

DIGITRON SEMICONDUCTORS

RT100KP33A-RT100KP400CA

100kW TRANSIENT VOLTAGE SUPPRESSOR

MAXIMUM RATINGS

Peak pulse power dissipation @ 25°C	100kW @ 6.49/69µs waveform
Impulse repetition rate	0.005%
t_{clamping} (0 volts to V_{BR} min)	< 100 ps theoretical for unidirectional and <5 ns for bidirectional
Operating and storage temperatures	-65 to +150°C
Thermal resistance	17.5C/W junction to lead, or 77.5C/W junction to ambient when mounted on FR4 PC board with 4mm2 copper pads and track width 1mm, length 25mm
Steady-state power dissipation	7 Watts @ T _L = 27.5°C or 1.61 Watts @ T _A = 25°C when mounted on FR4 PC board with 4mm2 copper pads and track width 1mm, length 25mm
Forward surge	250 Amps 8.3 ms half-sine wave for unidirectional devices only
Solder temperatures	260°C for 10s maximum

ELECTRICAL CHARACTERISTICS

Part number (1)	Rated stand-off voltage	Breakdown voltage			Maximum clamping @ I _{PP} (2)	Maximum reverse leakage @ V _{WM}	Maximum peak pulse current (3) @ 6.4/69µs	Maximum V _(BR) temperature coefficient
	V _{WM}	V _(BR)		I _(BR)	V _C	I _D	I _{PP}	α _{V(BR)}
	Volts	Volts		mA	Volts	µAmps	Amps	mV/°C
		Min	Max					
RTK100KP33A	33	36.7	40.6	50	58.6	5000	1825	38
RTK100KP36A	36	40.0	44.2	50	61.8	5000	1672	41
RTK100KP40A	40	44.4	49.1	20	68.6	1500	1518	46
RTK100KP43A	43	47.8	52.8	10	71.0	500	1432	50
RTK100KP45A	45	50.0	55.3	5	73.0	150	1365	52
RTK100KP48A	48	53.3	58.9	5	77.7	150	1285	56
RTK100KP51A	51	56.7	62.7	5	82.8	50	1205	60
RTK100KP54A	54	60.0	66.3	5	87.5	25	1139	63
RTK100KP58A	58	64.4	71.2	5	94.0	15	1066	68
RTK100KP60A	60	66.7	73.7	5	97.3	15	1012	71
RTK100KP64A	64	71.1	78.6	5	104	10	959	76
RTK100KP70A	70	77.8	86.0	5	114	10	879	83
RTK100KP75A	75	83.3	92.1	5	122	10	819	89
RTK100KP78A	78	86.7	95.8	5	126	10	793	93
RTK100KP85A	85	94.4	104	5	137	10	726	102
RTK100KP90A	90	100	111	5	146	10	686	109
RTK100KP100A	100	111	123	5	162	10	619	121
RTK100KP110A	110	122	135	5	178	10	559	133
RTK100KP120A	120	133	147	5	193	10	519	145
RTK100KP130A	130	144	159	5	209	10	473	157
RTK100KP150A	150	167	185	5	243	10	413	183
RTK100KP160A	160	178	197	5	259	10	386	195
RTK100KP170A	170	189	209	5	275	10	366	207
RTK100KP180A	180	200	221	5	291	10	346	219
RTK100KP200A	200	222	245	5	322	10	313	243
RTK100KP220A	220	245	271	5	356	10	280	269
RTK100KP250A	250	278	308	5	403	10	246	306
RTK100KP260A	260	289	320	5	419	10	236	318
RTK100KP280A	280	311	345	5	451	10	220	344
RTK100KP300A	300	333	369	5	483	10	206	368

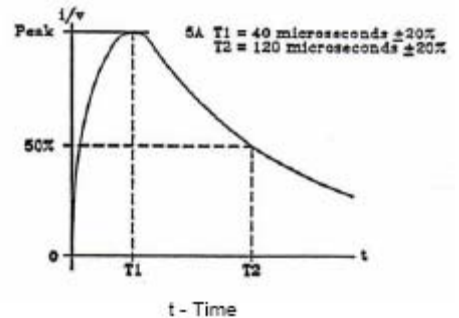
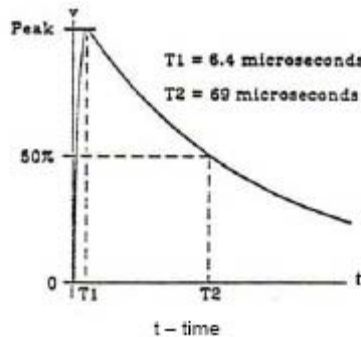
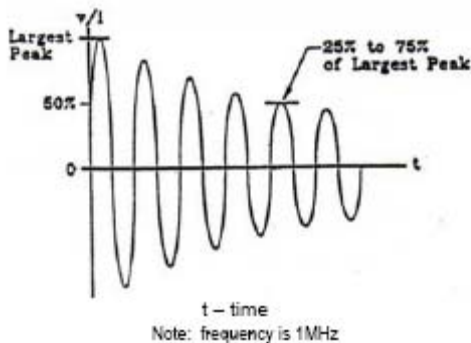
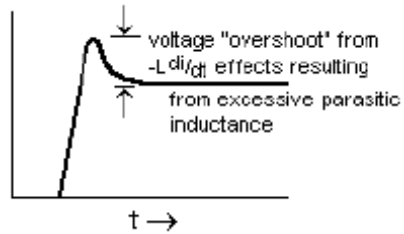
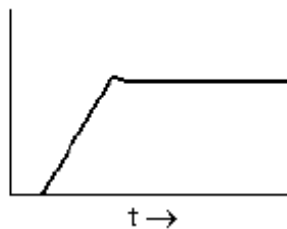
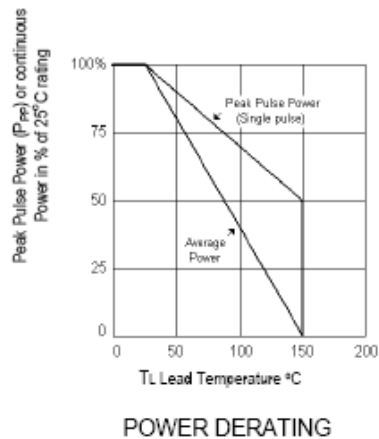
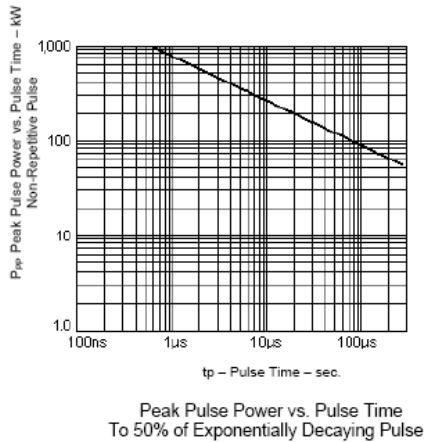
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ELECTRICAL CHARACTERISTICS

Part number (1)	Rated stand-off voltage	Breakdown voltage		Maximum clamping @ $I_{PP}^{(2)}$	Maximum reverse leakage @ V_{WM}	Maximum peak pulse current ⁽³⁾ @ 6.4/69 μ s	Maximum $V_{(BR)}$ temperature coefficient	
	V_{WM}	$V_{(BR)}$		V_C	I_D	I_{PP}	$\alpha_{V(BR)}$	
	Volts	Volts		mA	Volts	μ Amps	Amps	mV/ $^{\circ}$ C
		Min	Max					
RTK100KP350A	350	389	431	5	564	10	176	430
RTK100KP400A	400	444	492	5	644	10	153	490

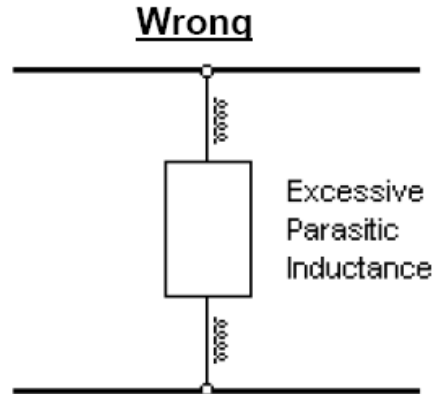
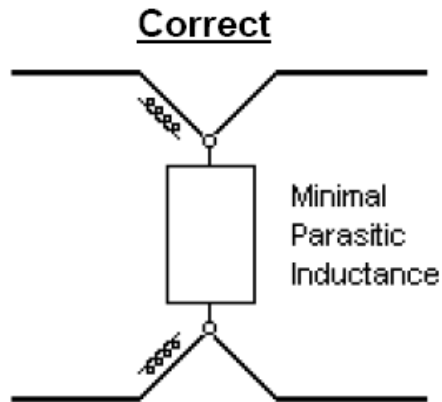
1. For bidirectional construction, indicate a CA suffix (instead of A) after the part number.
2. Clamping voltage does not include any variable parasitic lead inductance effects observed during the 6.4 μ s rise time due to lead length.
3. The maximum peak pulse current (I_{PP}) shown represents the performance capabilities by design.



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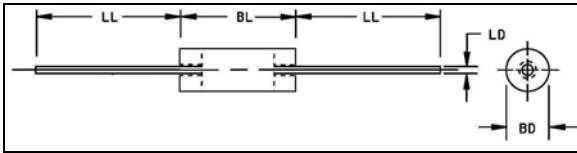
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MECHANICAL CHARACTERISTICS

Case	Void free transfer molded thermosetting epoxy
Marking	Body-painted, alpha-numeric
Polarity	Cathode band (no band required for bidirectional)



	Dimensions			
	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	-

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.