

SENSITRON **SEMICONDUCTOR**

1N6102A/US thru 1N6173A/US

**HERMETIC BI-DIRETIONAL
TRANSIENT SUPPRESSOR**

TECHNICAL DATA
DATA SHEET 5072, REV. A.2

AVAILABLE AS
1N61xxA/US
JAN EQUIVALENT:
SJ61xxA/US*
SV61xxA/US*
SX61xxA/US*

DESCRIPTION:

This voidless hermetically sealed bidirectional transient voltage suppressor diode is targeted for commercial and military aircraft, military vehicles, shipboard markets and all high reliability applications.

FEATURES / BENEFITS:

- ✓ Hermetic, non-cavity glass package
- ✓ Category I Metallurgically bonded
- ✓ High reliability transient protection

MAXIMUM RATINGS:

- ✓ Operating and Storage Temperature: -65°C to $+175^{\circ}\text{C}$
- ✓ Thermal Resistance (junction to lead): 33.5°C/W for 1N6103/US to 1N6137A/US and 5.0°C/W for 1N6139/US to 1N6173A/US
- ✓ Thermal Resistance (junction to encap): 8.3°C/W for 1N6103/US to 1N6137A/US and 5.0°C/W for 1N6139/US to 1N6173A/US
- ✓ Steady State Power: 3W for 1N6103/US to 1N6137A/US and 5W for 1N6139/US to 1N6173A/US at $T_L = +75^{\circ}\text{C}$ for $L = 0.375$ inch (9.53 mm)
- ✓ Steady State Power: 2W for 1N6103/US to 1N6137A/US and 3W for 1N6139/US to 1N6173A/US @ $T_A = 25^{\circ}\text{C}$
- ✓ Forward surge current: 30A @ 8.3 ms half-sine
- ✓ Lead finish: Solder temperature 260°C for 10s (max)

**Sensitron space equivalent diodes are manufactured and screened to MIL-PRF-19500 flow and guidelines starting from wafer fabrication through assembly and testing using our internal specification.*

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ELECTRICAL CHARACTERISTICS

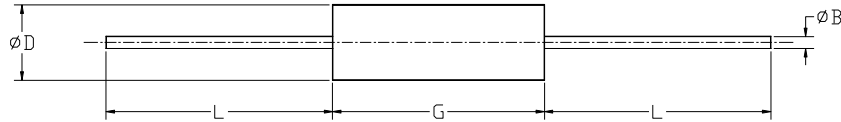
SERIES TYPE		MIN BREAKDOWN VOLTAGE $V_{(BR)} @ I_{(BR)}$		WORKING PEAK REVERSE VOLTAGE VRWM	MAXIMUM REVERSE CURRENT I_{R1}	MAX. CLAMP. VOLTAGE VC @ I_P tp = 1ms	MAX. PEAK PULSE CURRENT I_P	MAX. TEMP. COEFFICIENT $V_{(BR)}$	
		Vdc	mA dc	Vdc	μ Adc	V(pk)	A(pk)	% / °C	
500W	1500W				500W	1500W	500W	1500W	
1N6102A/US	1N6138A/US	6.12	175	5.2	100	500	47.6	142.8	.05
1N6103A/US	1N6139A/US	7.13	175	5.7	50	300	44.6	133.9	.06
1N6104A/US	1N6140A/US	7.79	150	6.2	20	100	41.3	124.0	.06
1N6105A/US	1N6141A/US	8.65	150	6.9	20	100	37.3	111.9	.06
1N6106A/US	1N6142A/US	9.50	125	7.6	20	100	34.5	103.4	.07
1N6107A/US	1N6143A/US	10.45	125	8.4	20	20	32.0	96.2	.07
1N6108A/US	1N6144A/US	11.40	100	9.1	20	20	29.6	88.8	.07
1N6109A/US	1N6145A/US	12.35	100	9.9	20	20	27.5	82.4	.08
1N6110A/US	1N6146A/US	14.25	75	11.4	20	20	23.8	71.4	.08
1N6111A/US	1N6147A/US	15.20	75	12.2	20	20	22.4	67.3	.08
1N6112A/US	1N6148A/US	17.10	65	13.7	1	10	19.0	59.8	.085
1N6113A/US	1N6149A/US	19.00	65	15.2	1	5.0	18.0	54.2	.085
1N6114A/US	1N6150A/US	20.9	50	16.7	1	5.0	16.4	49.2	.085
1N6115A/US	1N6151A/US	22.8	50	18.2	1	5.0	15.0	45.0	.09
1N6116A/US	1N6152A/US	25.7	50	20.6	1	5.0	13.4	40.1	.09
1N6117A/US	1N6153A/US	28.5	40	22.8	1	5.0	12.0	36.0	.09
1N6118A/US	1N6154A/US	31.4	40	25.1	1	5.0	10.9	32.8	.095
1N6119A/US	1N6155A/US	34.2	30	27.4	1	5.0	10.0	30.1	.095
1N6120A/US	1N6156A/US	37.1	30	29.7	1	5.0	9.3	28.0	.095
1N6121A/US	1N6157A/US	40.9	30	32.7	1	5.0	8.5	25.4	.095
1N6122A/US	1N6158A/US	44.7	25	35.8	1	5.0	7.7	23.2	.095
1N6123A/US	1N6159A/US	48.5	25	38.8	1	5.0	7.1	21.4	.095
1N6124A/US	1N6160A/US	53.2	20	42.6	1	5.0	6.5	19.5	.095
1N6125A/US	1N6161A/US	58.9	20	47.1	1	5.0	5.9	17.6	.100
1N6126A/US	1N6162A/US	64.6	20	51.7	1	5.0	5.1	15.4	.100
1N6127A/US	1N6163A/US	71.3	20	56.0	1	5.0	4.8	14.5	.100
1N6128A/US	1N6164A/US	77.9	15	62.2	1	5.0	4.4	13.3	.100
1N6129A/US	1N6165A/US	86.5	15	69.2	1	5.0	4.0	12.0	.100
1N6130A/US	1N6166A/US	95.0	12	76.0	1	5.0	3.6	10.9	.100
1N6131A/US	1N6167A/US	104.5	12	83.6	1	5.0	3.3	9.9	.100
1N6132A/US	1N6168A/US	114.0	10	91.2	1	5.0	3.0	9.1	.100
1N6133A/US	1N6169A/US	123.5	10	98.8	1	5.0	2.8	8.4	.105
1N6134A/US	1N6170A/US	142.5	8.0	114.0	1	5.0	2.4	7.3	.105
1N6135A/US	1N6171A/US	152	8.0	121.6	1	5.0	2.3	6.9	.105
1N6136A/US	1N6172A/US	171	5.0	136.8	1	5.0	2.0	6.1	.110
1N6137A/US	1N6173A/US	190	5.0	152.0	1	5.0	1.8	5.5	.110

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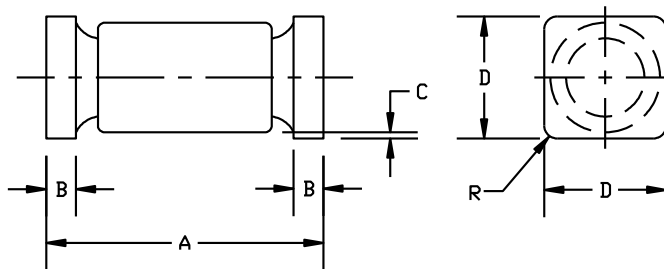
TECHNICAL DATA

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PACKAGE DIMENSIONS: 1N6103/US thru 1N6137A/US



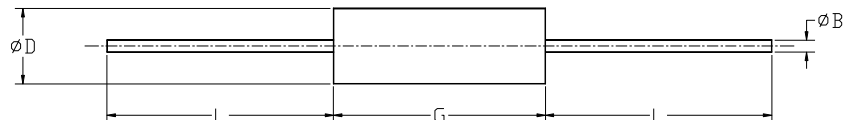
PACKAGE STYLE	DIMENSIONS - INCHES / MILLIMETERS			
	ϕB	ϕD	G	L
AXIAL	.036/.042	.135/.185	.140/.195	1.00/1.30
	.92/1.07	3.43/4.70	3.56/4.95	25.4/33.02



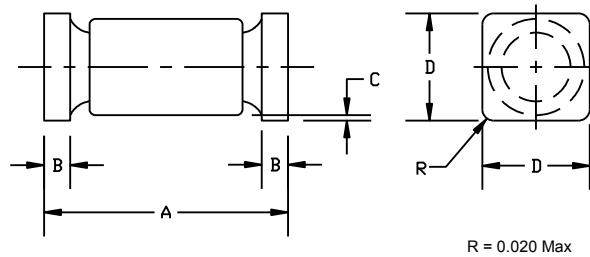
R = 0.020 Max

STYLE	A	B	C	D
MELF	.205/.245	.019/.028	.003MIN	.183/.202
	5.21/6.22	.48/.71	.08MIN	4.65/5.13

PACKAGE DIMENSIONS: 1N6138/US thru 1N6173A/US



PACKAGE STYLE	ϕB	ϕD	G	L
	AXIAL	.026/.033	.085/.140	.140/.185
.66/.84		2.16/3.56	3.56/4.70	25.4/33.02

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STYLE	A	B	C	D
MELF	.200/.225 5.08/5.72	.019/.028 .48/.71	.003MIN .08MIN	.137/.148 3.48/3.76

PART ORDERING INFORMATION

The following part numbers can be purchased in either axial or surface mount devices and screened and tested to the military screening flow. The parts are marked in accordance with the testing performed, example:

Sensitron Screening Level	Part Number- Leaded Package (example for 1N6138)	Part Number- Surface Mount Package (example for 1N6138US)
SJ	SJ6138	SJ6138US
SX	SX6138	SX6138US
SV	SV6138	SV6138US
SS	SS6138	SS6138US

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