DIGITRON SEMICONDUCTORS

1N6402-1N6456A 600W TRANSIENT VOLTAGE SUPPRESSOR UNIDIRECTIONAL

MAXIMUM RATINGS

Parameter	Value
Peak power dissipation @ 25°C	600W
$T_{clamping}$ (volts to B_V min)	Less than 1 X 10^{-12} seconds
Operating and storage temperature range	-55 to +175°C
Forward surge rating @ 1/120 second @ 25°C	100A
Steady state power dissipation: T_L = 75°C	5.0W
Duty cycle	0.05%

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Part number	Reverse stand-off voltage(1)	Breakdown voltage			Maximum reverse leakage @ V_R	Maximum clamping voltage @ I_{PP}	Maximum peak pulse current	Maximum voltage temperature variation of B_V
	V_R	B_V		I_T	I_R	V_C	I_{PP}	
		Min	Max					
	Volts	Volts		mA	µA	Volts	A	mV/°C
1N6402	5.0	6.40	7.30	10	800	10.5	57.1	5.0
1N6402A	5.0	6.40	7.00	10	800	10.0	60.0	5.0
1N6403	6.0	6.67	8.15	10	800	11.4	52.5	5.0
1N6403A	6.0	6.67	7.37	10	800	10.6	56.6	5.0
1N6404	6.5	7.22	8.82	10	500	12.3	48.8	5.0
1N6404A	6.5	7.22	7.98	10	500	11.2	53.5	5.0
1N6405	7.0	7.78	9.51	10	200	13.3	45.1	6.0
1N6405A	7.0	7.78	8.60	10	200	12.0	50.0	6.0
1N6406	7.5	8.33	10.20	1	100	14.3	42.0	7.0
1N6406A	7.5	8.33	9.21	1	100	12.9	46.5	7.0
1N6407	8.0	8.89	10.90	1	50	15.0	40.0	7.0
1N6407A	8.0	8.89	9.83	1	50	13.6	44.1	7.0
1N6408	8.5	9.44	11.50	1	10	15.9	42.8	8.0
1N6408A	8.5	9.44	10.40	1	10	14.4	41.7	8.0
1N6409	9.0	10.00	12.20	1	5	16.9	40.5	9.0
1N6409A	9.0	10.00	11.10	1	5	15.4	39.0	9.0
1N6410	10	11.10	13.60	1	5	18.8	31.9	10
1N6410A	10	11.10	12.30	1	5	17.0	35.3	10
1N6411	11	12.20	14.90	1	5	20.1	29.9	11
1N6411A	11	12.20	13.50	1	5	18.2	33.0	11
1N6412	12	13.30	16.30	1	5	22.0	27.8	12
1N6412A	12	13.30	14.70	1	5	19.9	30.2	12
1N6413	13	14.40	17.60	1	5	23.8	25.2	13
1N6413A	13	14.40	15.90	1	5	21.5	27.9	13
1N6414	14	15.60	19.10	1	5	25.8	23.3	14
1N6414A	14	15.60	17.20	1	5	23.2	25.9	14
1N6415	15	16.70	20.40	1	5	26.9	22.3	16
1N6415A	15	16.70	18.50	1	5	24.4	24.6	16

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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Part number	Reverse stand-off voltage(1)	Breakdown voltage			Maximum reverse leakage @ V_R	Maximum clamping voltage @ I_{PP}	Maximum peak pulse current	Maximum voltage temperature variation of B_V
	V_R	B_V		I_T	I_R	V_C	I_{PP}	
		Min	Max					
	Volts	Volts		mA	µA	Volts	A	mV/°C
1N6416	16	17.80	21.80	1	5	28.8	20.9	19
1N6416A	16	17.80	19.70	1	5	26.0	23.1	17
1N6417	17	18.90	23.10	1	5	30.5	19.7	20
1N6417A	17	18.90	20.90	1	5	27.6	21.8	19
1N6418	18	20.0	24.40	1	5	32.2	18.7	21
1N6418A	18	20.0	22.10	1	5	29.2	20.6	20
1N6419	20	22.20	27.10	1	5	35.8	16.8	25
1N6419A	20	22.20	24.50	1	5	32.4	18.5	23
1N6420	22	24.40	29.80	1	5	39.4	15.3	28
1N6420A	22	24.40	26.90	1	5	35.5	16.9	25
1N6421	24	26.70	32.60	1	5	43.0	14.0	31
1N6421A	24	26.70	29.50	1	5	38.9	15.4	28
1N6422	26	28.90	35.30	1	5	46.6	12.9	31
1N6422A	26	28.90	31.90	1	5	42.1	14.3	30
1N6423	28	31.10	38.00	1	5	50.0	12.0	35
1N6423A	28	31.10	34.40	1	5	45.4	13.2	31
1N6424	30	33.30	40.70	1	5	53.5	11.2	39
1N6424A	30	33.30	36.80	1	5	48.4	12.4	36
1N6425	33	36.70	44.90	1	5	59.0	10.2	45
1N6425A	33	36.7	40.60	1	5	53.3	11.3	41
1N6426	36	40.00	48.90	1	5	64.3	9.4	49
1N6426A	36	40.00	44.20	1	5	58.1	10.4	45
1N6427	40	44.40	54.30	1	5	71.4	8.4	55
1N6427A	40	44.40	49.10	1	5	64.5	9.3	50
1N6428	43	47.80	58.40	1	5	76.7	7.8	60
1N6428A	43	47.80	52.80	1	5	69.4	8.7	54
1N6429	45	50.00	61.10	1	5	80.3	7.5	63
1N6429A	45	50.00	55.30	1	5	72.7	8.3	57
1N6430	48	53.30	65.10	1	5	85.5	7.0	68
1N6430A	48	53.30	58.90	1	5	77.4	7.8	61
1N6431	51	56.70	69.30	1	5	91.1	6.6	72
1N6431A	51	56.70	62.70	1	5	82.4	7.3	65
1N6432	54	60.00	73.30	1	5	96.3	6.3	76
1N6432A	54	60.00	66.30	1	5	87.1	6.9	69
1N6433	58	64.40	78.70	1	5	103.0	5.9	83
1N6433A	58	64.40	71.20	1	5	93.6	6.4	74
1N6434	60	66.70	81.50	1	5	107.0	5.6	86
1N6434A	60	66.70	73.70	1	5	96.8	6.2	77
1N6435	64	71.10	86.90	1	5	114.0	5.3	91

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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Part number	Reverse stand-off voltage[1]	Breakdown voltage			Maximum reverse leakage @ VR	Maximum clamping voltage @ IPP	Maximum peak pulse current	Maximum voltage temperature variation of BV
	V_R	B_V		I_T	I_R	V_O	I_{PP}	
		Min	Max					
	Volts	Volts		mA	µA	Volts	A	mV/°C
1N6435A	64	71.10	78.60	1	5	103.0	5.7	82
1N6436	70	77.80	95.10	1	5	125	4.8	100
1N6436A	70	77.80	86.00	1	5	113	5.3	90
1N6437	75	83.30	102.00	1	5	134	4.5	108
1N6437A	75	83.30	92.10	1	5	121	5.0	97
1N6438	78	86.70	106.00	1	5	139	4.3	112
1N6438A	78	86.70	95.80	1	5	126	4.7	102
1N6439	85	94.40	115.00	1	5	151	4.0	123
1N6439A	85	94.40	104.00	1	5	137	4.4	110
1N6440	90	100.00	122.00	1	5	160	3.8	130
1N6440A	90	100.00	111.00	1	5	146	4.1	118
1N6441	100	111.00	136.00	1	5	179	3.4	145
1N6441A	100	111.00	123.00	1	5	162	3.7	132
1N6442	110	122.00	149.00	1	5	199	3.0	159
1N6442A	110	122.00	135.00	1	5	177	3.4	144
1N6443	120	133.00	163.00	1	5	220	2.7	176
1N6443A	120	133.00	147.00	1	5	196	3.0	157
1N6444	130	144.00	176.00	1	5	241	2.5	190
1N6444A	130	144.00	159.00	1	5	214	2.8	172
1N6445	150	167.00	204.00	1	5	283	2.1	220
1N6445A	150	167.00	185.00	1	5	255	2.4	200
1N6446	160	178.00	218.00	1	5	305	2.0	235
1N6446A	160	178.00	197.00	1	5	273	2.2	213
1N6447	170	189.00	231.00	1	5	328	1.8	254
1N6447A	170	189.00	209.00	1	5	293	2.0	226
1N6448	180	200.00	244.00	5	5	346	1.7	263
1N6448A	180	200.00	221.00	5	5	309	1.9	239
1N6449	200	222.00	271.00	5	5	360	1.5	298
1N6449A	200	222.00	245.00	5	5	322	1.5	270
1N6450	220	245.00	299.00	5	5	401	1.5	329
1N6450A	220	245.00	271.00	5	5	360	1.5	298
1N6451	240	267.00	326.00	5	5	440	1.5	359
1N6451A	240	267.00	295.00	5	5	395	1.5	325
1N6452	260	289.00	353.00	5	5	476	1.5	388
1N6452A	260	289.00	319.00	5	5	430	1.5	378
1N6453	280	311.00	380.00	5	5	524	1.5	418
1N6453A	280	311.00	344.00	5	5	465	1.5	378
1N6454	300	333.00	407.00	5	5	561	1.5	448

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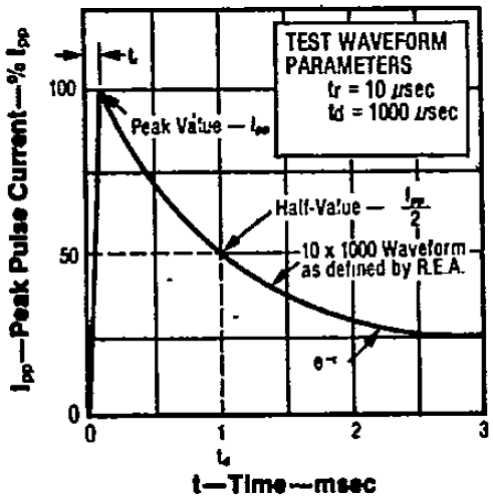
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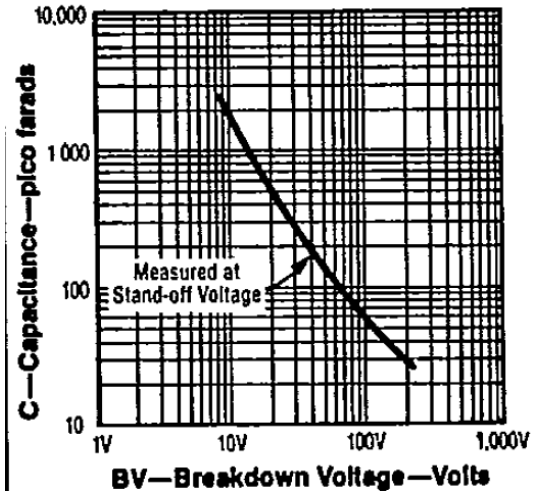
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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

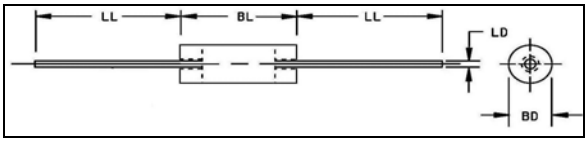
Part number	Reverse stand-off voltage(1)	Breakdown voltage			Maximum reverse leakage @ VR	Maximum clamping voltage @ IPP	Maximum peak pulse current	Maximum voltage temperature variation of BV
	V_R	B_V		I_T	I_R	V_O	I_{PP}	
		Min	Max					
	Volts	Volts		mA	µA	Volts	A	mV/°C
1N6454A	300	333.00	368.00	5	5	508	1.5	405
1N6455	320	355.00	434.00	5	5	608	1.5	477
1N6455A	320	355.00	393.00	5	5	550	1.5	432
1N6456	340	377.00	461.00	5	5	655	1.5	507
1N6456A	340	377.00	417.00	5	5	592	1.5	459





MECHANICAL CHARACTERISTICS

Case	DIGI E
Polarity	Cathode band
Marking	Alpha numeric



	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.165	0.180	4.200	4.570
BL	0.315	0.335	8.000	8.520
LD	0.037	0.043	0.940	1.092
LL	1.000	-	25.400	-

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).
Available as “HR” (high reliability) screened per MIL-PRF-19500, JANTX level. Add “HR” suffix to base part number.

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