DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

1N5629(A)-1N5665(A)

Transient Voltage Suppressor
1500 Watt

FEATURES:

- Available as “HR” (high reliability) screened per MIL-PRF-19500, JANTX level. Add “HR” suffix to base part number
- Available Non-RoHS (standard) or RoHS compliant (add PBF suffix)
- Clamps transients up to 1500 W at 100ps

MAXIMUM RATINGS

Rating	Value	Unit
DC power dissipation **@ $T_L \leq 125°C$, 3/8” from body**	1	Watt
Forward surge current **8.3ms half-sine wave @ $T_A = 25°C$**	200	Amps
Solder temperatures for 10 sec. max.	260	°C
Thermal resistance **Junction to lead @ 0.375” from body** **Junction to ambient @ when mounted on FR4 PC board with 4mm² copper pads**	 50 110	°C/W
Junction and storage temperature range	-65 to 175	°C

ELECTRICAL CHARACTERISTICS

Part number	Breakdown Voltage (V_{BR}) @ I_T		Test Current (I_T)	Rated Standoff Voltage (V_{WM})	Maximum Reverse Leakage Current (I_D @ V_{WM})	Maximum Clamping Reverse Voltage (V_C max @ I_{pp})	Maximum Peak Pulse Current (I_{pp})	Maximum Temperature Coefficient of $V_{(BR)}$ αV_{BR}
	Min	Max						
	Vdc	Vdc	mAdc	V	µAdc	V	A	%/°C
1N5629	6.12	7.48	10	5.50	1000	10.8	139	0.057
1N5629A	6.45	7.14	10	5.80	1000	10.5	143	0.057
1N5630	6.75	8.25	10	6.05	500	11.7	128	0.061
1N5630A	7.13	7.88	10	6.40	500	11.3	132	0.061
1N5631	7.38	9.02	10	6.63	200	12.5	120	0.065
1N5631A	7.79	8.61	10	7.02	200	12.1	124	0.065
1N5632	8.19	10.0	1	7.37	50	13.8	109	0.068
1N5632A	8.65	9.55	1	7.78	50	13.4	112	0.068
1N5633	9.00	11.0	1	8.10	10	15.0	100	0.073
1N5633A	9.5	10.5	1	8.55	10	14.5	103	0.073
1N5634	9.9	12.1	1	8.92	5	16.2	93	0.075
1N5634A	10.5	11.6	1	9.40	5	15.6	96	0.075
1N5635	10.8	13.2	1	9.72	5	17.3	87	0.078
1N5635A	11.4	12.6	1	10.2	5	16.7	90	0.078
1N5636	11.7	14.3	1	10.5	5	19.0	79	0.081
1N5636A	12.4	13.7	1	11.1	5	18.2	82	0.081
1N5637	13.5	16.5	1	12.1	5	22.0	68	0.084
1N5637A	14.3	15.8	1	12.8	5	21.2	71	0.084
1N5638	14.4	17.6	1	12.9	5	23.5	64	0.086

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	Min	Max						
	Vdc	Vdc	mAdc	V	µAdc	V	A	%/°C
1N5638A	15.2	16.8	1	13.6	5	22.5	67	0.086
1N5639	16.2	19.8	1	14.5	5	26.5	56.5	0.088
1N5639A	17.1	18.9	1	15.3	5	25.2	59.5	0.088
1N5640	18.0	22.0	1	16.2	5	29.1	51.5	0.090
1N5640A	19.0	21.0	1	17.1	5	27.7	54	0.090
1N5641	19.8	24.2	1	17.8	5	31.9	47	0.092
1N5641A	20.9	23.1	1	18.8	5	30.6	49	0.092
1N5642	21.6	26.4	1	19.4	5	34.7	43	0.094
1N5642A	22.8	25.2	1	20.5	5	33.2	45	0.094
1N5643	24.3	29.7	1	21.8	5	39.1	38.5	0.096
1N5643A	25.7	28.4	1	23.1	5	37.5	40	0.096
1N5644	27.0	33.0	1	24.3	5	43.5	34.5	0.097
1N5644A	28.5	31.5	1	25.6	5	41.4	36	0.097
1N5645	29.7	36.3	1	26.8	5	47.7	31.5	0.098
1N5645A	31.4	34.7	1	28.2	5	45.7	33	0.098
1N5646	32.4	39.6	1	29.1	5	52.0	29	0.099
1N5646A	34.2	37.8	1	30.8	5	49.9	30	0.099
1N5647	35.1	42.9	1	31.6	5	56.4	26.5	0.100
1N5647A	37.1	41.0	1	33.3	5	53.9	28	0.100
1N5648	38.7	47.3	1	34.8	5	61.9	24	0.101
1N5648A	40.9	45.2	1	36.8	5	59.3	25.3	0.101
1N5649	42.3	51.7	1	38.1	5	67.8	22.2	0.101
1N5649A	44.7	49.4	1	40.2	5	64.8	23.2	0.101
1N5650	45.9	56.1	1	41.3	5	73.5	20.4	0.102
1N5650A	48.5	53.6	1	43.6	5	70.1	21.4	0.102
1N5651	50.4	61.6	1	45.4	5	80.5	18.6	0.103
1N5651A	53.2	58.8	1	47.8	5	77.0	19.5	0.103
1N5652	55.8	68.2	1	50.2	5	89.0	16.9	0.104
1N5652A	58.9	65.1	1	53.0	5	85.0	17.7	0.104
1N5653	61.2	74.8	1	55.1	5	98.0	15.3	0.104
1N5653A	64.6	71.4	1	58.1	5	92.0	16.3	0.104
1N5654	67.5	82.5	1	60.7	5	108	13.9	0.105
1N5654A	71.3	78.8	1	64.1	5	103	14.6	0.105
1N5655	73.8	90.2	1	66.4	5	118	12.7	0.105
1N5655A	77.9	86.1	1	70.1	5	113	13.3	0.105
1N5656	81.9	100.0	1	73.7	5	131	11.4	0.106
1N5656A	86.5	95.5	1	77.8	5	125	12.0	0.106

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	Min	Max						
	Vdc	Vdc	mAdc	V	µAdc	V	A	%/°C
1N5657	90	110	1	81.0	5	144	10.4	0.106
1N5657A	95	105	1	85.5	5	137	11.0	0.106
1N5658	99	121	1	89.2	5	158	9.5	0.107
1N5658A	105	116	1	94.0	5	152	9.9	0.107
1N5659	108	132	1	97.2	5	173	8.7	0.107
1N5659A	114	126	1	102	5	165	9.1	0.107
1N5660	117	143	1	105	5	187	8.0	0.107
1N5660A	124	137	1	111	5	179	8.4	0.107
1N5661	135	165	1	121	5	215	7.0	0.108
1N5661A	143	158	1	128	5	207	7.2	0.108
1N5662	144	176	1	130	5	230	6.5	0.108
1N5662A	152	168	1	136	5	219	6.8	0.108
1N5663	153	187	1	138	5	244	6.2	0.108
1N5663A	162	179	1	145	5	234	6.4	0.108
1N5664	162	198	1	146	5	258	5.8	0.108
1N5664A	171	189	1	154	5	246	6.1	0.108
1N5665	180	220	1	162	5	287	5.2	0.108
1N5665A	190	210	1	171	5	274	5.5	0.108

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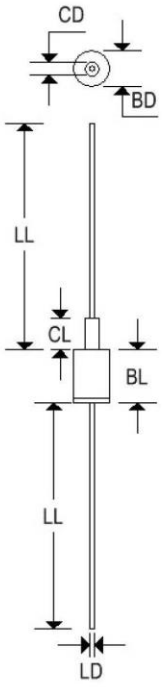
MECHANICAL CHARACTERISTICS

Case	DO-13
Marking	Alpha-numeric
Polarity	Cathode band



	DO-13			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.235	-	5.970
BL	0.315	0.350	8.001	8.890
LD	0.027	0.035	0.686	0.762
LL	1.250	-	31.750	-
CD	-	0.100	-	2.540
CL	-	0.210	-	5.334

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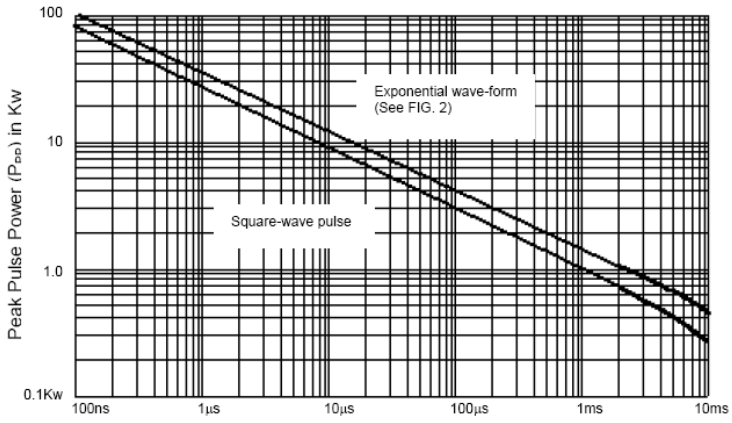

FIG. 1 – Non-repetive peak pulse power rating curve
NOTE: Peak power defined as peak voltage times peak current

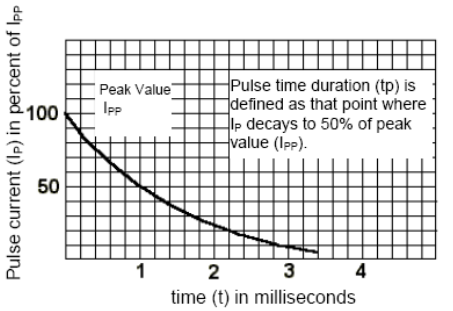

FIG. 2 Pulse wave form for exponential surge

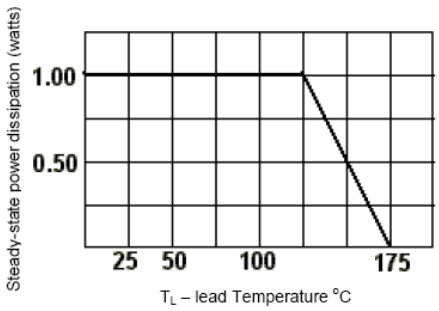

FIG. 3 Steady-state power derating curve

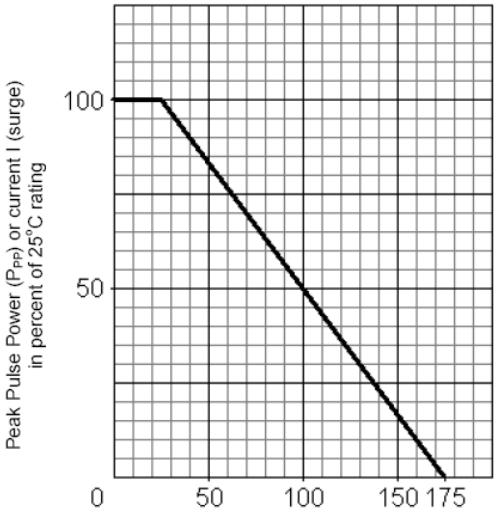

FIG. 4 Derating Curve