

15KPA17-15KPA280A

15000W TRANSIENT VOLTAGE SUPPRESSOR

FEATURES

- Axial and radial available as “HR” (high reliability) screened per MIL-PRF-19500, JANTX level. Add “HR” suffix to base part number
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding “-PBF” suffix.
- Available in both axial leaded and radial packages (“R” prefix for radial packages)
- Selections for 170 to 280 volts standoff voltage
- Suppresses transients up to 15000 watts @ 10/10000µs and 100000 watts @ 8/20µs
- Fast response

MAXIMUM RATINGS

Rating	Value
Peak Pulse Power Dissipation @ 25°C	15000 watts at 10/1000µs
Impulse Repetition Rate (Duty factor)	0.05%
t _{clamping} (0 volts to V _(BR) min):	< 100ps theoretical for unidirectional and < 5 ns for bidirectional
Operating and Storage Temperature:	-65 to +150°C
Thermal Resistance:	20°C/W junction to lead or 80°C/W junction to ambient when mounted on FR4 PC board with 4mm ² copper pads and track width 1 mm, length 25 mm
Steady-State Power dissipation:	6 watts at T _L = 30°C or 1.56 watts at T _A = 25°C when mounted on FR4 PC board described for thermal resistance
Forward Surge Voltage:	200A, 8.3 ms half-sine wave
Solder Temperatures:	260°C for 10 s (maximum)

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Part Number	Reverse Stand-Off Voltage V _{WM} ⁽¹⁾	Breakdown Voltage V _(BR)		Maximum Clamping Voltage V _c @ I _{PP}	Maximum Standby Current I _D @ V _{WM}	Maximum Peak Pulse Current I _{PP}	Maximum Temperature Coefficient of V _(BR) α _{V(BR)}
		V _(BR) @	I _(BR)				
		Volts	mA				
15KPA17	17	18.9	50	32.3	5000	464	19
15KPA17A	17	18.9	50	29.3	5000	512	17
15KPA18	18	20.0	50	34.2	5000	439	20
15KPA18A	18	20.0	50	30.9	5000	485	18
15KPA20	20	22.2	20	37.9	1500	396	24
15KPA20A	20	22.2	20	34.3	1500	437	21
15KPA22	22	24.4	10	41.1	500	365	27
15KPA22A	22	24.4	10	37.1	500	404	24
15KPA24	24	26.7	5	45.0	150	333	30
15KPA24A	24	26.7	5	40.7	150	369	27
15KPA26	26	28.9	5	48.7	50	308	32
15KPA26A	26	28.9	5	44.0	50	341	29
15KPA28	28	31.1	5	52.4	25	286	35
15KPA28A	28	31.1	5	47.5	25	316	31
15KPA30	30	33.3	5	56.2	15	267	27
15KPA30A	30	33.3	5	50.7	15	296	34
15KPA33	33	36.7	5	66.0	10	227	46

15KPA17-15KPA280A

15000W TRANSIENT VOLTAGE SUPPRESSOR

Part Number	Reverse Stand-Off Voltage $V_{WM}^{(1)}$	Breakdown Voltage $V_{(BR)}$		Maximum Clamping Voltage $V_C @ I_{PP}$	Maximum Standby Current $I_D @ V_{WM}$	Maximum Peak Pulse Current I_{PP}	Maximum Temperature Coefficient of $V_{(BR)}$ $\alpha_{V(BR)}$
		$V_{(BR)}$ @	$I_{(BR)}$				
	Volts	Volts	mA	Volts	μA	A	mV/°C
15KPA33A	33	36.7	5	54.8	10	274	38
15KPA36	36	40.0	5	66.0	10	227	46
15KPA36A	36	40.0	5	59.7	10	251	41
15KPA40	40	44.4	5	72.8	10	206	51
15KPA40A	40	44.4	5	65.8	10	228	46
15KPA43	43	47.8	5	77.1	10	195	55
15KPA43A	43	47.8	5	69.7	10	215	50
15KPA45	45	50.0	5	80.7	10	186	57
15KPA45A	45	50.0	5	73.0	10	205	52
15KPA48	48	53.3	5	85.9	10	175	62
15KPA48A	48	53.3	5	77.7	10	193	56
15KPA51	51	56.7	5	91.5	10	164	66
15KPA51A	51	56.7	5	82.8	10	181	60
15KPA54	54	60.0	5	96.8	10	155	70
15KPA54A	54	60.0	5	87.5	10	171	63
15KPA58	58	64.4	5	104.0	10	144	76
15KPA58A	58	64.4	5	94.0	10	160	68
15KPA60	60	66.7	5	107.0	10	140	78
15KPA60A	60	66.7	5	97.3	10	154	71
15KPA64	64	71.1	5	115	10	130	84
15KPA64A	64	71.1	5	104	10	144	76
15KPA70	70	77.8	5	126	10	119	92
15KPA70A	70	77.8	5	114	10	132	83
15KPA75	75	83.3	5	135	10	111	100
15KPA75A	75	83.3	5	122	10	123	89
15KPA78	78	86.7	5	140	10	107	104
15KPA78A	78	86.7	5	126	10	119	93
15KPA85	85	94.4	5	152	10	99	113
15KPA85A	85	94.4	5	137	10	109	102
15KPA90	90	100	5	160	10	94	120
15KPA90A	90	100	5	146	10	103	109
15KPA100	100	111	5	179	10	84	134
15KPA100A	100	111	5	162	10	93	121
15KPA110	110	122	5	196	10	77	147

15KPA17-15KPA280A

15000W TRANSIENT VOLTAGE SUPPRESSOR

Part Number	Reverse Stand-Off Voltage $V_{WM}^{(1)}$	Breakdown Voltage $V_{(BR)}$		Maximum Clamping Voltage $V_C @ I_{PP}$	Maximum Standby Current $I_D @ V_{WM}$	Maximum Peak Pulse Current I_{PP}	Maximum Temperature Coefficient of $V_{(BR)}$ $\alpha_{V(BR)}$
		$V_{(BR)}$ @	$I_{(BR)}$				
	Volts	Volts	mA	Volts	μA	A	mV/°C
15KPA110A	110	122	5	178	10	84	133
15KPA120	120	133	5	214	10	70	161
15KPA120A	120	133	5	193	10	78	145
15KPA130	130	144	5	231	10	65	174
15KPA130A	130	144	5	209	10	72	157
15KPA150	150	167	5	268	10	56	202
15KPA150A	150	167	5	243	10	62	183
15KPA160	160	178	5	287	10	52	216
15KPA160A	160	178	5	259	10	58	195
15KPA170	170	189	5	304	10	49	229
15KPA170A	170	189	5	275	10	55	207
15KPA180	180	200	5	321	10	47	242
15KPA180A	180	200	5	291	10	52	219
15KPA200	200	222	5	356	10	42	269
15KPA200A	200	222	5	322	10	47	243
15KPA220	220	245	5	393	10	38	297
15KPA220A	220	245	5	356	10	42	269
15KPA240	240	267	5	428	10	35	324
15KPA240A	240	267	5	38/8	10	39	293
15KPA260	260	289	5	464	10	32	352
15KPA260A	260	289	5	419	10	36	317
15KPA280	280	311	5	500	10	30	378
15KPA280A	280	311	5	452	10	33	342

Note 1: Transient voltage suppressors are normally selected with reverse "Stand-Off Voltage" V_{WM} which should be equal or greater than the dc or continuous peak operating voltage level.

Note 2: For bidirectional construction, indicate C or CA suffix after the part number.

SYMBOLS AND DEFINITIONS

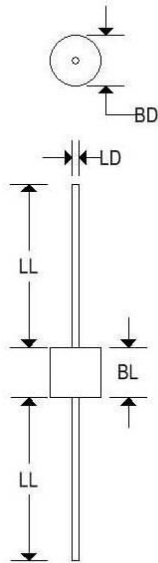
Symbol	Definition	Symbol	Definition	Symbol	Definition
V_{WM}	Working peak (stand-off voltage)	I_{PP}	Peak pulse current	I_D	Standby current
P_{PP}	Peak pulse power	V_C	Clamping voltage		
V_{BR}	Breakdown voltage	$I_{(BR)}$	Breakdown current for $V_{(BR)}$		

15KPA17-15KPA280A

15000W TRANSIENT VOLTAGE SUPPRESSOR

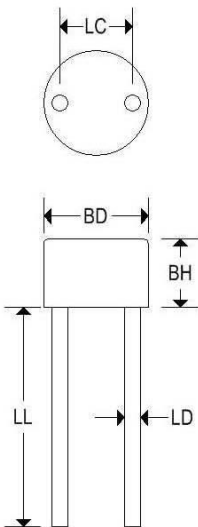
MECHANICAL CHARACTERISTICS

Case	Digi I
Marking	Body-painted, alpha numeric
Polarity	Cathode band. Bidirectional not marked for polarity.



	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
Marking	Body-painted, alpha numeric
Polarity	Cathode band. Bidirectional not marked for polarity.



	Case 5R			
	Inches		Millimeters	
	Min	Max	Min	Max
BH	0.205	0.235	5.207	5.969
BD	0.340	0.360	8.636	9.144
LD	0.047	0.053	1.194	1.346
LL	0.750	-	19.050	-
LC	0.235	0.265	5.969	6.731

15KPA17-15KPA280A

15000W TRANSIENT VOLTAGE SUPPRESSOR

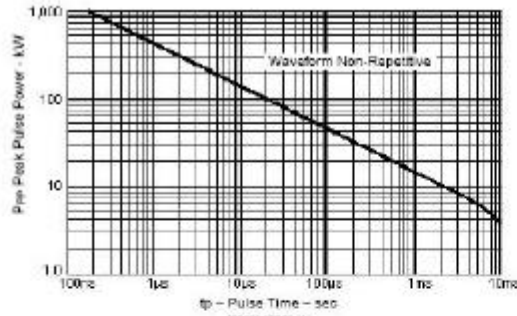
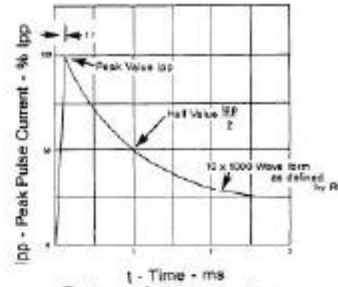


FIGURE 1
Peak Pulse Power vs. Pulse Time to 50% of
Exponentially Decaying Pulse



Test waveform parameters:
 $t_r=10 \mu s$, $t_p=1000 \mu s$

FIGURE 2
Pulse Waveform

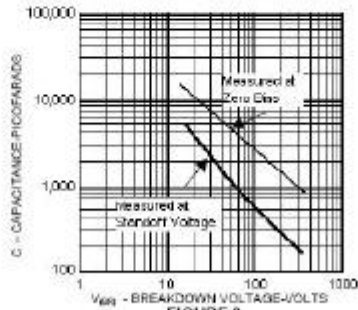


FIGURE 3
Typical Capacitance vs. Breakdown Voltage