulse Current I_{PP} (A)	Max Voltage Temperature Variation of V_{BR} (mV/°C)
		MIN	MAX	(mA)				
1N6053*	31.0	35.10	42.90	1.0	5.0	56.4	26.5	39.0
1N6053A*	33.0	37.10	41.00	1.0	5.0	53.9	28.0	40.0
1N6054*	34.0	38.70	47.30	1.0	5.0	61.9	24.0	44.0
1N6054A*	36.0	40.90	45.20	1.0	5.0	59.3	25.3	43.0
1N6055*	38.0	42.30	51.70	1.0	5.0	67.8	22.2	49.0
1N6055A*	40.0	44.70	49.40	1.0	5.0	64.8	23.2	47.0
1N6056*	41.0	45.90	56.10	1.0	5.0	73.5	20.4	53.0
1N6056A*	43.0	48.50	53.60	1.0	5.0	70.1	21.4	51.0
1N6057	45.0	50.4	61.6	1.0	5.0	80.5	18.6	58.0
1N6057A	47.0	53.2	58.8	1.0	5.0	77.0	19.5	56.0
1N6058*	48.0	55.8	68.2	1.0	5.0	89.0	16.9	64.0
1N6058A*	53.0	58.9	65.1	1.0	5.0	85.0	17.7	62.0
1N6059*	55.0	61.2	74.8	1.0	5.0	98.0	15.3	70.0
1N6059A*	58.0	64.6	71.4	1.0	5.0	92.0	16.3	68.0
1N6060*	60.0	67.5	82.5	1.0	5.0	108.0	13.9	77.0
1N6060A*	64.0	71.3	78.8	1.0	5.0	103.0	14.6	75.0
1N6061*	66.0	73.8	90.2	1.0	5.0	118.0	12.7	84.0
1N6061A*	70.0	77.9	86.1	1.0	5.0	113.0	13.3	82.0
1N6062	73.0	81.9	100.0	1.0	5.0	131.0	11.4	90.0
1N6062A	75.0	86.5	95.5	1.0	5.0	125.0	12.0	86.0
1N6063*	81.0	90.0	110.0	1.0	5.0	144.0	10.4	99.0
1N6063A*	82.0	95.0	105.0	1.0	5.0	137.0	11.0	94.0
1N6064*	90.0	99.0	121.0	1.0	5.0	158.0	9.5	109.0
1N6064A*	94.0	105.0	116.0	1.0	5.0	152.0	9.9	104.0
1N6065	95.0	108.0	132.0	1.0	5.0	173.0	8.7	120.0
1N6065A	100.0	114.0	126.0	1.0	5.0	165.0	9.1	115.0
1N6066	105.0	117.0	143.0	1.0	5.0	187.0	8.0	131.0
1N6066A	110.0	124.0	137.0	1.0	5.0	179.0	8.4	125.0
1N6067	121.0	135.0	165.0	1.0	5.0	215.0	7.0	142.0
1N6067A	128.0	143.0	158.0	1.0	5.0	207.0	7.2	136.0
1N6068	137.0	153.0	187.0	1.0	5.0	258.0	5.8	164.0
1N6068A	145.0	162.0	179.0	1.0	5.0	245.0	6.1	157.0
1N6069*	145.0	162.0	198.0	1.0	5.0	274.0	5.5	175.0
1N6069A*	150.0	171.0	189.0	1.0	5.0	261.0	5.7	167.0
1N6070	155.0	171.0	210.0	1.0	5.0	292.0	5.1	186.0
1N6070A	160.0	181.0	200.0	1.0	5.0	278.0	5.4	188.0
1N6071*	165.0	180.0	220.0	1.0	5.0	308.0	4.9	197.0
1N6071A*	170.0	190.0	210.0	1.0	5.0	294.0	5.1	188.0
1N6072	175.0	198.0	242.0	1.0	5.0	344.0	4.3	219.0
1N6072A	185.0	209.0	231.0	1.0	5.0	328.0	4.6	209.0

Suffix 'A' denotes 5% tolerance device, no suffix denotes a 10% tolerance device.

* Preferred voltages.