

DIGITRON SEMICONDUCTORS

30KP22-30KP400A

30kW TRANSIENT VOLTAGE SUPPRESSOR

- Available in both unidirectional and bidirectional construction (bidirectional "C" or "CA" suffix)
- 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.
- Available in both axial-leaded and radial packages (include "R" prefix for radial packages)

MAXIMUM RATINGS

Peak pulse power dissipation @ 25°C	30,000W @ 10/1000µs
Impulse repetition rate (duty factor)	0.05%
t _{clamping} (0 volts to V _(BR) min)	< 100 ps theoretical for unidirectional and <5 ns for bidirectional
Operating and storage temperature	-65 to +150°C
Thermal resistance	17.5°C/W junction to lead or 77.5°C/W junction to ambient when mounted on FR4 PC board with 4mm ² copper pads and track width 1mm, length 25mm
Steady state power dissipation	7W @ T _L = 27.5°C, or 1.61W @ T _A = 25°C when mounted on FR4 PC board with 4mm ² copper pads and track width 1mm, length 25mm
Forward surge	250A, 8.3 ms half-sine wave
Solder temperatures	260°C for 10s (maximum)

ELECTRICAL CHARACTERISTICS

Part number	Rated standoff voltage V _{WM}	Breakdown voltage V _(BR) @ I _(BR)			Maximum clamping @ I _{PP} 10/1000µs V _C	Maximum reverse leakage @ V _{WM} I _D	Maximum peak pulse current I _{PP}	Maximum V _(BR) temperature coefficient α _{VZ}
		V _(BR)		I _(BR)				
		Volts						
		Volts	Min	Max				
30KP22	22	24.4	29.8	50	41.1	10000	730	27
30KP22A	22	24.4	26.9	50	37.1	10000	808	24
30KP24	24	26.7	32.6	50	45.0	10000	666	30
30KP24A	24	26.7	29.5	50	40.7	10000	738	27
30KP26	26	28.9	35.3	50	48.7	10000	616	32
30KP26A	26	28.9	31.9	50	44.0	10000	682	29
30KP28	28	31.1	38.0	50	52.4	8000	572	35
30KP28A	28	31.1	34.4	50	47.5	8000	632	31
30KP30	30	33.3	40.7	50	56.2	8000	534	37
30KP30A	30	33.3	36.9	50	50.7	8000	592	33
30KP33	33	36.7	44.9	50	64.6	5000	496	42
30KP33A	33	36.7	40.6	50	58.6	5000	548	38
30KP36	36	40.0	48.9	50	68.2	5000	454	46
30KP36A	36	40.0	44.2	50	61.8	5000	502	41
30KP40	40	44.4	54.3	20	75.8	1500	412	51
30KP40A	40	44.4	49.1	20	68.6	1500	456	46
30KP43	43	47.8	58.4	10	79.0	500	380	55
30KP43A	43	47.8	52.8	10	71.0	500	430	50
30KP45	45	50.0	61.1	5	80.7	150	372	57
30KP45A	45	50.0	55.3	5	73.0	150	410	52
30KP48	48	53.3	65.1	5	85.9	150	350	62
30KP48A	48	53.3	58.9	5	77.7	150	386	56
30KP51	51	56.7	69.3	5	91.5	50	328	66
30KP51A	51	56.7	62.7	5	82.8	50	362	60
30KP54	54	60.0	73.3	5	96.8	25	310	70
30KP54A	54	60.0	66.3	5	87.5	25	342	63
30KP58	58	64.4	78.7	5	104.0	15	288	76

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Part number	Rated standoff voltage V_{WM}	Breakdown voltage $V_{(BR)} @ I_{(BR)}$			Maximum clamping @ I_{PP} 10/1000 μ s V_C	Maximum reverse leakage @ V_{WM} I_D	Maximum peak pulse current I_{PP}	Maximum $V_{(BR)}$ temperature coefficient α_{VZ}
		$V_{(BR)}$		$I_{(BR)}$				
	Volts	Volts		mA	Volts	μ Amps	Amps	mV/ $^{\circ}$ C
		Min	Max					
30KP58A	58	64.4	71.2	5	94.0	15	320	68
30KP60	60	66.7	81.5	5	107.0	15	280	78
30KP60A	60	66.7	73.7	5	97.3	15	304	71
30KP64	64	71.1	86.9	5	115.0	10	260	84
30KP64A	64	71.1	78.6	5	104.0	10	288	76
30KP70	70	77.8	95.1	5	126.0	10	238	92
30KP70A	70	77.8	86.0	5	114.0	10	264	83
30KP75	75	83.3	102.0	5	135.0	10	222	100
30KP75A	75	83.3	92.1	5	122.0	10	246	89
30KP78	78	86.7	106.0	5	140.0	10	214	104
30KP78A	78	86.7	95.8	5	126.0	10	238	93
30KP85	85	94.4	115.0	5	152.0	10	198	113
30KP85A	85	94.4	104.0	5	137.0	10	218	102
30KP90	90	100.0	122.0	5	160.0	10	188	120
30KP90A	90	100.0	111.0	5	146.0	10	206	109
30KP100	100	111.0	136.0	5	179.0	10	168	134
30KP100A	100	111.0	123.0	5	162.0	10	186	121
30KP110	110	122.0	149.0	5	196.0	10	154	147
30KP110A	110	122.0	135.0	5	178.0	10	168	133
30KP120	120	133.0	163.0	5	214.0	10	140	161
30KP120A	120	133.0	147.0	5	193.0	10	156	145
30KP130	130	144.0	176.0	5	231.0	10	130	174
30KP130A	130	144.0	159.0	5	209.0	10	142	157
30KP150	150	167.0	204.0	5	268.0	10	112	202
30KP150A	150	167.0	185.0	5	243.0	10	124	183
30KP160	160	178.0	218.0	5	287.0	10	104	216
30KP160A	160	178.0	197.0	5	259.0	10	116	195
30KP170	170	189.0	231.0	5	304.0	10	98	229
30KP170A	170	189.0	209.0	5	275.0	10	110	207
30KP180	180	200.0	244.0	5	321.0	10	94	242
30KP180A	180	200.0	221.0	5	291.0	10	104	219
30KP200	200	222.0	271.0	5	356.0	10	84	269
30KP200A	200	222.0	245.0	5	322.0	10	94	243
30KP220	220	245.0	299.0	5	393.0	10	76	297
30KP220A	220	245.0	271.0	5	356.0	10	84	269
30KP250A	250	278.0	308.0	5	403.0	10	74	306
30KP260A	260	289.0	320.0	5	419.0	10	71	318
30KP280A	280	311.0	345.0	5	451.0	10	66	344
30KP300A	300	333.0	369.0	5	483.0	10	62	368
30KP350A	350	389.0	431.0	5	564.0	10	53	430
30KP400A	400	444.0	492.0	5	644.0	10	46	490

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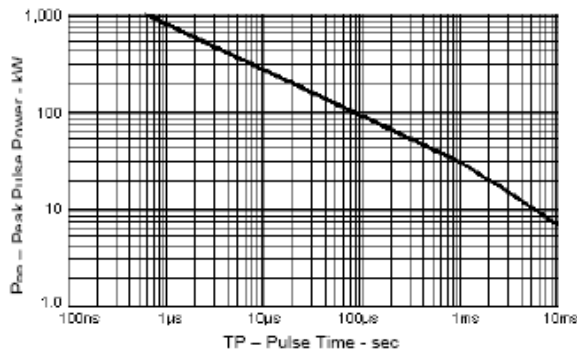


FIGURE 1
Peak Pulse Power vs. Pulse Time

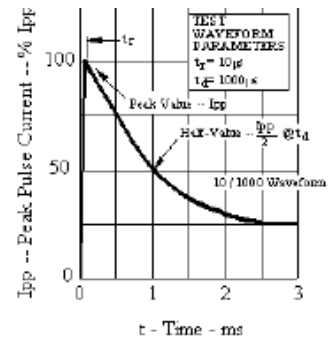


FIGURE 2
Pulse Wave Form

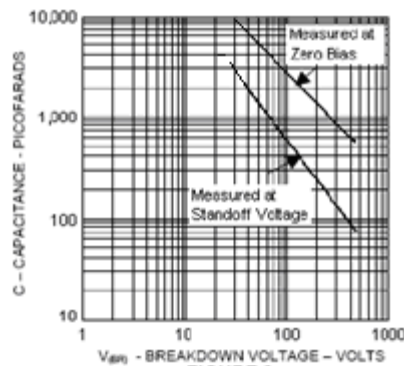


FIGURE 3
Typical Capacitance vs. Breakdown Voltage

V_{BR}	Minimum breakdown voltage: The minimum voltage the device will exhibit at a specified current.
V_{RWM}	Working peak reverse voltage: The maximum peak voltage that can be applied over the operating temperature range.
V_F	Maximum forward voltage: The maximum forward voltage the device will exhibit at a specified current.
I_R	Maximum leakage current: The maximum leakage current that will flow at the specified voltage and temperature.
C	Capacitance: The capacitance of the TVS as defined @ 0 volts at a frequency of 1 MHz and stated in picofarads.

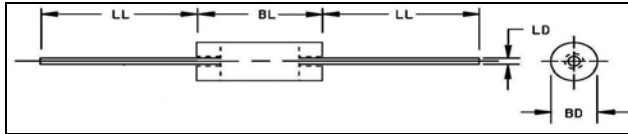
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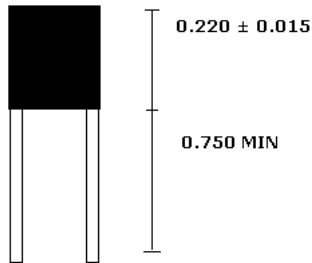
MECHANICAL CHARACTERISTICS

Case	Void free transfer molded thermosetting epoxy
Marking	Body painted, alpha-numeric
Polarity	Cathode band



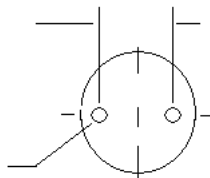
	Dimensions			
	Digi I			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.340	0.360	8.600	9.100
BL	0.340	0.360	8.600	9.100
LD	0.047	0.053	1.194	1.346
LL	1.000	-	25.400	-

Case 5R



0.250 ± 0.015
CENTERS

0.050 ± 0.003
LEAD DIAMETER



0.350 ± 0.010
DIAMETER

DIMENSIONS IN INCHES