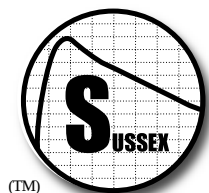




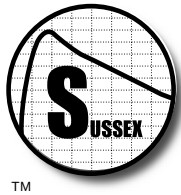
TM

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Transient Suppressor
Devices



(TM)

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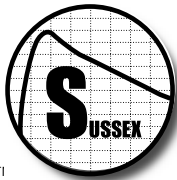
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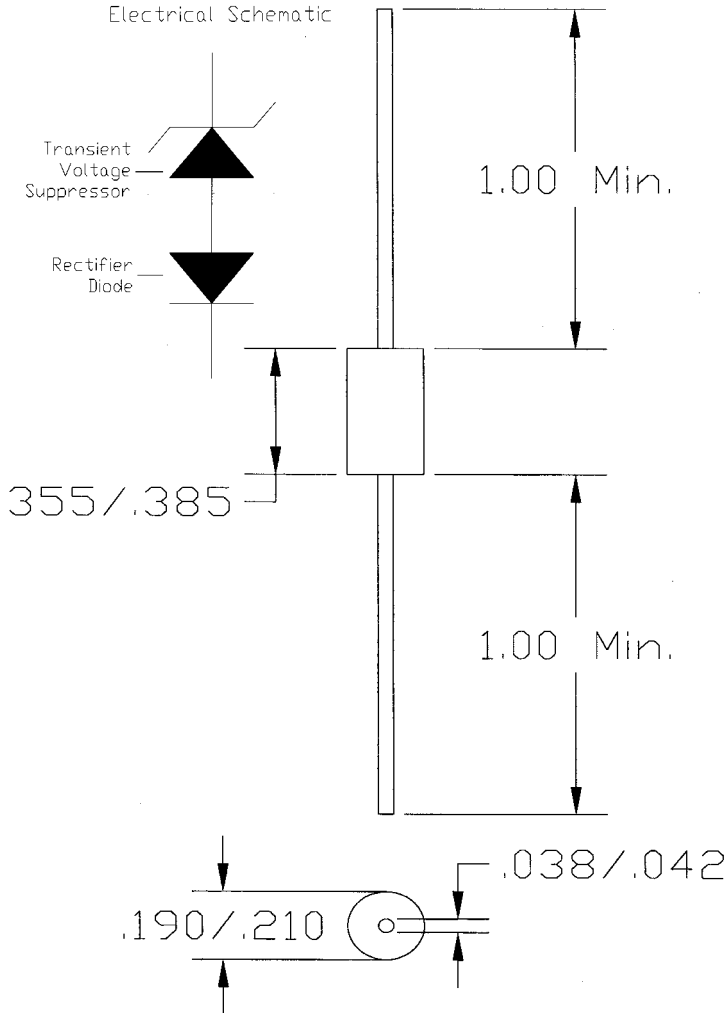


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**LCE6.5 TO LCE170A 1500 WATT
TRANSIENT SUPPRESSORS**

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Electrical Schematic



LCE SERIES TRANSIENT SUPPRESSORS

VOLTAGES - 6.5 TO 170 VOLTS

1500 WATT MAXIMUM POWER DISSIPATION

LCE SERIES DEVICE SPECIFICATIONS

- ◆ Built Using Sussex Glass Passivated Dies
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Operating Temperature: -65 to 175°C
- ◆ Storage Temperature: -65 to 175°C
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band
- ◆ Solvent Resistant Marking
- ◆ Silver Plated Leads, Solderable Per MIL-STD-750
- ◆ Sussex 1500 Watt Transient Suppressor Die In Series With a Rectifier For Low Capacitance Transient Protection

All Dimensions In Inches

CUSTOM ORDERING SPECIFIER

DIE SPECIFICATIONS

LCE

DEVICE PART
NUMBER

STANDOFF
VOLTAGE

- ◆ BLANK INDICATES UNIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ A INDICATES UNIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}



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**LCE6.5 TO LCE170A 1500 WATT
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SPECIFICATIONS CONTINUED**

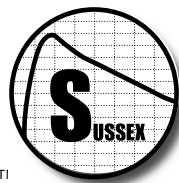
TABLE 5A - LCE SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

INDUSTRY STANDARD PART NUMBER	STANDOFF VOLTAGE (V _{SO}) Volts	MAX.	REVERSE		TEST CURRENT (I _T) mA	MAX. CLAMPING		Rectifier Voltage (V _{dc}) Volts	MAX. TEMP.	MAX	
		REVERSE LEAKAGE (I _R)@V _{SO} μA	BREAKDOWN VOLTAGE (V _{BR}) @ I _T			VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 2)	COEFFICIENT OF V _{BR} (%/°C)		CAPACITANCE @ 0 VOLTS Pf		
			MIN.	MAX.						V _{CL}	I _{PP}
LCE6.5	6.5	1000	7.22	8.82	10	12.3	100	600	0.057	110	
LCE6.5A	6.5	1000	7.22	7.98	10	11.2	100	600	0.057	110	
LCE7.0	7	500	7.78	9.51	10	13.3	100	600	0.061	110	
LCE7.0A	7	500	7.78	8.6	10	12	100	600	0.061	110	
LCE7.5	7.5	250	8.33	10.2	10	14.3	100	600	0.065	110	
LCE7.5A	7.5	250	8.33	9.21	10	12.9	100	600	0.065	110	
LCE8.0	8	100	8.89	10.9	1	15	100	600	0.068	110	
LCE8.0A	8	100	8.89	9.83	1	13.6	100	600	0.068	110	
LCE8.5	8.5	50	9.44	11.5	1	15.9	94	600	0.073	110	
LCE8.5A	8.5	50	9.44	10.4	1	14.4	100	600	0.073	110	
LCE9.0	9	10	10	12.2	1	16.9	89	600	0.075	110	
LCE9.0A	9	10	10	11.1	1	15.4	97	600	0.075	110	
LCE10	10	5	11.1	13.6	1	18.8	80	600	0.078	110	
LCE10A	10	5	11.1	12.3	1	17	88	600	0.078	110	
LCE11	11	5	12.2	14.9	1	20.1	74	600	0.061	110	
LCE11A	11	5	12.2	13.5	1	18.2	82	600	0.081	110	
LCE12	12	5	13.3	16.3	1	22	68	600	0.084	110	
LCE12A	12	5	13.3	14.7	1	19.9	75	600	0.084	110	
LCE13	13	5	14.4	17.6	1	23.8	63	600	0.086	110	
LCE13A	13	5	14.4	15.9	1	21.5	70	600	0.086	110	
LCE14	14	5	15.6	19.1	1	25.8	58	600	0.088	110	
LCE14A	14	5	15.6	17.2	1	23.2	65	600	0.088	110	
LCE15	15	5	16.7	20.4	1	26.9	56	600	0.090	110	
LCE15A	15	5	16.7	18.5	1	24.4	61	600	0.090	110	
LCE16	16	5	17.8	21.8	1	28.8	52	600	0.092	110	
LCE16A	16	5	17.8	19.7	1	26	57	600	0.092	110	
LCE17	17	5	18.9	23.1	1	30.5	49	600	0.091	110	
LCE17A	17	5	18.9	20.9	1	27.6	54	600	0.094	110	
LCE18	18	5	20	24.4	1	32.2	46	600	0.096	110	
LCE18A	18	5	20	22.1	1	29.2	51	600	0.096	110	
LCE20	20	5	22.2	27.1	1	35.8	42	600	0.097	110	
LCE20A	20	5	22.2	24.5	1	32.4	46	600	0.097	110	
LCE22	22	5	24.4	29.8	1	39.4	38	600	0.098	110	
LCE22A	22	5	24.4	26.9	1	35.5	42	600	0.098	110	
LCE24	24	5	26.7	32.6	1	43	35	600	0.099	110	
LCE24A	24	5	26.7	29.5	1	38.9	39	600	0.099	110	
LCE26	26	5	28.9	35.3	1	46.6	32	600	0.100	110	
LCE26A	26	5	28.9	31.9	1	42.1	36	600	0.100	110	
LCE28	28	5	31.1	38	1	50.1	30	600	0.101	110	
LCE28A	28	5	31.1	34.4	1	45.5	33	600	0.101	110	
LCE30	30	5	33.3	40.7	1	53.5	28	600	0.101	110	
LCE30A	30	5	33.3	36.8	1	48.4	31	600	0.101	110	
LCE33	33	5	36.7	44.9	1	59	25.4	600	0.102	110	

THIS TABLE CONTINUES

NOTES

- NOTE 1:** ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
- NOTE 2:** ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
- ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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**LCE6.5 TO LCE170A 1500 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

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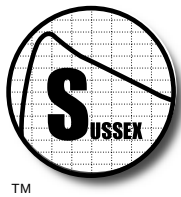
TABLE 5A - LCE SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

TABLE 5A - LCE SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)										
INDUSTRY STANDARD PART NUMBER	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@V _{SO} μA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 2)		Rectifier Voltage (V _{dc}) Volts	MAX. TEMP. COEFFICIENT OF V _{BR} (%/°C)	MAX CAPACITANCE @ 0 VOLTS Pf
			MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps			
LCE33A	33	5	36.7	40.6	1	53.3	28.1	600	0.102	110
LCE36	36	5	40	48.9	1	64.3	23.3	600	0.103	110
LCE36A	36	5	40	44.2	1	58.1	25.8	600	0.103	110
LCE40	40	5	44.4	54.3	1	71.4	21	600	0.104	110
LCE40A	40	5	44.4	49.1	1	64.5	23.3	600	0.104	110
LCE43	43	5	47.8	58.4	1	76.7	19.5	600	0.104	110
LCE43A	43	5	48.8	52.8	1	69.4	21.6	600	0.104	110
LCE45	45	5	50	61.1	1	80.3	18.7	600	0.105	110
LCE45A	45	5	50	55.3	1	72.7	20.6	600	0.105	110
LCE48	48	5	53	65.1	1	85.5	17.5	600	0.105	110
LCE48A	48	5	53	58.9	1	77.4	19.4	600	0.105	110
LCE51	51	5	56.7	69.3	1	91.1	16.5	600	0.106	110
LCE51A	51	5	56.7	62.7	1	82.4	18.2	600	0.106	110
LCE54	54	5	60	73.3	1	96.3	15.6	600	0.106	110
LCE54A	54	5	60	66.3	1	87.1	17.2	600	0.106	110
LCE58	58	5	64.4	78.7	1	103	14.6	600	0.107	110
LCE58A	58	5	64.4	71.2	1	93.6	16	600	0.107	110
LCE60	60	5	66.7	81.5	1	107	14	600	0.107	110
LCE60A	60	5	66.7	73.7	1	96.8	15.5	600	0.107	110
LCE64	64	5	71.1	86.9	1	114	13.2	600	0.107	110
LCE64A	64	5	71.1	78.6	1	103	14.6	600	0.107	110
LCE70	70	5	77.8	95.1	1	125	12	600	0.108	110
LCE70A	70	5	77.8	86	1	113	13.3	600	0.108	110
LCE75	75	5	83.3	102	1	134	11.2	600	0.108	110
LCE75A	75	5	83.3	92.1	1	121	12.4	600	0.108	110
LCE80	80	5	88.7	108	1	142	10.6	600	0.108	110
LCE80A	80	5	88.7	98	1	129	11.6	600	0.108	110
LCE90	90	5	100	122	1	160	9.4	600	0.108	110
LCE90A	90	5	100	111	1	146	10.3	600	0.108	110
LCE100	100	5	111	136	1	179	8.4	600	0.108	110
LCE100A	100	5	111	123	1	162	9.3	600	0.108	110
LCE110	110	5	122	149	1	196	7.7	600	0.108	110
LCE110A	110	5	122	135	1	178	8.4	600	0.108	110
LCE120	120	5	133	163	1	214	7	600	0.110	110
LCE120A	120	5	133	147	1	193	7.8	600	0.110	110
LCE130	130	5	144	176	1	231	6.5	600	0.110	110
LCE130A	130	5	144	159	1	209	7.2	600	0.110	110
LCE150	150	5	167	204	1	268	5.6	600	0.110	110
LCE150A	150	5	167	185	1	243	6.2	600	0.110	110
LCE160	160	5	178	218	1	287	5.2	600	0.110	110
LCE160A	160	5	178	197	1	259	5.8	600	0.110	110
LCE170	170	5	189	231	1	304	4.9	600	0.110	110
LCE170A	170	5	189	209	1	275	5.4	600	0.110	110

HIGHER VOLTAGES AVAILABLE. CONTACT FACTORY

NOTES

- NOTE 1:** ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
NOTE 2: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
 ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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**LCE6.5 TO LCE170A 1500 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

FIGURE 1A - TYPICAL JUNCTION
CAPACITANCE

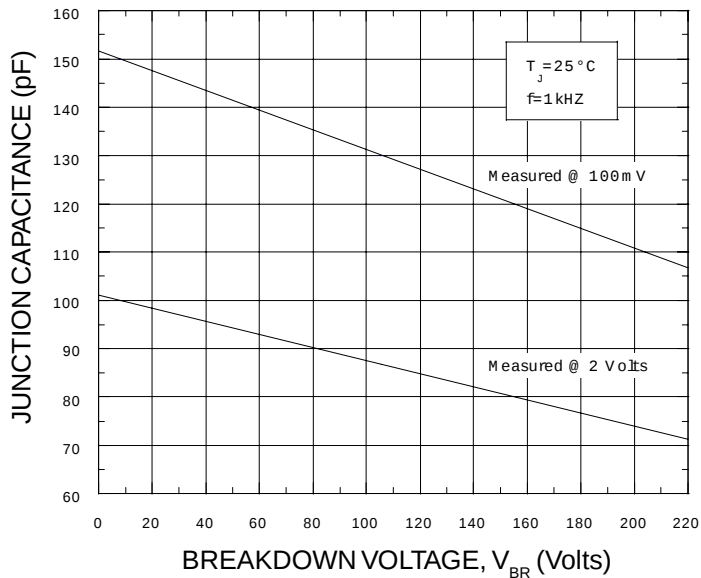


FIGURE 2A - PULSE WAVEFORM

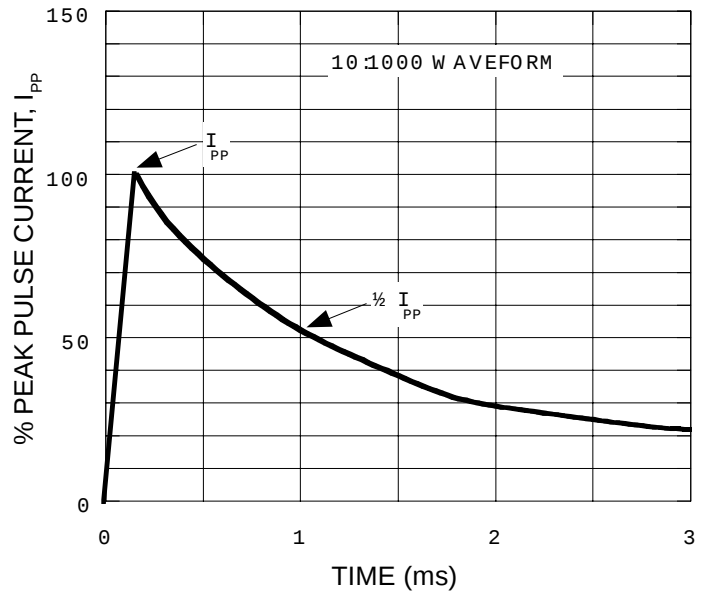
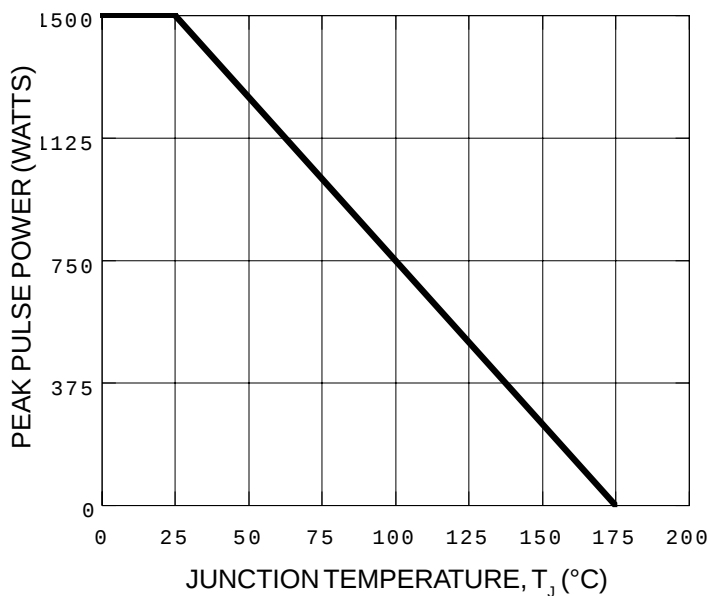
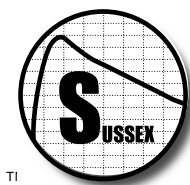


FIGURE 3A - PULSE DERATING CURVE



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**ULC6 SERIES
ULTRA-LOW CAPACITANCE
600 WATT TRANSIENT
SUPPRESSOR SPECIFICATIONS**

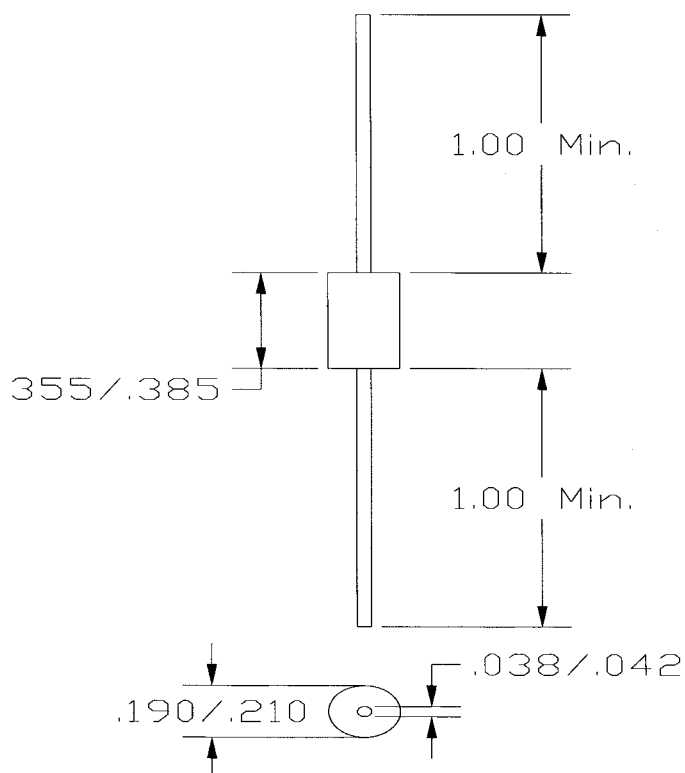
◆ **ULC6 SERIES TRANSIENT SUPPRESSORS**

◆ **VOLTAGES - 6.8+**

◆ **600 WATT MAXIMUM POWER DISSIPATION**

**ULC SERIES
ULTRA LOW CAPACITANCE DEVICE
SPECIFICATIONS**

- ◆ Built With Sussex Glass Passivated Dies
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Polarity Indicated By Solvent Resistant Marking
- ◆ Operating Temperature: -55 to 175°C
- ◆ Storage Temperature: -55 to 175°C
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band
- ◆ Silver Plated Leads, Solderable Per MIL-STD-750



All Dimensions In Inches

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CUSTOM ORDERING SPECIFIER

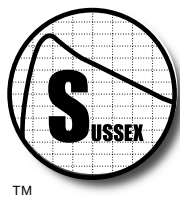
DIE SPECIFICATIONS

ULC6-

DEVICE PART
NUMBER

STANDOFF
VOLTAGE

- ◆ BLANK INDICATES UNIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ A INDICATES UNIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}



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ULC6 SERIES ULTRA-LOW CAPACITANCE 600 WATT TRANSIENT SUPPRESSOR SPECIFICATIONS

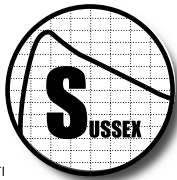
TABLE 5A - LCE SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

INDUSTRY STANDARD PART NUMBER	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@ V _{SO} μA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 2)		MAX CAPACITANCE @ 0 VOLTS Pf
			MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
ULC6-6.8	6.8	500	7.2	8.8	10	12.3	60.00	35
ULC6-7	7	500	7.78	9.51	10	13.3	45.11	35
ULC6-7A	7	500	7.78	8.6	10	12	50.00	35
ULC6-7.5	7.5	250	8.33	10.2	10	14.3	41.96	35
ULC6-7.5A	7.5	250	8.33	9.21	10	12.9	46.51	35
ULC6-8	8	100	8.89	10.9	1	15	40.00	35
ULC6-8A	8	100	8.89	9.83	1	13.6	44.12	35
ULC6-8.5	8.5	50	9.44	11.5	1	15.9	37.74	35
ULC6-8.5A	8.5	50	9.44	10.4	1	14.4	41.67	35
ULC6-9	9	10	10	12.2	1	16.9	35.50	35
ULC6-9A	9	10	10	11.1	1	15.4	38.96	35
ULC6-10	10	5	11.1	13.6	1	18.8	31.91	35
ULC6-10A	10	5	11.1	12.3	1	17	35.29	35
ULC6-11	11	5	12.2	14.9	1	20.1	29.85	35
ULC6-11A	11	5	12.2	13.5	1	18.2	32.97	35
ULC6-12	12	5	13.3	16.3	1	22	27.27	35
ULC6-12A	12	5	13.3	14.7	1	19.9	30.15	35
ULC6-13	13	5	14.4	17.6	1	23.8	25.21	35
ULC6-13A	13	5	14.4	15.9	1	21.5	27.91	35
ULC6-14	14	5	15.6	19.1	1	25.8	23.26	35
ULC6-14A	14	5	15.6	17.2	1	23.2	25.86	35
ULC6-15	15	5	16.7	20.4	1	26.9	22.30	35
ULC6-15A	15	5	16.7	18.5	1	24.4	24.59	35
ULC6-16	16	5	17.8	21.8	1	28.8	20.83	35
ULC6-16A	16	5	17.8	19.7	1	26	23.08	35
ULC6-17	17	5	18.9	23.1	1	30.5	19.67	35
ULC6-17A	17	5	18.9	20.9	1	27.6	21.74	35
ULC6-18	18	5	20	24.4	1	32.2	18.63	35
ULC6-18A	18	5	20	22.1	1	29.2	20.55	35
ULC6-20	20	5	22.2	27.1	1	35.8	16.76	35
ULC6-20A	20	5	22.2	24.5	1	32.4	18.52	35
ULC6-22	22	5	24.4	29.8	1	39.4	15.23	35
ULC6-22A	22	5	24.4	26.9	1	35.5	16.90	35
ULC6-24	24	5	26.7	32.6	1	43	13.95	35
ULC6-24A	24	5	26.7	29.5	1	38.9	15.42	35
ULC6-26	26	5	28.9	35.3	1	46.6	12.88	35
ULC6-26A	26	5	28.9	31.9	1	42.1	14.25	35
ULC6-28	28	5	31.1	38	1	50.1	11.98	35
ULC6-28A	28	5	31.1	34.4	1	45.5	13.19	35
ULC6-30	30	5	33.3	40.7	1	53.5	11.21	35
ULC6-30A	30	5	33.3	36.8	1	48.4	12.40	35
ULC6-33	33	5	36.7	44.9	1	59	10.17	35

HIGHER VOLTAGES AVAILABLE. CONTACT FACTORY

NOTES

- NOTE 1:** ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
- NOTE 2:** ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
- ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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ULC6 SERIES
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600 WATT TRANSIENT
SUPPRESSOR SPECIFICATIONS

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TABLE 5A - LCE SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

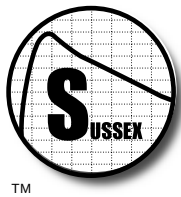
INDUSTRY STANDARD PART NUMBER	STANDOFF VOLTAGE (V _{so}) Volts	MAX. REVERSE LEAKAGE (I _R)@V _{so} μA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 2)		MAX CAPACITANCE @ 0 VOLTS Pf
			MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
ULC6-33A	33	5	36.7	40.6	1	53.3	11.26	35
ULC6-36	36	5	40	48.9	1	64.3	9.33	35
ULC6-36A	36	5	40	44.2	1	58.1	10.33	35
ULC6-40	40	5	44.4	54.3	1	71.4	8.40	35
ULC6-40A	40	5	44.4	49.1	1	64.5	9.30	35
ULC6-43	43	5	47.8	58.4	1	76.7	7.82	35
ULC6-43A	43	5	48.8	52.8	1	69.4	8.65	35
ULC6-45	45	5	50	61.1	1	80.3	7.47	35
ULC6-45A	45	5	50	55.3	1	72.7	8.25	35
ULC6-48	48	5	53	65.1	1	85.5	7.02	35
ULC6-48A	48	5	53	58.9	1	77.4	7.75	35
ULC6-51	51	5	56.7	69.3	1	91.1	6.59	35
ULC6-51A	51	5	56.7	62.7	1	82.4	7.28	35
ULC6-54	54	5	60	73.3	1	96.3	6.23	35
ULC6-54A	54	5	60	66.3	1	87.1	6.89	35
ULC6-58	58	5	64.4	78.7	1	103	5.83	35
ULC6-58A	58	5	64.4	71.2	1	93.6	6.41	35
ULC6-60	60	5	66.7	81.5	1	107	5.61	35
ULC6-60A	60	5	66.7	73.7	1	96.8	6.20	35
ULC6-64	64	5	71.1	86.9	1	114	5.26	35
ULC6-64A	64	5	71.1	78.6	1	103	5.83	35
ULC6-70	70	5	77.8	95.1	1	125	4.80	35
ULC6-70A	70	5	77.8	86	1	113	5.31	35
ULC6-75	75	5	83.3	102	1	134	4.48	35
ULC6-75A	75	5	83.3	92.1	1	121	4.96	35
ULC6-80	80	5	88.7	108	1	142	4.23	35
ULC6-80A	80	5	88.7	98	1	129	4.65	35
ULC6-90	90	5	100	122	1	160	3.75	35
ULC6-90A	90	5	100	111	1	146	4.11	35
ULC6-100	100	5	111	136	1	179	3.35	35
ULC6-100A	100	5	111	123	1	162	3.70	35
ULC6-110	110	5	122	149	1	196	3.06	35
ULC6-110A	110	5	122	135	1	178	3.37	35
ULC6-120	120	5	133	163	1	214	2.80	35
ULC6-120A	120	5	133	147	1	193	3.11	35
ULC6-130	130	5	144	176	1	231	2.60	35
ULC6-130A	130	5	144	159	1	209	2.87	35
ULC6-150	150	5	167	204	1	268	2.24	35
ULC6-150A	150	5	167	185	1	243	2.47	35
ULC6-160	160	5	178	218	1	287	2.09	35
ULC6-160A	160	5	178	197	1	259	2.32	35
ULC6-170	170	5	189	231	1	304	1.97	35
ULC6-170A	170	5	189	209	1	275	2.18	35

HIGHER VOLTAGES AVAILABLE. CONTACT FACTORY

NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C

NOTE 2: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE

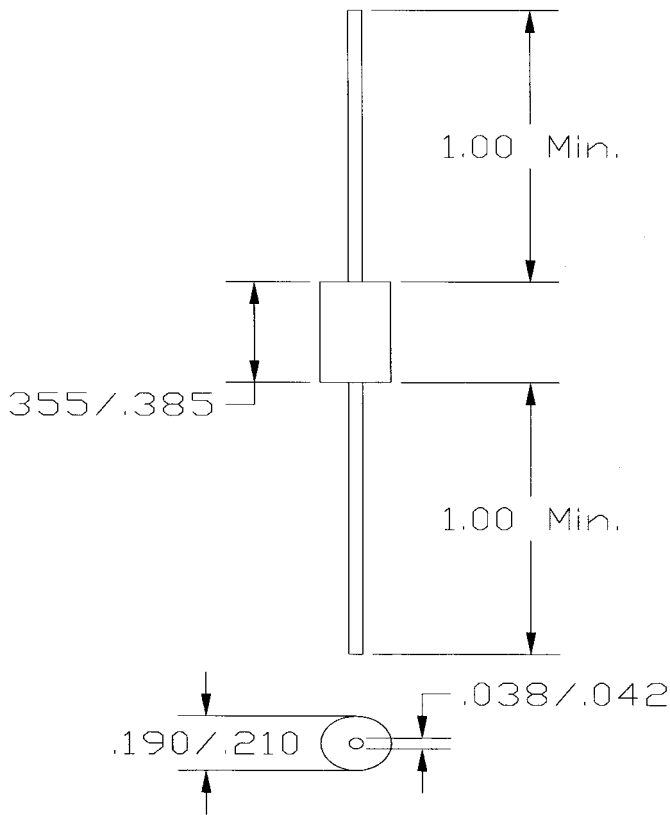


SUSSEX

SEMICONDUCTOR, INC.

12251 TOWNE LAKE DRIVE, FORT MYERS, FLORIDA, 33913 • TEL: (239) 768-6800 • FAX: (239) 768-6868

ULC15 SERIES ULTRA-LOW CAPACITANCE 1500 WATT TRANSIENT SUPPRESSOR SPECIFICATIONS



All Dimensions In Inches

◆ ULC15 SERIES TRANSIENT SUPPRESSORS

◆ VOLTAGES - 6.8+

◆ 1500 WATT MAXIMUM POWER DISSIPATION

ULC SERIES ULTRA LOW CAPACITANCE DEVICE SPECIFICATIONS

- ◆ Built With Sussex Glass Passivated Dies
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Polarity Indicated By Solvent Resistant Marking
- ◆ Operating Temperature: -55 to 175°C
- ◆ Storage Temperature: -55 to 175°C
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band
- ◆ Silver Plated Leads, Solderable Per MIL-STD-750

For additional Information and to request a quote
call the factory at (239) 768-6800.

CUSTOM ORDERING SPECIFIER

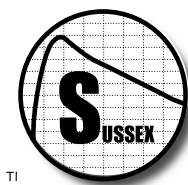
DIE SPECIFICATIONS

ULC15-

DEVICE PART
NUMBER

STANDOFF
VOLTAGE

- ◆ BLANK INDICATES UNIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ A INDICATES UNIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}



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**ULC15 SERIES
ULTRA-LOW CAPACITANCE
1500 WATT TRANSIENT
SUPPRESSOR SPECIFICATIONS**

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TABLE 5A - LCE SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

INDUSTRY STANDARD PART NUMBER	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@ V _{SO} μA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 2)		MAX CAPACITANCE @ 0 VOLTS Pf
			MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
ULC15-6.8	6.8	500	7.2	8.8	10	12.3	>100	35
ULC15-7	7	500	7.78	9.51	10	13.3	100	35
ULC15-7A	7	500	7.78	8.6	10	12	100	35
ULC15-7.5	7.5	250	8.33	10.2	10	14.3	100	35
ULC15-7.5A	7.5	250	8.33	9.21	10	12.9	100	35
ULC15-8	8	100	8.89	10.9	1	15	100	35
ULC15-8A	8	100	8.89	9.83	1	13.6	100	35
ULC15-8.5	8.5	50	9.44	11.5	1	15.9	94	35
ULC15-8.5A	8.5	50	9.44	10.4	1	14.4	100	35
ULC15-9	9	10	10	12.2	1	16.9	89	35
ULC15-9A	9	10	10	11.1	1	15.4	97	35
ULC15-10	10	5	11.1	13.6	1	18.8	80	35
ULC15-10A	10	5	11.1	12.3	1	17	88	35
ULC15-11	11	5	12.2	14.9	1	20.1	74	35
ULC15-11A	11	5	12.2	13.5	1	18.2	82	35
ULC15-12	12	5	13.3	16.3	1	22	68	35
ULC15-12A	12	5	13.3	14.7	1	19.9	75	35
ULC15-13	13	5	14.4	17.6	1	23.8	63	35
ULC15-13A	13	5	14.4	15.9	1	21.5	70	35
ULC15-14	14	5	15.6	19.1	1	25.8	58	35
ULC15-14A	14	5	15.6	17.2	1	23.2	65	35
ULC15-15	15	5	16.7	20.4	1	26.9	56	35
ULC15-15A	15	5	16.7	18.5	1	24.4	61	35
ULC15-16	16	5	17.8	21.8	1	28.8	52	35
ULC15-16A	16	5	17.8	19.7	1	26	57	35
ULC15-17	17	5	18.9	23.1	1	30.5	49	35
ULC15-17A	17	5	18.9	20.9	1	27.6	54	35
ULC15-18	18	5	20	24.4	1	32.2	46	35
ULC15-18A	18	5	20	22.1	1	29.2	51	35
ULC15-20	20	5	22.2	27.1	1	35.8	42	35
ULC15-20A	20	5	22.2	24.5	1	32.4	46	35
ULC15-22	22	5	24.4	29.8	1	39.4	38	35
ULC15-22A	22	5	24.4	26.9	1	35.5	42	35
ULC15-24	24	5	26.7	32.6	1	43	35	35
ULC15-24A	24	5	26.7	29.5	1	38.9	39	35
ULC15-26	26	5	28.9	35.3	1	46.6	32	35
ULC15-26A	26	5	28.9	31.9	1	42.1	36	35
ULC15-28	28	5	31.1	38	1	50.1	30	35
ULC15-28A	28	5	31.1	34.4	1	45.5	33	35
ULC15-30	30	5	33.3	40.7	1	53.5	28	35
ULC15-30A	30	5	33.3	36.8	1	48.4	31	35
ULC15-33	33	5	36.7	44.9	1	59	25.4	35

THIS TABLE CONTINUES

NOTES

- NOTE 1:** ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
NOTE 2: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
 ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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ULC15 SERIES
ULTRA-LOW CAPACITANCE
1500 WATT TRANSIENT
SUPPRESSOR SPECIFICATIONS

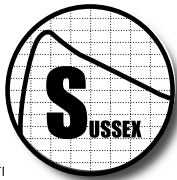
TABLE 5A - LCE SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

INDUSTRY STANDARD PART NUMBER	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@V _{SO} μA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 2)		MAX CAPACITANCE @ 0 VOLTS Pf
			MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
ULC15-33A	33	5	36.7	40.6	1	53.3	28.1	35
ULC15-36	36	5	40	48.9	1	64.3	23.3	35
ULC15-36A	36	5	40	44.2	1	58.1	25.8	35
ULC15-40	40	5	44.4	54.3	1	71.4	21	35
ULC15-40A	40	5	44.4	49.1	1	64.5	23.3	35
ULC15-43	43	5	47.8	58.4	1	76.7	19.5	35
ULC15-43A	43	5	48.8	52.8	1	69.4	21.6	35
ULC15-45	45	5	50	61.1	1	80.3	18.7	35
ULC15-45A	45	5	50	55.3	1	72.7	20.6	35
ULC15-48	48	5	53	65.1	1	85.5	17.5	35
ULC15-48A	48	5	53	58.9	1	77.4	19.4	35
ULC15-51	51	5	56.7	69.3	1	91.1	16.5	35
ULC15-51A	51	5	56.7	62.7	1	82.4	18.2	35
ULC15-54	54	5	60	73.3	1	96.3	15.6	35
ULC15-54A	54	5	60	66.3	1	87.1	17.2	35
ULC15-58	58	5	64.4	78.7	1	103	14.6	35
ULC15-58A	58	5	64.4	71.2	1	93.6	16	35
ULC15-60	60	5	66.7	815	1	107	14	35
ULC15-60A	60	5	66.7	73.7	1	96.8	15.5	35
ULC15-64	64	5	71.1	86.9	1	114	13.2	35
ULC15-64A	64	5	71.1	78.6	1	103	14.6	35
ULC15-70	70	5	77.8	95.1	1	125	12	35
ULC15-70A	70	5	77.8	86	1	113	13.3	35
ULC15-75	75	5	83.3	102	1	134	11.2	35
ULC15-75A	75	5	83.3	92.1	1	121	12.4	35
ULC15-80	80	5	88.7	108	1	142	10.6	35
ULC15-80A	80	5	88.7	98	1	129	11.6	35
ULC15-90	90	5	100	122	1	160	9.4	35
ULC15-90A	90	5	100	111	1	146	10.3	35
ULC15-100	100	5	111	136	1	179	8.4	35
ULC15-100A	100	5	111	123	1	162	9.3	35
ULC15-110	110	5	122	149	1	196	7.7	35
ULC15-110A	110	5	122	135	1	178	8.4	35
ULC15-120	120	5	133	163	1	214	7	35
ULC15-120A	120	5	133	147	1	193	7.8	35
ULC15-130	130	5	144	176	1	231	6.5	35
ULC15-130A	130	5	144	159	1	209	7.2	35
ULC15-150	150	5	167	204	1	268	5.6	35
ULC15-150A	150	5	167	185	1	243	6.2	35
ULC15-160	160	5	178	218	1	287	5.2	35
ULC15-160A	160	5	178	197	1	259	5.8	35
ULC15-170	170	5	189	231	1	304	4.9	35
ULC15-170A	170	5	189	209	1	275	5.4	35

THIS TABLE CONTINUES

NOTES

- NOTE 1:** ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
- NOTE 2:** ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
- ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



SUSSEX
SEMICONDUCTOR, INC.

**1.5KE SERIES 1500 WATT
TRANSIENT SUPPRESSORS**

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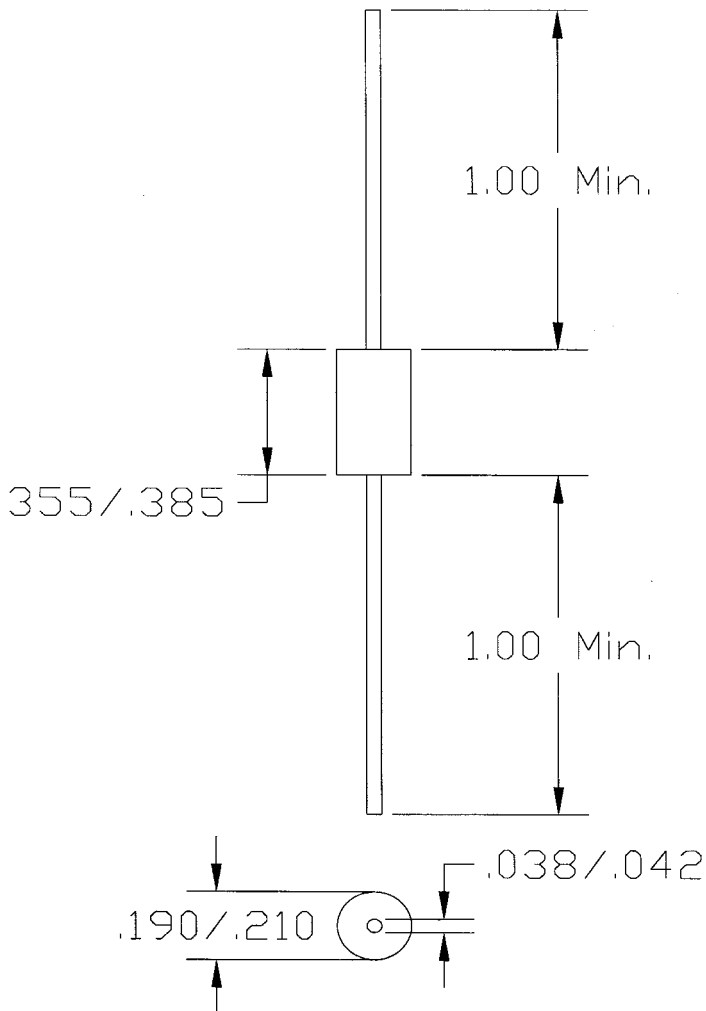
1.5KE SERIES TRANSIENT SUPPRESSORS

VOLTAGES - 6.8 TO 440 VOLTS

1500 WATT MAXIMUM POWER DISSIPATION

1.5KE SERIES DEVICE SPECIFICATIONS

- ◆ Built With Sussex Glass Passivated Dies
- ◆ Available as Uni- and Bi-Directional
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Polarity Indicated By Solvent Resistant Marking
- ◆ Operating Temperature: -55 to 175°C
- ◆ Storage Temperature: -55 to 175°C
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band on Unipolar Types
- ◆ Silver Plated Leads, Solderable Per MIL-STD-750
- ◆ Underwriter Laboratories Approved



All Dimensions In Inches

CUSTOM ORDERING SPECIFIER

DIE SPECIFICATIONS

1.5KE

DEVICE PART
NUMBER

REVERSE
BREAKDOWN
VOLTAGE
(VBR)

- ◆ BLANK INDICATES UNIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ A INDICATES UNIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}
- ◆ C INDICATES BIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ CA INDICATES BIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}



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1.5KE SERIES 1500 WATT TRANSIENT SUPPRESSOR SPECIFICATIONS CONTINUED

TABLE 6A - 1.5KE SERIES 1500 WATT TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

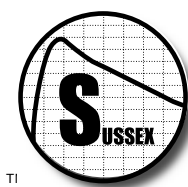
JEDEC PART NUMBERS	SUSSEX PART NUMBERS 1500 WATT 1.5KE SERIES	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@V _{SO} (NOTE 2) µA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 3)		MAX. TEMP. COEFFICIENT OF V _{BR} (%/°C)
				MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
1N6267	1.5KE6.8	5.50	1000	6.12	7.48	10	10.8	139	0.057
1N6267A	1.5KE6.8A	5.80	1000	6.45	7.14	10	10.5	143	0.057
1N6268	1.5KE7.5	6.05	500	6.75	8.25	10	11.7	128	0.061
1N6268A	1.5KE7.5A	6.40	500	7.13	7.88	10	11.3	132	0.061
1N6269	1.5KE8.2	6.63	200	7.38	9.02	10	12.5	120	0.065
1N6269A	1.5KE8.2A	7.02	200	7.79	8.61	10	12.1	124	0.065
1N6270	1.5KE9.1	7.37	50	8.19	10.00	1	13.8	109	0.068
1N6270A	1.5KE9.1A	7.78	50	8.65	9.55	1	13.4	112	0.068
1N6271	1.5KE10	8.10	10	9.00	11.00	1	15.0	100	0.073
1N6271A	1.5KE10A	8.55	10	9.50	10.50	1	14.5	103	0.073
1N6272	1.5KE11	8.92	5.0	9.90	12.10	1	16.2	93	0.075
1N6272A	1.5KE11A	9.40	5.0	10.50	11.60	1	15.6	96	0.075
1N6273	1.5KE12	9.72	5.0	10.80	13.20	1	17.3	87	0.078
1N6273A	1.5KE12A	10.20	5.0	11.40	12.60	1	16.7	90	0.078
1N6274	1.5KE13	10.50	5.0	11.70	14.30	1	19.0	79	0.061
1N6274A	1.5KE13A	11.10	5.0	12.40	13.70	1	18.2	82	0.081
1N6275	1.5KE15	12.10	5.0	13.50	16.50	1	22.0	68	0.084
1N6275A	1.5KE15A	12.80	5.0	14.30	15.80	1	21.2	71	0.084
1N6276	1.5KE16	12.90	5.0	14.40	17.60	1	23.5	64	0.086
1N6276A	1.5KE16A	13.60	5.0	15.20	16.80	1	22.5	67	0.086
1N6277	1.5KE18	14.50	5.0	16.20	19.80	1	26.5	56.5	0.088
1N6277A	1.5KE18A	15.30	5.0	17.10	18.90	1	25.2	59.5	0.088
1N6278	1.5KE20	16.20	5.0	18.00	22.00	1	29.1	51.5	0.090
1N6278A	1.5KE20A	17.10	5.0	19.00	21.00	1	27.7	54	0.090
1N6279	1.5KE22	17.80	5.0	19.80	24.20	1	31.9	47	0.092
1N6279A	1.5KE22A	18.80	5.0	20.90	23.10	1	30.6	49	0.092
1N6280	1.5KE24	19.40	5.0	21.60	26.40	1	34.7	43	0.091
1N6280A	1.5KE24A	20.50	5.0	22.80	25.20	1	33.2	45	0.094
1N6281	1.5KE27	21.80	5.0	24.30	29.70	1	39.1	38.5	0.096
1N6281A	1.5KE27A	23.10	5.0	25.70	28.40	1	37.5	40	0.096
1N6282	1.5KE30	24.30	5.0	27.00	33.00	1	43.5	34.5	0.097
1N6282A	1.5KE30A	25.60	5.0	28.50	31.50	1	41.4	36	0.097
1N6283	1.5KE33	26.80	5.0	29.70	36.30	1	47.7	31.5	0.098
1N6283A	1.5KE33A	28.20	5.0	31.40	34.70	1	45.7	33	0.098
1N6284	1.5KE36	29.10	5.0	32.40	39.60	1	52.0	29	0.099
1N6284A	1.5KE36A	30.80	5.0	34.20	37.80	1	49.9	30	0.099
1N6285	1.5KE39	31.60	5.0	35.10	42.90	1	56.4	26.5	0.100
1N6285A	1.5KE39A	33.30	5.0	37.10	41.00	1	53.9	28	0.100
1N6286	1.5KE43	34.80	5.0	38.70	47.30	1	61.9	24	0.101
1N6286A	1.5KE43A	36.80	5.0	40.90	45.20	1	59.3	25	0.101
1N6287	1.5KE47	36.10	5.0	42.30	51.70	1	67.8	22.2	0.101
1N6287A	1.5KE47A	40.20	5.0	44.70	49.40	1	64.8	23.2	0.101
1N6288	1.5KE51	41.30	5.0	45.90	56.10	1	73.5	20.4	0.102

THIS TABLE CONTINUES

NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



SUSSEX
SEMICONDUCTOR, INC.

**1.5KE SERIES 1500 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

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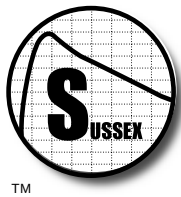
TABLE 6A - 1.5KE SERIES 1500 WATT TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

JEDEC PART NUMBERS	SUSSEX PART NUMBERS 1500 WATT 1.5KE SERIES	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@V _{SO} (NOTE 2) μA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 3)		MAX. TEMP. COEFFICIENT OF V _{BR} (%/°C)
				MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
1N6288A	1.5KE51A	43.60	5.0	48.50	53.60	1	70.1	21.4	0.102
1N6289	1.5KE56	45.60	5.0	50.40	61.80	1	80.5	18.6	0.103
1N6289A	1.5KE56A	47.80	5.0	53.20	58.80	1	77.0	19.5	0.103
1N6290	1.5KE62	50.20	5.0	55.80	68.20	1	89.0	16.9	0.104
1N6290A	1.5KE62A	53.00	5.0	58.90	65.10	1	85.0	17.7	0.104
1N6291	1.5KE68	55.10	5.0	61.20	74.80	1	96.0	15.3	0.104
1N6291A	1.5KE68A	58.10	5.0	64.60	71.40	1	92.0	16.3	0.104
1N6292	1.5KE75	60.70	5.0	67.50	82.50	1	108.0	13.9	0.105
1N6292A	1.5KE75A	64.10	5.0	71.30	78.80	1	103.0	14.6	0.105
1N6293	1.5KE82	66.40	5.0	73.80	90.20	1	118.0	12.7	0.105
1N6293A	1.5KE82A	70.10	5.0	77.90	86.10	1	113.0	13.3	0.105
1N6294	1.5KE91	73.70	5.0	81.90	100.00	1	131.0	11.4	0.106
1N6294A	1.5KE91A	77.80	5.0	86.50	95.50	1	125.0	12	0.106
1N6295	1.5KE100	81.00	5.0	90.00	110.00	1	144.0	10.4	0.106
1N6295A	1.5KE100A	85.50	5.0	95.00	105.00	1	137.0	11	0.106
1N6296	1.5KE110	89.20	5.0	99.00	121.00	1	158.0	9.5	0.107
1N6296A	1.5KE110A	94.00	5.0	106.00	116.00	1	152.0	9.9	0.107
1N6297	1.5KE120	97.20	5.0	108.00	132.00	1	173.0	8.7	0.107
1N6297A	1.5KE120A	102.00	5.0	114.00	126.00	1	165.0	9.1	0.107
1N6298	1.5KE130	106.00	5.0	117.00	143.00	1	187.0	8	0.107
1N6298A	1.5KE130A	111.00	5.0	124.00	137.00	1	179.0	8.4	0.107
1N6299	1.5KE150	121.00	5.0	136.00	165.00	1	215.0	7	0.108
1N6299A	1.5KE150A	128.00	5.0	143.00	158.00	1	207.0	7.2	0.108
1N6300	1.5KE160	130.00	5.0	144.00	176.00	1	230.0	6.5	0.108
1N6300A	1.5KE160A	136.00	5.0	152.00	168.00	1	219.0	6.8	0.108
1N6301	1.5KE170	138.00	5.0	153.00	167.00	1	244.0	6.2	0.108
1N6301A	1.5KE170A	145.00	5.0	162.00	179.00	1	234.0	6.4	0.108
1N6302	1.5KE180	146.00	5.0	162.00	198.00	1	256.0	5.8	0.108
1N6302A	1.5KE180A	154.00	5.0	171.00	189.00	1	246.0	6.1	0.108
1N6303A	1.5KE200	162.00	5.0	180.00	220.00	1	287.0	5.2	0.108
1N6303A	1.5KE200A	171.00	5.0	190.00	210.00	1	274.0	5.5	0.108
N/A	1.5KE220	175.00	5.0	196.00	242.00	1	344.0	4.3	0.108
N/A	1.5KE220A	185.00	5.0	209.00	231.00	1	328.0	4.6	0.108
N/A	1.5KE250	202.00	5.0	225.00	275.00	1	360.0	5	0.110
N/A	1.5KE250A	214.00	5.0	237.00	263.00	1	344.0	5	0.110
N/A	1.5KE300	243.00	5.0	270.00	330.00	1	430.0	5	0.110
N/A	1.5KE300A	256.00	5.0	285.00	315.00	1	414.0	5	0.110
N/A	1.5KE350	284.00	5.0	315.00	385.00	1	504.0	4	0.110
N/A	1.5KE350A	300.00	5.0	333.00	368.00	1	482.0	4	0.110
N/A	1.5KE400	324.00	5.0	360.00	440.00	1	574.0	4	0.110
N/A	1.5KE400A	342.00	5.0	380.00	420.00	1	548.0	4	0.110
N/A	1.5KE440	356.00	5.0	396.00	484.00	1	598.0	4	0.110
N/A	1.5KE440A	376.00	5.0	418.00	462.00	1	590.0	4	0.110

NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
 ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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**1.5KE SERIES 1500 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

FIGURE 1A - TYPICAL JUNCTION CAPACITANCE

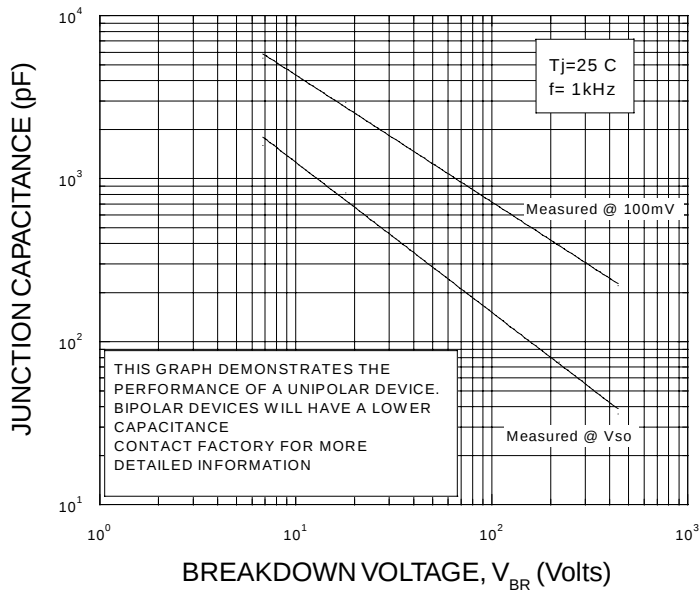


FIGURE 2A - PULSE WAVEFORM

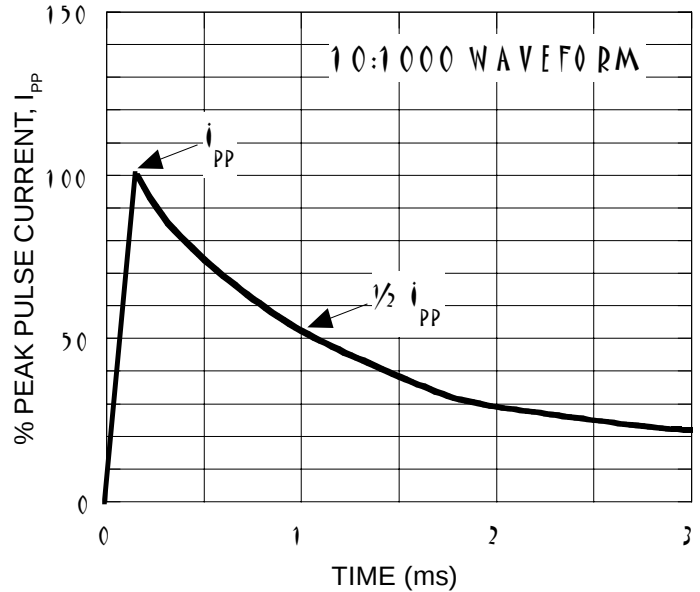
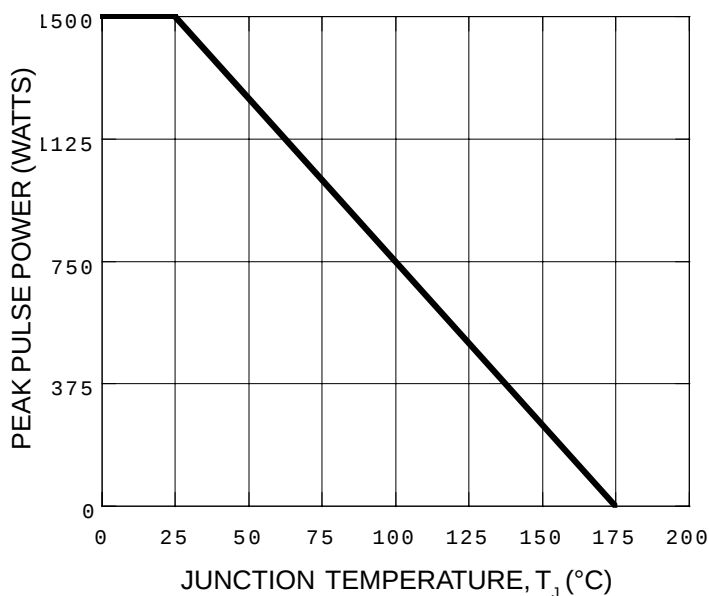
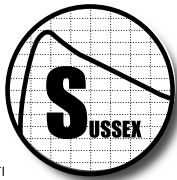


FIGURE 3A - PULSE DERATING CURVE



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**3KE SERIES 3000 WATT
TRANSIENT SUPPRESSORS**

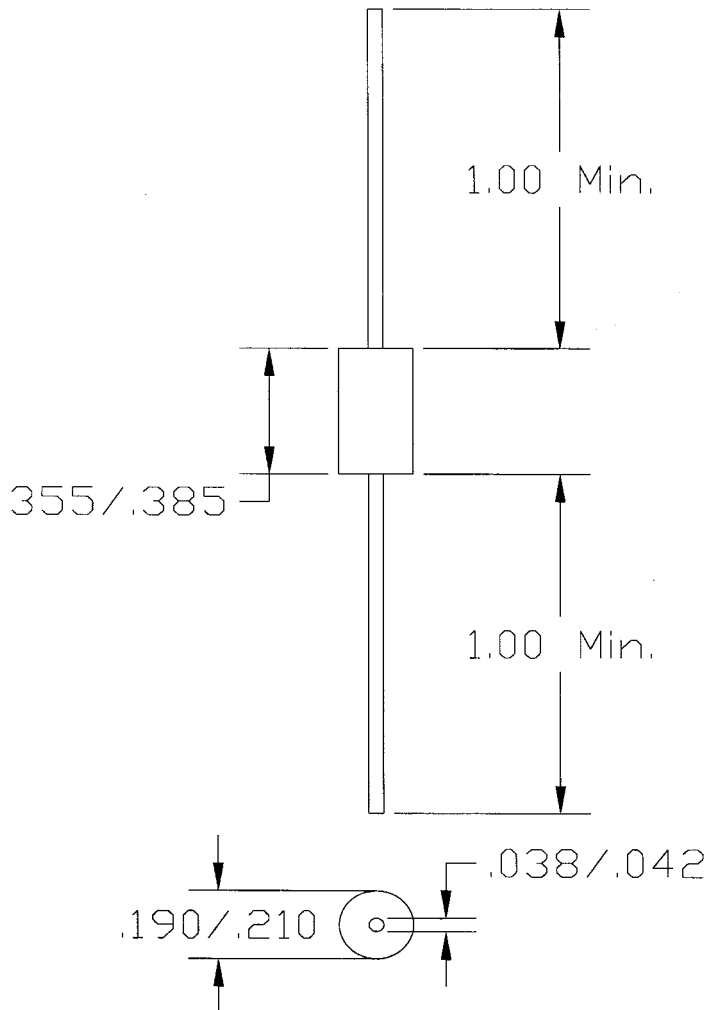
3KE SERIES TRANSIENT SUPPRESSORS

VOLTAGES - 6.8 TO 440 VOLTS

3000 WATT MAXIMUM POWER DISSIPATION

3KE SERIES DEVICE SPECIFICATIONS

- ◆ Built With Sussex Glass Passivated Dies
- ◆ Available as Uni- and Bi-Directional
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Polarity Indicated By Solvent Resistant Marking
- ◆ Operating Temperature: -55 to 175°C
- ◆ Storage Temperature: -55 to 175°C
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band on Unipolar Types
- ◆ Silver Plated Leads, Solderable Per MIL-STD-750
- ◆ Underwriter Laboratories Approved



All Dimensions In Inches

CUSTOM ORDERING SPECIFIER

DIE SPECIFICATIONS

3KE

DEVICE PART
NUMBER

REVERSE
BREAKDOWN
VOLTAGE
(VBR)

- ◆ BLANK INDICATES UNIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ A INDICATES UNIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}
- ◆ C INDICATES BIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ CA INDICATES BIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}



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**3KE SERIES 3000 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

TABLE 6A - 1.5KE SERIES 1500 WATT TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

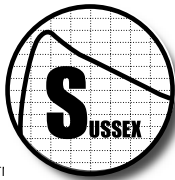
JEDEC PART NUMBERS	SUSSEX PART NUMBERS 1500 WATT 1.5KE SERIES	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@V _{SO} (NOTE 2) µA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 3)		MAX. TEMP. COEFFICIENT OF V _{BR} (%/°C)
				MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
N/A	3KE13	10.50	5.0	11.70	14.30	1	19.0	158.0	0.061
N/A	3KE15	12.10	5.0	13.50	16.50	1	22.0	136.0	0.084
N/A	3KE15A	12.80	5.0	14.30	15.80	1	21.2	142.0	0.084
N/A	3KE16	12.90	5.0	14.40	17.60	1	23.5	128.0	0.086
N/A	3KE16A	13.60	5.0	15.20	16.80	1	22.5	134.0	0.086
N/A	3KE18	14.50	5.0	16.20	19.80	1	26.5	113.0	0.088
N/A	3KE18A	15.30	5.0	17.10	18.90	1	25.2	119.0	0.088
N/A	3KE20	16.20	5.0	18.00	22.00	1	29.1	103.0	0.090
N/A	3KE20A	17.10	5.0	19.00	21.00	1	27.7	108.0	0.090
N/A	3KE22	17.80	5.0	19.80	24.20	1	31.9	94.0	0.092
N/A	3KE22A	18.80	5.0	20.90	23.10	1	30.6	98.0	0.092
N/A	3KE24	19.40	5.0	21.60	26.40	1	34.7	86.0	0.091
N/A	3KE24A	20.50	5.0	22.80	25.20	1	33.2	90.0	0.094
N/A	3KE27	21.80	5.0	24.30	29.70	1	39.1	77.0	0.096
N/A	3KE27A	23.10	5.0	25.70	28.40	1	37.5	80.0	0.096
N/A	3KE30	24.30	5.0	27.00	33.00	1	43.5	69.0	0.097
N/A	3KE30A	25.60	5.0	28.50	31.50	1	41.4	72.0	0.097
N/A	3KE33	26.80	5.0	29.70	36.30	1	47.7	63.0	0.098
N/A	3KE33A	28.20	5.0	31.40	34.70	1	45.7	66.0	0.098
N/A	3KE36	29.10	5.0	32.40	39.60	1	52.0	58.0	0.099
N/A	3KE36A	30.80	5.0	34.20	37.80	1	49.9	60.0	0.099
N/A	3KE39	31.60	5.0	35.10	42.90	1	56.4	53.0	0.100
N/A	3KE39A	33.30	5.0	37.10	41.00	1	53.9	56.0	0.100
N/A	3KE43	34.80	5.0	38.70	47.30	1	61.9	48.0	0.101
N/A	3KE43A	36.80	5.0	40.90	45.20	1	59.3	50.0	0.101
N/A	3KE47	36.10	5.0	42.30	51.70	1	67.8	44.4	0.101
N/A	3KE47A	40.20	5.0	44.70	49.40	1	64.8	46.4	0.101
N/A	3KE51	41.30	5.0	45.90	56.10	1	73.5	40.8	0.102

THIS TABLE CONTINUES

NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
 ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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3KE SERIES 3000 WATT TRANSIENT SUPPRESSOR SPECIFICATIONS CONTINUED

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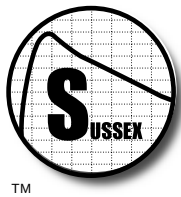
TABLE 6A - 1.5KE SERIES 1500 WATT TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

JEDEC PART NUMBERS	SUSSEX PART NUMBERS 1500 WATT 1.5KE SERIES	STANDOFF VOLTAGE (V_{SO}) Volts	MAX. REVERSE LEAKAGE (I_R) @ V_{SO} (NOTE 2) μA	REVERSE BREAKDOWN VOLTAGE (V_{BR}) @ I_R		TEST CURRENT (I_T) mA	MAX. CLAMPING VOLTAGE (V_{CL}) @ PEAK PULSE CURRENT (I_{PP}) (NOTE 3)		MAX. TEMP. COEFFICIENT OF V_{BR} (%/°C)
				MIN. Volts	MAX. Volts		V_{CL} Volts	I_{PP} Amps	
N/A	3KE51A	43.60	5.0	48.50	53.60	1	70.1	42.8	0.102
N/A	3KE56	45.60	5.0	50.40	61.80	1	80.5	37.2	0.103
N/A	3KE56A	47.80	5.0	53.20	58.80	1	77.0	39.0	0.103
N/A	3KE62	50.20	5.0	55.80	68.20	1	89.0	33.8	0.104
N/A	3KE62A	53.00	5.0	58.90	65.10	1	85.0	35.4	0.104
N/A	3KE68	55.10	5.0	61.20	74.80	1	96.0	30.6	0.104
N/A	3KE68A	58.10	5.0	64.60	71.40	1	92.0	32.6	0.104
N/A	3KE75	60.70	5.0	67.50	82.50	1	108.0	27.8	0.105
N/A	3KE75A	64.10	5.0	71.30	78.80	1	103.0	29.2	0.105
N/A	3KE82	66.40	5.0	73.80	90.20	1	118.0	25.4	0.105
N/A	3KE82A	70.10	5.0	77.90	86.10	1	113.0	26.6	0.105
N/A	3KE91	73.70	5.0	81.90	100.00	1	131.0	22.8	0.106
N/A	3KE91A	77.80	5.0	86.50	95.50	1	125.0	24.0	0.106
N/A	3KE100	81.00	5.0	90.00	110.00	1	144.0	20.8	0.106
N/A	3KE100A	85.50	5.0	95.00	105.00	1	137.0	22.0	0.106
N/A	3KE110	89.20	5.0	99.00	121.00	1	158.0	19.0	0.107
N/A	3KE110A	94.00	5.0	106.00	116.00	1	152.0	19.8	0.107
N/A	3KE120	97.20	5.0	108.00	132.00	1	173.0	17.4	0.107
N/A	3KE120A	102.00	5.0	114.00	126.00	1	165.0	18.2	0.107
N/A	3KE130	106.00	5.0	117.00	143.00	1	187.0	16.0	0.107
N/A	3KE130A	111.00	5.0	124.00	137.00	1	179.0	16.8	0.107
N/A	3KE150	121.00	5.0	136.00	165.00	1	215.0	14.0	0.108
N/A	3KE150A	128.00	5.0	143.00	158.00	1	207.0	14.4	0.108
N/A	3KE160	130.00	5.0	144.00	176.00	1	230.0	13.0	0.108
N/A	3KE160A	136.00	5.0	152.00	168.00	1	219.0	13.6	0.108
N/A	3KE170	138.00	5.0	153.00	187.00	1	244.0	12.4	0.108
N/A	3KE170A	145.00	5.0	162.00	179.00	1	234.0	12.8	0.108
N/A	3KE180	146.00	5.0	162.00	198.00	1	256.0	11.6	0.108
N/A	3KE180A	154.00	5.0	171.00	189.00	1	246.0	12.2	0.108
N/A	3KE200	162.00	5.0	180.00	220.00	1	287.0	10.4	0.108
N/A	3KE200A	171.00	5.0	190.00	210.00	1	274.0	11.0	0.108
N/A	3KE220	175.00	5.0	196.00	242.00	1	344.0	8.6	0.108
N/A	3KE220A	185.00	5.0	209.00	231.00	1	328.0	9.2	0.108
N/A	3KE250	202.00	5.0	225.00	275.00	1	360.0	10.0	0.110
N/A	3KE250A	214.00	5.0	237.00	263.00	1	344.0	10.0	0.110
N/A	3KE300	243.00	5.0	270.00	330.00	1	430.0	10.0	0.110
N/A	3KE300A	256.00	5.0	285.00	315.00	1	414.0	10.0	0.110
N/A	3KE350	284.00	5.0	315.00	385.00	1	504.0	8.0	0.110
N/A	3KE350A	300.00	5.0	333.00	368.00	1	482.0	8.0	0.110
N/A	3KE400	324.00	5.0	360.00	440.00	1	574.0	8.0	0.110
N/A	3KE400A	342.00	5.0	380.00	420.00	1	548.0	8.0	0.110
N/A	3KE440	356.00	5.0	396.00	484.00	1	598.0	8.0	0.110
N/A	3KE440A	376.00	5.0	418.00	462.00	1	590.0	8.0	0.110

NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
 ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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**3KE SERIES 3000 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

FIGURE 1A - TYPICAL JUNCTION
CAPACITANCE

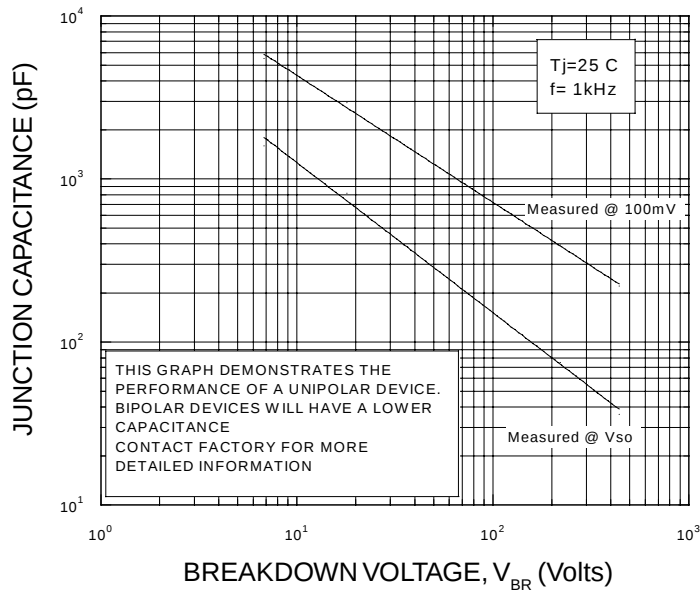
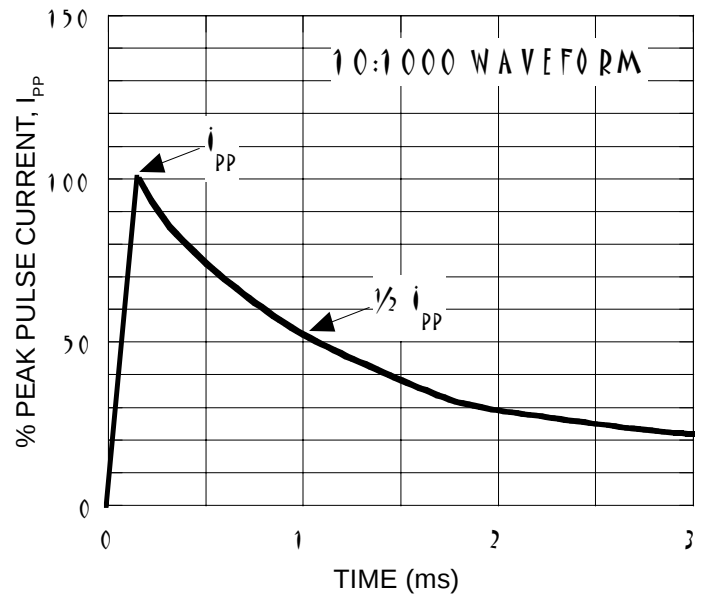
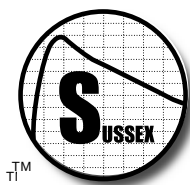


FIGURE 2A - PULSE WAVEFORM





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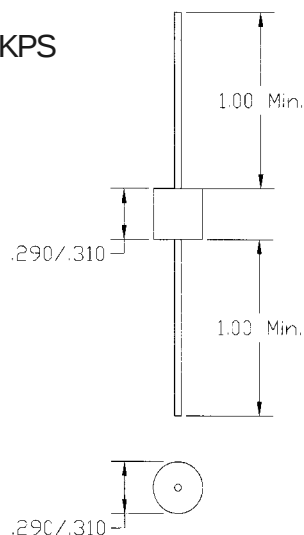
**5KP SERIES 5000 WATT
TRANSIENT SUPPRESSORS**

5KP SERIES TRANSIENT SUPPRESSORS

VOLTAGES - 5.0 TO 440 VOLTS

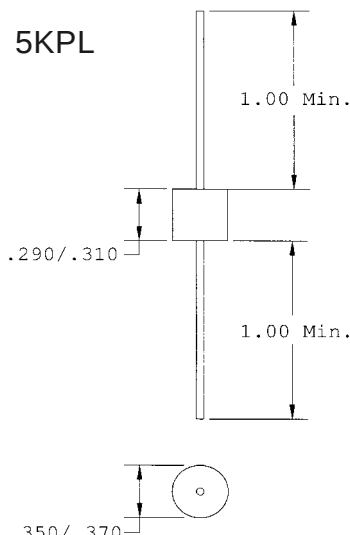
5000 WATT MAXIMUM POWER DISSIPATION

5KPS



All Dimensions In Inches

5KPL



All Dimensions In Inches

Two package sizes are available for your convenience. The "L" version is the industry standard size package for the 5KP. The "S" version is to save space in your application. Both sizes are UL approved.

5KP SERIES DEVICE SPECIFICATIONS

- ◆ Built With Sussex Glass Passivated Dies
- ◆ Available as Uni- and Bi-Directional
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Operating Temperature: -55 to 175°C
- ◆ Storage Temperature: -55 to 175°C
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band on Unipolar Types
- ◆ Plated Leads, Solderable Per MIL-STD-750 Method 2026
- ◆ Underwriter Laboratories Approved



CUSTOM ORDERING SPECIFIER

DIE SPECIFICATIONS

5KP

DEVICE PART
NUMBER

STAND-OFF
VOLTAGE
(V_{SO})

- ◆ BLANK INDICATES UNIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ A INDICATES UNIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}
- ◆ C INDICATES BIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ CA INDICATES BIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}



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5KP SERIES 5000 WATT TRANSIENT SUPPRESSOR SPECIFICATIONS CONTINUED

TABLE 7A - 5KP SERIES 5000 WATT TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

SUSSEX PART NUMBERS 5000 WATT 5KP SERIES	STANDOFF	MAX. REVERSE LEAKAGE (I _R)@V _{SO} (NOTE 2) µA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 3)		MAX. TEMP.
	VOLTAGE (V _{SO}) Volts		MIN. Volts	MAX. Volts	(I _T) mA	V _{CL} Volts	I _{PP} Amps	COEFFICIENT OF V _{BR} (%/°C)
5KP5.0	5.0	2000	6.4	7.3	50	9.6	546	0.057
5KP5.0A	5.0	2000	6.4	7.0	50	9.2	570	0.057
5KP6.0	6.0	5000	6.7	8.2	50	11.4	460	0.061
5KP6.0A	6.0	5000	6.7	7.4	50	10.3	509	0.061
5KP6.5	6.5	2000	7.2	8.8	50	12.3	426	0.065
5KP6.5A	6.5	2000	7.2	8.0	50	11.2	468	0.065
5KP7.0	7.0	1000	7.8	9.5	50	13.3	394	0.068
5KP7.0A	7.0	1000	7.8	8.6	50	12.0	437	0.068
5KP7.5	7.5	250	8.3	10.2	5.0	14.3	367	0.073
5KP7.5A	7.5	250	8.3	9.2	5.0	12.9	406	0.073
5KP8.0	8.0	150	8.9	10.9	5.0	15.0	350	0.075
5KP8.0A	8.0	150	8.9	9.8	5.0	13.6	386	0.075
5KP8.5	8.5	50	9.4	11.5	5.0	15.9	330	0.078
5KP8.5A	8.5	50	9.4	10.4	5.0	14.4	364	0.078
5KP9.0	9.0	20	10.0	12.2	5.0	16.9	310	0.081
5KP9.0A	9.0	20	10.0	11.1	5.0	15.4	340	0.081
5KP10	10	15	11.1	13.6	5.0	18.8	279	0.084
5KP10A	10	15	11.1	12.3	5.0	17.0	308	0.084
5KP11	11	10	12.2	14.9	5.0	20.1	261	0.086
5KP11A	11	10	12.2	13.5	5.0	18.2	288	0.086
5KP12	12	10	13.3	16.3	5.0	22.0	238	0.088
5KP12A	12	10	13.3	14.7	5.0	19.9	263	0.088
5KP13	13	10	14.4	17.6	5.0	23.8	220	0.090
5KP13A	13	10	14.4	15.9	5.0	21.5	244	0.090
5KP14	14	10	15.6	19.1	5.0	25.8	203	0.092
5KP14A	14	10	15.6	17.2	5.0	23.2	226	0.092
5KP15	15	10	16.7	20.4	5.0	26.9	195	0.094
5KP15A	15	10	16.7	18.5	5.0	24.4	215	0.094
5KP16	16	10	17.8	21.8	5.0	28.8	182	0.096
5KP16A	16	10	17.8	19.7	5.0	26.0	201	0.096
5KP17	17	10	18.9	23.1	5.0	30.5	172	0.097
5KP17A	17	10	18.9	20.9	5.0	27.6	190	0.097
5KP18	18	10	20.0	24.4	5.0	32.2	163	0.098
5KP18A	18	10	20.0	22.1	5.0	29.2	179	0.098
5KP20	20	10	22.2	27.1	5.0	35.8	146	0.099
5KP20A	20	10	22.2	24.5	5.0	32.4	162	0.099
5KP22	22	10	24.4	29.8	5.0	39.4	133	0.100
5KP22A	22	10	24.4	26.9	5.0	35.5	147	0.100
5KP24	24	10	26.7	32.6	5.0	43.0	122	0.101
5KP24A	24	10	26.7	29.5	5.0	38.9	134	0.101
5KP26	26	10	28.9	35.3	5.0	46.6	112	0.101
5KP26A	26	10	28.9	31.9	5.0	42.1	124	0.101
5KP28	28	10	31.1	38.0	5.0	50.1	104	0.102
5KP28A	28	10	31.1	34.4	5.0	45.4	115	0.102
5KP30	30	10	33.3	40.7	5.0	53.5	98	0.103
5KP30A	30	10	33.3	36.8	5.0	48.4	108	0.103
5KP33	33	10	36.7	44.9	5.0	59.0	88	0.104
5KP33A	33	10	36.7	40.6	5.0	53.3	98	0.104
5KP36	36	10	40.0	48.9	5.0	64.3	81	0.104
5KP36A	36	10	40.0	44.2	5.0	58.1	90	0.104
5KP40	40	10	44.4	54.3	5.0	71.4	73	0.105

THIS TABLE CONTINUES

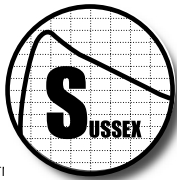
NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C

NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE

♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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**5KP SERIES 5000 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

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TABLE 7A - 5KP SERIES 5000 WATT TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)								
SUSSEX PART NUMBERS 5000 WATT 5KPSERIES	STANDOFF	MAX. REVERSE LEAKAGE (I _R)@V _{So} (NOTE 2) µA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 3)		MAX. TEMP.
	VOLTAGE		MIN. Volts	MAX. Volts	(I _T) mA	V _{CL} Volts	I _{PP} Amps	COEFFICIENT OF V _{BR} (%/°C)
	(V _{So}) Volts							
5KP40A	40	10	44.4	49.1	5.0	64.5	81	0.105
5KP43	43	10	47.8	58.4	5.0	76.7	68	0.105
5KP43A	43	10	47.8	52.8	5.0	69.4	75	0.105
5KP45	45	10	50.0	61.1	5.0	80.3	65	0.106
5KP45A	45	10	50.0	55.3	5.0	72.7	72	0.106
5KP48	48	10	53.3	65.2	5.0	85.5	61	0.106
5KP48A	48	10	53.3	58.9	5.0	77.4	67	0.106
5KP51	51	10	56.1	69.3	5.0	91.1	57	0.107
5KP51A	51	10	56.7	62.7	5.0	82.4	63	0.107
5KP54	54	10	60.0	73.3	5.0	96.3	54	0.107
5KP54A	54	10	60.0	66.3	5.0	87.1	60	0.107
5KP58	58	10	64.4	78.7	5.0	103.0	50	0.107
5KP58A	58	10	64.4	71.2	5.0	94.0	55	0.107
5KP60	60	10	66.7	81.5	5.0	107.0	49	0.108
5KP60A	60	10	66.7	73.7	5.0	97.0	54	0.108
5KP64	64	10	71.1	96.9	5.0	114.0	46	0.108
5KP64A	64	10	71.1	78.6	5.0	103.0	50	0.108
5KP70	70	10	77.6	95.1	5.0	125.0	42	0.108
5KP70A	70	10	77.8	86.0	5.0	113.0	46	0.108
5KP75	75	10	83.3	102.0	5.0	134.0	39	0.108
5KP75A	75	10	83.3	92.1	5.0	121.0	43	0.108
5KP78	78	10	86.7	106.0	5.0	139.0	37	0.108
5KP78A	78	10	86.7	95.8	5.0	126.0	41	0.108
5KP85	85	10	94.4	115.0	5.0	151.0	34	0.108
5KP85A	85	10	94.4	104.0	5.0	137.0	38	0.110
5KP90	90	10	100	122.0	5.0	160.0	32	0.110
5KP90A	90	10	100	111.0	5.0	146.0	35	0.110
5KP100	100	10	111	136.0	5.0	179.0	29	0.110
5KP100A	100	10	111	123.0	5.0	162.0	32	0.110
5KP110	110	10	122	149.0	5.0	196.0	26	0.112
5KP110A	110	10	122	135.0	5.0	177.0	28	0.112
5KP120	120	10	133	163.0	5.0	214.0	23	0.121
5KP120A	120	10	133	148.0	5.0	194.0	26.0	0.121
5KP160	160	10	177	217.0	5.0	285.0	18.0	0.135
5KP160A	160	10	177	197.0	5.0	259.0	19.0	0.134
5KP180	180	10	199	244.0	5.0	321.0	16.0	0.150
5KP180A	180	10	199	222.0	5.0	291.0	177.0	0.150
5KP200	200	10	222	272.0	5.0	356.0	14.0	0.200
5KP200A	200	10	222	247.0	5.0	323.0	15.0	0.200
5KP220	220	10	244	299.0	5.0	392.0	13.0	0.200
5KP220A	220	10	244	271.0	5.0	356.0	14.0	0.200
5KP250	250	10	277	340.0	5.0	445.0	11.0	0.222
5KP250A	250	10	277	308.0	5.0	404.0	12.0	0.222
5KP320	320	10	355	435.0	5.0	570.0	9.0	0.235
5KP320A	320	10	355	395.0	5.0	517.0	10.0	0.235
5KP360	360	10	399	4869.0	5.0	641.0	8.0	0.240
5KP360A	360	10	399	444.0	5.0	582.0	9.0	0.240
5KP400	400	10	443	543.0	5.0	712.0	7.0	0.250
5KP400A	400	10	443	493.0	5.0	647.0	8.0	0.250
5KP440	440	10	488	598.0	5.0	784.0	6.0	0.260
5KP440A	440	10	488	543.0	5.0	711.0	7.0	0.260

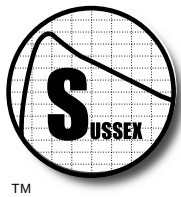
NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C

NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE

♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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**5KP SERIES 5000 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

FIGURE 1A - TYPICAL JUNCTION CAPACITANCE

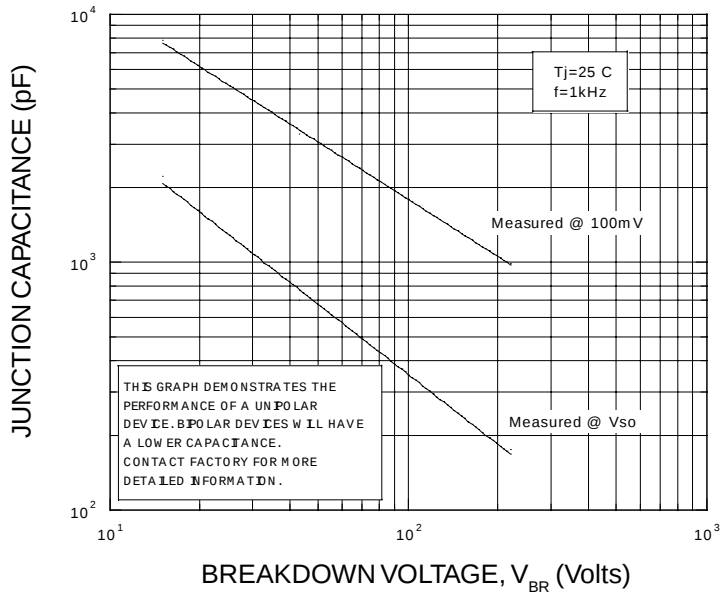


FIGURE 2A - PULSE WAVEFORM

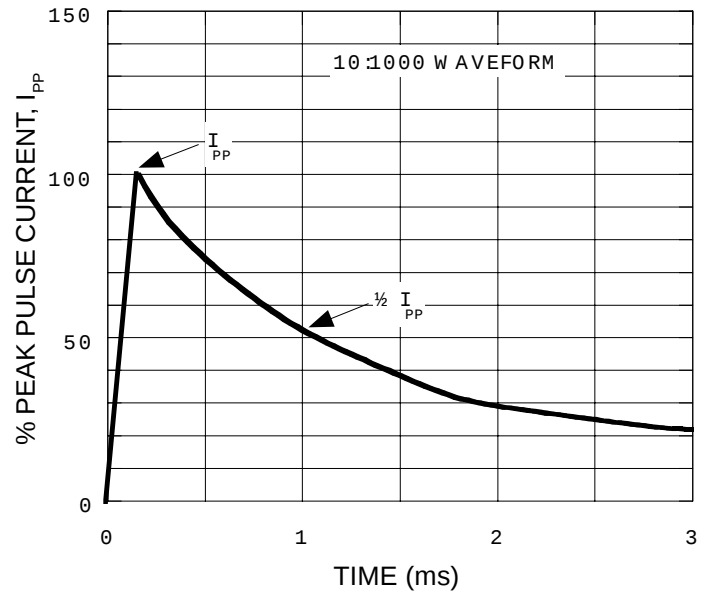
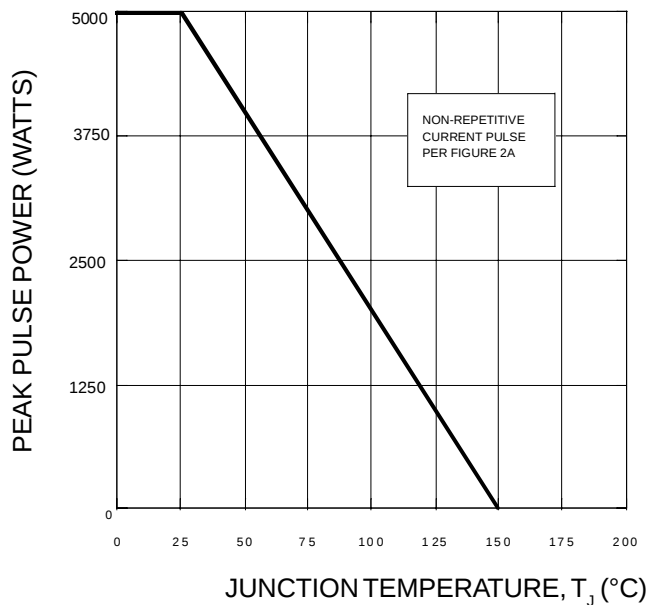
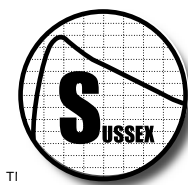


FIGURE 3A - PULSE DERATING CURVE



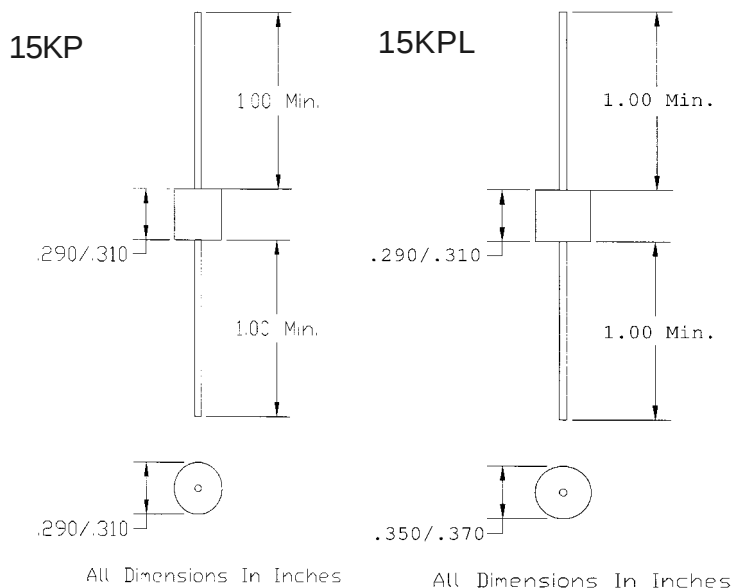
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**15KP SERIES 15000 WATT
TRANSIENT SUPPRESSORS**



15KP SERIES TRANSIENT SUPPRESSORS

VOLTAGES - 17 TO 220 VOLTS

15000 WATT MAXIMUM POWER DISSIPATION

15KP SERIES DEVICE SPECIFICATIONS

- ◆ Built With Sussex Glass Passivated Dies
- ◆ Available as Uni- and Bi-Directional
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Operating Temperature: -55 to 175°C
- ◆ Storage Temperature: -55 to 175°C
- ◆ Available in Unipolar and Bipolar
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band on Unipolar Types
- ◆ Solvent Resistant Marking
- ◆ Silver Plated Leads, Solderable Per MIL-STD-750



Two package sizes are available for your convenience. The "L" version is the industry standard size package for the 15KP. Our 15KP version is to save space in your application. Both are UL approved.

CUSTOM ORDERING SPECIFIER

15KP

DEVICE PART
NUMBER

STANDOFF
VOLTAGE
(V_{SO})

- ◆ BLANK INDICATES UNIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ A INDICATES UNIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}
- ◆ C INDICATES BIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ CA INDICATES BIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}

DIE SPECIFICATIONS



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**15KP SERIES 15000 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

TABLE 8A - 15KP SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

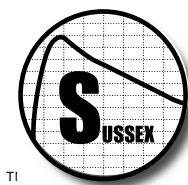
SUSSEX PART NUMBERS	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@V _{SO} (NOTE 2) μA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 3)		MAX. TEMP. COEFFICIENT OF V _{BR} (%/°C)
			MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
15KP17	17	5000	18.9	23.10	50	32.3	464	0.090
15KP17A	17	5000	18.9	20.90	90	29.3	512	0.085
15KP18	18	5000	20	24.40	50	34.2	429	0.090
15KP18A	18	5000	20	22.10	50	30.9	485	0.086
15KP20	20	1500	22.2	27.10	20	37.9	396	0.097
15KP20A	20	1500	22.2	24.50	20	34.3	437	0.090
15KP22	22	500	24.4	29.80	10	41.1	365	0.100
15KP22A	22	500	24.4	26.90	10	37.1	404	0.094
15KP24	24	150	26.7	32.60	5	45	333	0.101
15KP24A	24	150	26.7	29.50	5	40.7	369	0.096
15KP26	26	50	28.9	35.30	5	48.7	308	0.100
15KP26A	26	50	28.9	31.90	5	44	341	0.095
15KP28	28	25	31.1	38.00	5	52.4	286	0.101
15KP28A	28	25	31.1	34.40	5	47.5	316	0.095
15KP30	30	15	33.3	40.70	5	56.2	267	0.073
15KP30A	30	15	33.3	36.80	5	50.7	296	0.097
15KP33	33	10	36.7	44.90	5	60.6	248	0.103
15KP33A	33	10	36.7	40.60	5	54.8	274	0.098
15KP36	36	10	40	48.90	5	66	227	0.103
15KP36A	36	10	40	44.20	5	59.7	251	0.097
15KP40	40	10	44.4	54.30	5	72.8	206	0.103
15KP40A	40	10	44.4	49.10	5	65.8	228	0.098
15KP43	43	10	47.8	58.40	5	77.1	195	0.104
15KP43A	43	10	47.8	52.80	5	69.7	215	0.099
15KP45	45	10	50	61.10	5	60.7	186	0.103
15KP45A	45	10	50	55.30	5	73	205	0.099
15KP48	48	10	53.3	65.20	5	85.9	175	0.105
15KP48A	48	10	53.3	58.90	5	77.7	193	0.100
15KP51	51	10	56.7	69.30	5	91.5	164	0.105
15KP51A	51	10	56.7	62.70	5	92.8	181	0.101
15KP54	54	10	60	73.30	5	96.8	155	0.105
15KP54A	54	10	60	66.30	5	87.5	171	0.100
15KP58	58	10	64.4	78.70	5	104	144	0.106
15KP58A	58	10	64.4	71.20	5	94.0	160	0.100
15KP60	60	10	66.7	81.50	5	107	140	0.105
15KP60A	60	10	66.7	73.70	5	97.3	154	0.101
15KP64	64	10	71.1	86.90	5	115	130	0.106

THIS TABLE CONTINUES

NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
 ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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SEMICONDUCTOR, INC.

**15KP SERIES 15000 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

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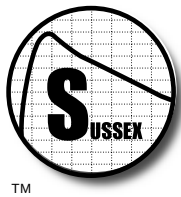
TABLE 8A - 15KP SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

SUSSEX PART NUMBERS	STANDOFF VOLTAGE (V _{SO}) Volts	MAX. REVERSE LEAKAGE (I _R)@V _{SO} (NOTE 2) μA	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) mA	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 3)		MAX. TEMP. COEFFICIENT OF V _{BR} (%/°C)
			MIN. Volts	MAX. Volts		V _{CL} Volts	I _{PP} Amps	
15KP64A	64	10	71.1	78.60	5	104	144	0.102
15KP70	70	10	77.8	95.10	5	126	119	0.106
15KP70A	70	10	77.8	86.00	5	114	132	0.101
15KP75	75	10	83.3	102.00	5	135	111	0.108
16KP75A	75	10	83.3	92.10	5	122	123	0.101
15KP78	78	10	86.7	106.00	5	140	107	0.108
15KP78A	78	10	86.7	95.80	5	126	119	0.102
15KP85	85	10	94.4	115.00	5	152	99	0.108
15KP85A	85	10	94.4	104.00	5	137	109	0.103
15KP90	90	10	100	122.00	5	160	94	0.108
15KP90A	90	10	100	111.00	5	146	103	0.103
15KP100	100	10	111	136.00	5	179	84	0.109
15KP100A	100	10	111	123.00	5	162	93	0.103
15KP110	110	10	122	149.00	5	196	77	0.108
15KP110A	110	10	122	135.00	5	178	84	0.104
15KP120	120	10	133	163.00	5	214	70	0.109
15KP120A	120	10	133	147.00	5	193	78	0.104
15KP130	130	10	144	176.00	5	231	65	0.109
15KP130A	130	10	144	159.00	5	209	72	0.104
15KP150	150	10	167	204.00	5	268	56	0.109
15KP150A	150	10	167	185.00	5	243	62	0.104
15KP160	160	10	178	218.00	5	287	52	0.109
15KP160A	160	10	178	197.00	5	259	56	0.124
15KP170	170	10	189	231.00	5	304	49	0.109
15KP170A	170	10	189	209.00	5	275	55	0.104
15KP180	180	10	200	244.00	5	321	47	0.109
15KP180A	180	10	200	222.00	5	291	52	0.104
15KP200	200	10	222	272.00	5	356	42	0.109
15KP200A	200	10	222	247.00	5	322	47	0.104
15KP220	220	10	245	299.00	5	393	36	0.109
15KP220A	220	10	245	271.00	5	356	42	0.104

NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C
NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE
 ♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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**15KP SERIES 15000 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

FIGURE 1A - TYPICAL JUNCTION CAPACITANCE

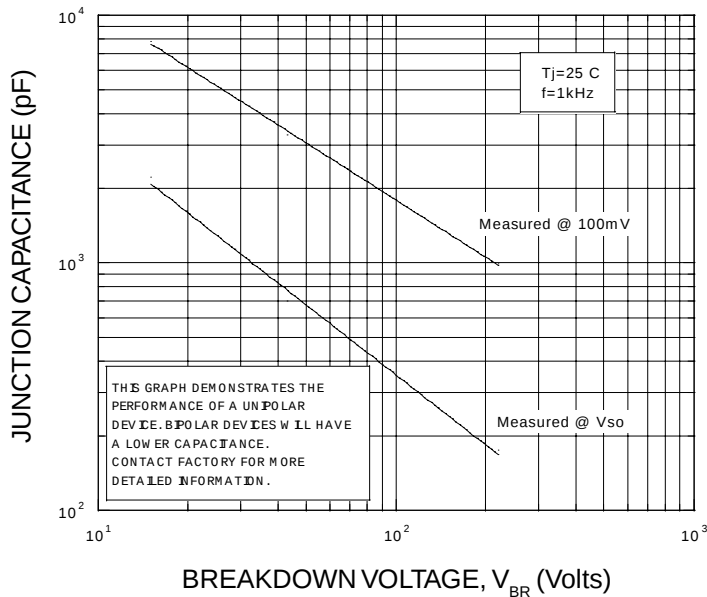


FIGURE 2A - PULSE WAVEFORM

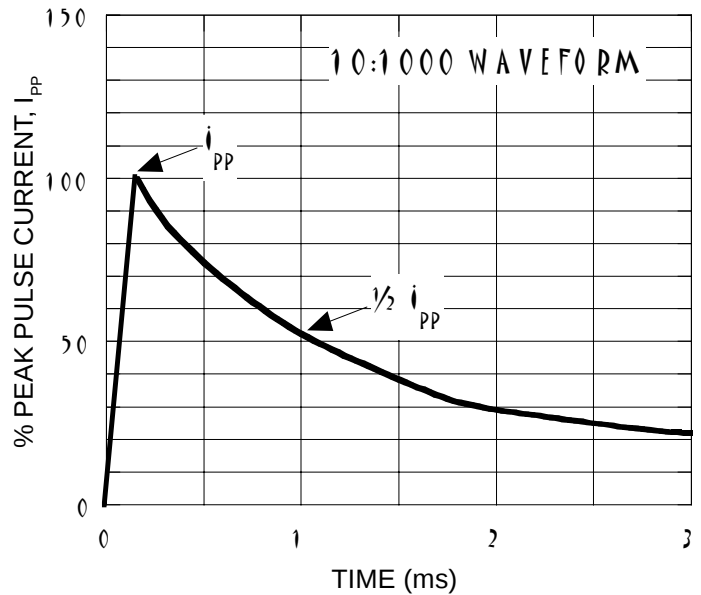
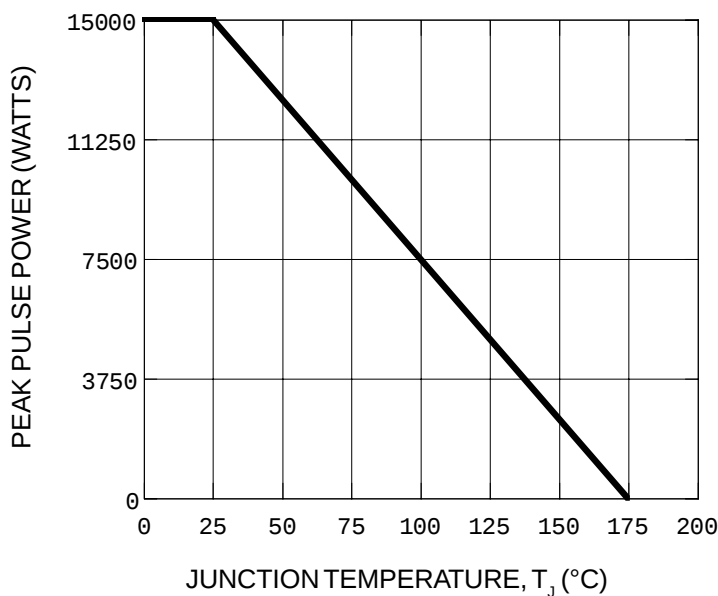
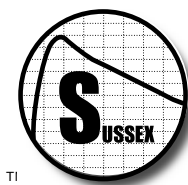


FIGURE 3A - PULSE DERATING CURVE



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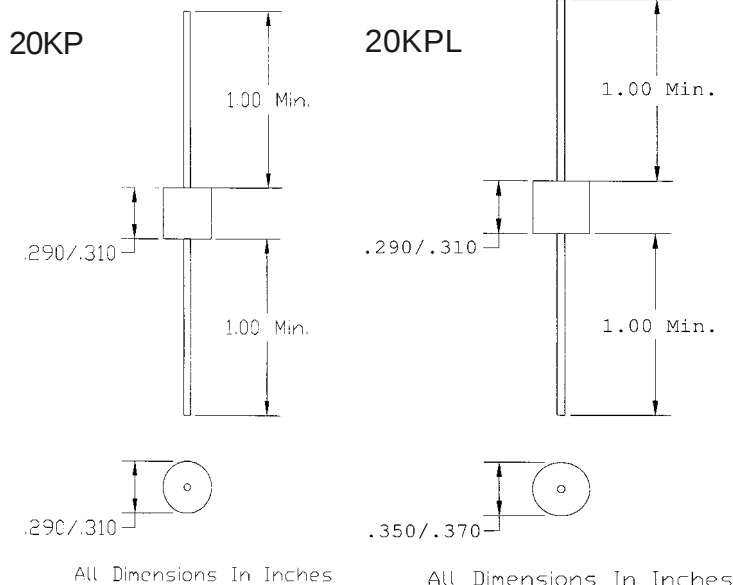
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**20KP SERIES 20000 WATT
TRANSIENT SUPPRESSORS**

20KP SERIES TRANSIENT SUPPRESSORS

VOLTAGES - 26 TO 440 VOLTS

20,000 WATT MAXIMUM POWER DISSIPATION



Two package sizes are available for your convenience. The "L" version is the industry standard size package for the 20KP. Our 20KP version is to save space in your application.

20KP SERIES DEVICE SPECIFICATIONS

- ◆ Built With Sussex Glass Passivated Dies
- ◆ Available as Uni- and Bi-Directional
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Operating Temperature: -55 to 175°C
- ◆ Storage Temperature: -55 to 175°C
- ◆ Available as Unipolar and Bipolar
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band on Unipolar Types
- ◆ Solvent Resistant Marking
- ◆ Silver Plated Leads, Solderable Per MIL-STD-750

CUSTOM ORDERING SPECIFIER

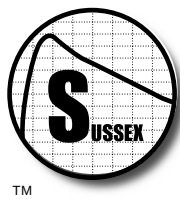
DIE SPECIFICATIONS

20KP

DEVICE PART
NUMBER

STANDOFF
VOLTAGE
(V_{SO})

- ◆ BLANK INDICATES UNIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ A INDICATES UNIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}
- ◆ C INDICATES BIPOLAR
DEVICE $\pm 10\%$ ON V_{BR}
- ◆ CA INDICATES BIPOLAR
DEVICE $\pm 5\%$ ON V_{BR}



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**20KP SERIES 20,000 WATT
TRANSIENT SUPPRESSOR
SPECIFICATIONS CONTINUED**

TABLE 7A - 20KP SERIES 20000 WATT TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS (NOTE 1)

SUSSEX PART NUMBERS 20000 WATT 20KPSERIES	STANDOFF	MAX. REVERSE LEAKAGE (I _R)@ V _{SO} (NOTE 2) μ A	REVERSE BREAKDOWN VOLTAGE (V _{BR}) @ I _T		TEST CURRENT (I _T) m A	MAX. CLAMPING VOLTAGE (V _{CL}) @ PEAK PULSE CURRENT (I _{PP}) (NOTE 3)		IPP (8 X 20) A m p s
	VOLTAGE (V _{SO}) V o l t s		MIN. V o l t s	MAX. V o l t s		V _{CL} V o l t s	I _{PP} A m p s	
20KP26	26	10	28.9	35.3	5.0	46.6	429.2	3863
20KP26A	26	10	28.9	31.9	5.0	42.1	475.1	4276
20KP28	28	10	31.1	38.0	5.0	50.1	399.2	3593
20KP28A	28	10	31.1	34.4	5.0	45.4	440.5	3965
20KP30	30	10	33.3	40.7	5.0	53.5	373.8	3364
20KP30A	30	10	33.3	36.8	5.0	48.4	413.2	3719
20KP33	33	10	36.7	44.9	5.0	59.0	339.0	3051
20KP33A	33	10	36.7	40.6	5.0	53.3	375.2	3377
20KP36	36	10	40.0	48.9	5.0	64.3	311.0	2799
20KP36A	36	10	40.0	44.2	5.0	58.1	344.2	3098
20KP40	40	10	44.4	54.3	5.0	71.4	280.1	2521
20KP40A	40	10	44.4	49.1	5.0	64.5	310.1	2791
20KP43	43	10	47.8	58.4	5.0	76.7	260.8	2347
20KP43A	43	10	47.8	52.8	5.0	69.4	288.2	2594
20KP45	45	10	50.0	61.1	5.0	80.3	249.1	2242
20KP45A	45	10	50.0	55.3	5.0	72.7	275.1	2476
20KP48	48	10	53.3	65.2	5.0	85.5	233.9	2105
20KP48A	48	10	53.3	58.9	5.0	77.4	258.4	2326
20KP51	51	10	56.1	69.3	5.0	91.1	219.5	1976
20KP51A	51	10	56.7	62.7	5.0	82.4	242.7	2184
20KP54	54	10	60.0	73.3	5.0	96.3	207.7	1869
20KP54A	54	10	60.0	66.3	5.0	87.1	229.6	2067
20KP58	58	10	64.4	78.7	5.0	103.0	194.2	1748
20KP58A	58	10	64.4	71.2	5.0	94.0	212.8	1915
20KP60	60	10	66.7	81.5	5.0	107.0	186.9	1682
20KP60A	60	10	66.7	73.7	5.0	97.0	206.2	1856
20KP64	64	10	71.1	96.9	5.0	114.0	175.4	1579
20KP64A	64	10	71.1	78.6	5.0	103.0	194.2	1748
20KP70	70	10	77.6	95.1	5.0	125.0	160.0	1440
20KP70A	70	10	77.8	86.0	5.0	113.0	177.0	1593
20KP75	75	10	83.3	102.0	5.0	134.0	149.3	1343
20KP75A	75	10	83.3	92.1	5.0	121.0	165.3	1488
20KP78	78	10	86.7	106.0	5.0	139.0	143.9	1295
20KP78A	78	10	86.7	95.8	5.0	126.0	158.7	1429
20KP85	85	10	94.4	115.0	5.0	151.0	132.5	1192
20KP85A	85	10	94.4	104.0	5.0	137.0	146.0	1314
20KP90	90	10	100	122.0	5.0	160.0	125.0	1125
20KP90A	90	10	100	111.0	5.0	146.0	137.0	1233
20KP100	100	10	111	136.0	5.0	179.0	111.7	1006
20KP100A	100	10	111	123.0	5.0	162.0	123.5	1111
20KP110	110	10	122	149.0	5.0	196.0	102.0	918
20KP110A	110	10	122	135.0	5.0	177.0	113.0	1017
20KP120	120	10	133	163.0	5.0	214.0	93.5	841
20KP120A	120	10	133	148.0	5.0	194.0	103.1	928
20KP160	160	10	177	217.0	5.0	285.0	70.2	632
20KP160A	160	10	177	197.0	5.0	259.0	77.2	695
20KP180	180	10	199	244.0	5.0	321.0	62.3	561
20KP180A	180	10	199	222.0	5.0	291.0	68.7	619
20KP200	200	10	222	272.0	5.0	356.0	56.2	506
20KP200A	200	10	222	247.0	5.0	323.0	61.9	557
20KP220	220	10	244	299.0	5.0	392.0	51.0	459
20KP220A	220	10	244	271.0	5.0	356.0	56.2	506
20KP250	250	10	277	340.0	5.0	445.0	44.9	404
20KP250A	250	10	277	308.0	5.0	404.0	49.5	446
20KP320	320	10	355	435.0	5.0	570.0	35.1	316
20KP320A	320	10	355	395.0	5.0	517.0	38.7	348
20KP360	360	10	399	489.0	5.0	641.0	31.2	281
20KP360A	360	10	399	444.0	5.0	582.0	34.4	309
20KP400	400	10	443	543.0	5.0	712.0	28.1	253
20KP400A	400	10	443	493.0	5.0	647.0	30.9	278
20KP440	440	10	488	598.0	5.0	784.0	25.5	230
20KP440A	440	10	488	543.0	5.0	711.0	28.1	253

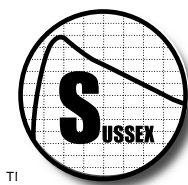
NOTES

NOTE 1: ♦ ELECTRICAL CHARACTERISTICS ARE AT A JUNCTION TEMPERATURE (T_J) OF 25°C

NOTE 2: ♦ FOR BIPOLAR DEVICES WITH A V_{BR} OF 10 VOLTS OR LESS, THE I_R LIMIT IS DOUBLED

NOTE 3: ♦ SURGE CURRENT WAVEFORM SHOWN IN FIGURE 2A ON PAGE

♦ PEAK PULSE POWER DERATING SHOWN IN FIGURE 3A ON PAGE



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AX-4

The new AX-4 series of high current transient suppressors have been specifically designed for use in **A.C. Line Protection**.

Features:

- Glass Passivated Junction
- Bidirectional
- Multijunction
- Low Clamping Voltage
- Sharp Breakdown Voltage
- Low Slope Resistance
- Three Available devices with V_{BR} 65V, 200V and 220V

**UL
APPROVED**

Maximum Ratings:

- Current Rating (I_{pp}) 6kA (See Note 1)
- Maximum Junction Temperature is 150°C
- Storage Temperature -55°C to 175°C
- Max Clamping of 330V_{CL}
- Rated I_{pp} measured with 8 x 20 μsec pulse
- Standoff measured V_{SO} at 80% V_{BR}

Mechanical Characteristics:

- Molded plastic case
- Axial lead terminals (solderable per MIL-STD-202 Method 208)
- Device code and logo marked on every device

**For Additional Information See Charts and Graphs
Or Call Factory at (239) 768-6800**

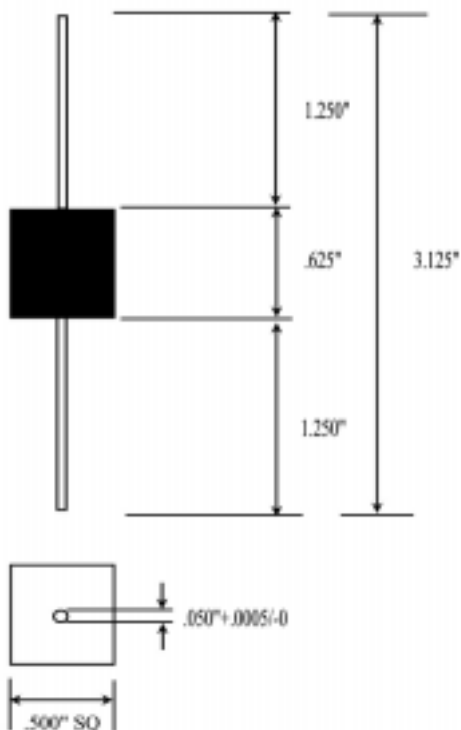
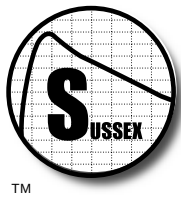


TABLE 17A - AX-4 SERIES TRANSIENT SUPPRESSOR ELECTRICAL SPECIFICATIONS

SUSSEX PART NUMBERS	STANDOFF VOLTAGE (V_{SO}) Volts	MAX. REVERSE LEAKAGE (I_R)@ V_{SO} μA	REVERSE BREAKDOWN VOLTAGE (V_{BR}) @ I_T		TEST CURRENT (I_T) mA	MAX. CLAMPING VOLTAGE (V_{CL}) @ PEAK PULSE CURRENT (I_{PP}) (NOTE 1)		MAX. TEMP. COEFFICIENT OF V_{BR} (%/°C)	MAX. Capacitance 0 Bias 10k Hz (nF)
			MIN. Volts	MAX. Volts		V_{CL} Volts	I_{PP} Amps		
AX4-65	58	20	64	70	10	115	6000	0.100	6.5
AX4-200	170	20	180	220	10	300	6000	0.100	2.5
AX4-220	190	20	200	245	10	330	6000	0.100	2.2

Note 1: Pulse repitition rate is greater than 2 minutes between pulses.

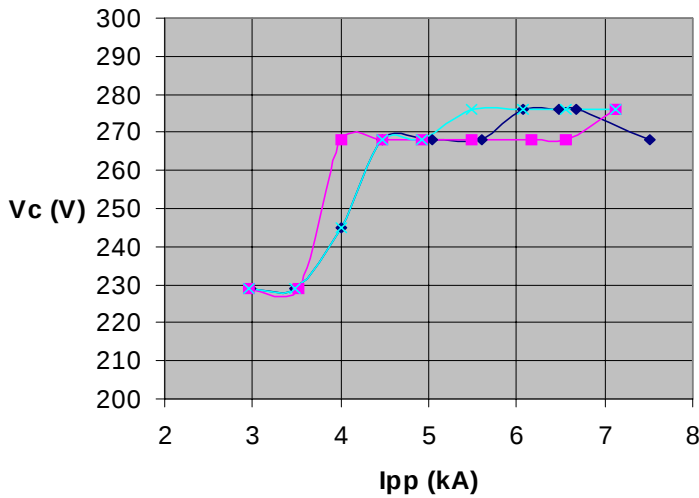


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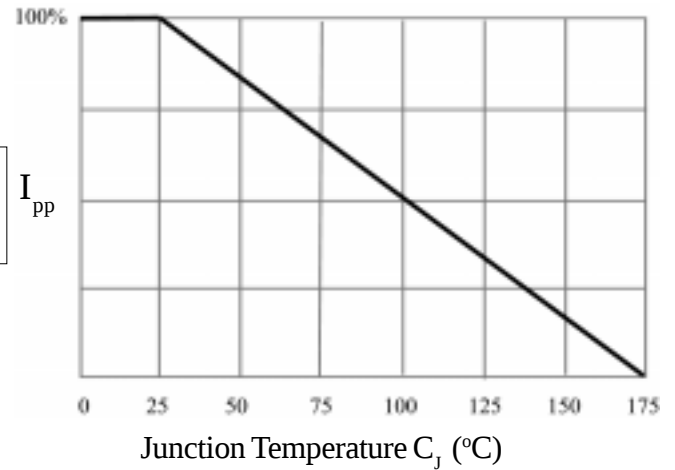
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AX-4

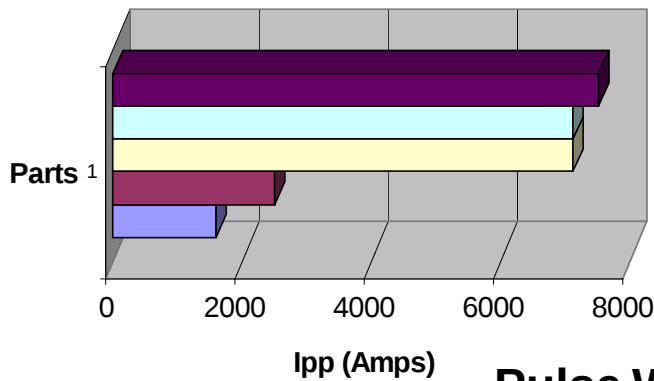
Typical Sussex AX-4



Pulse Derating Curve

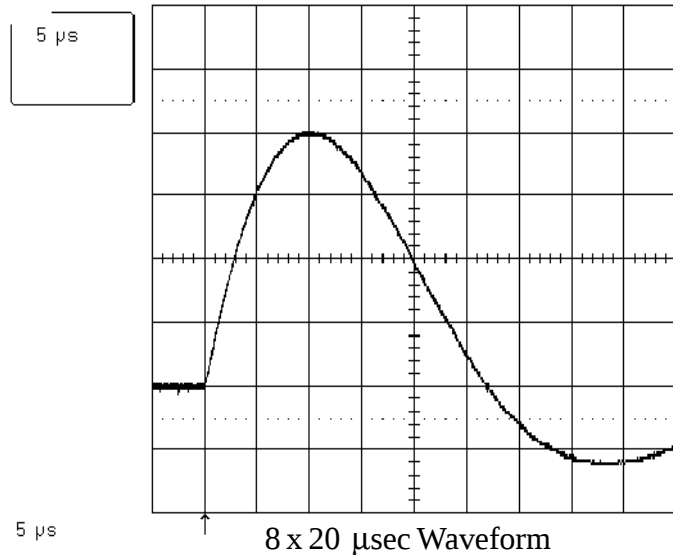


Typical AX-4/5KPL/5KPS



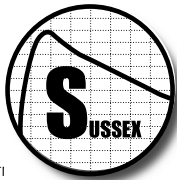
- AX4 @ 200V Nominal
- AX4 @ 200V Nominal
- AX4 @ 200V Nominal
- 5KPL @ 25V Nominal
- 5KPS @ 25V Nominal

Pulse Waveform



Disclaimer:

Sussex Semiconductor, Inc believes that the information contained in this publication is an accurate description of the typical characteristics. However, it is your responsibility to thoroughly test the product in your specific application to determine its performance, efficacy and safety.

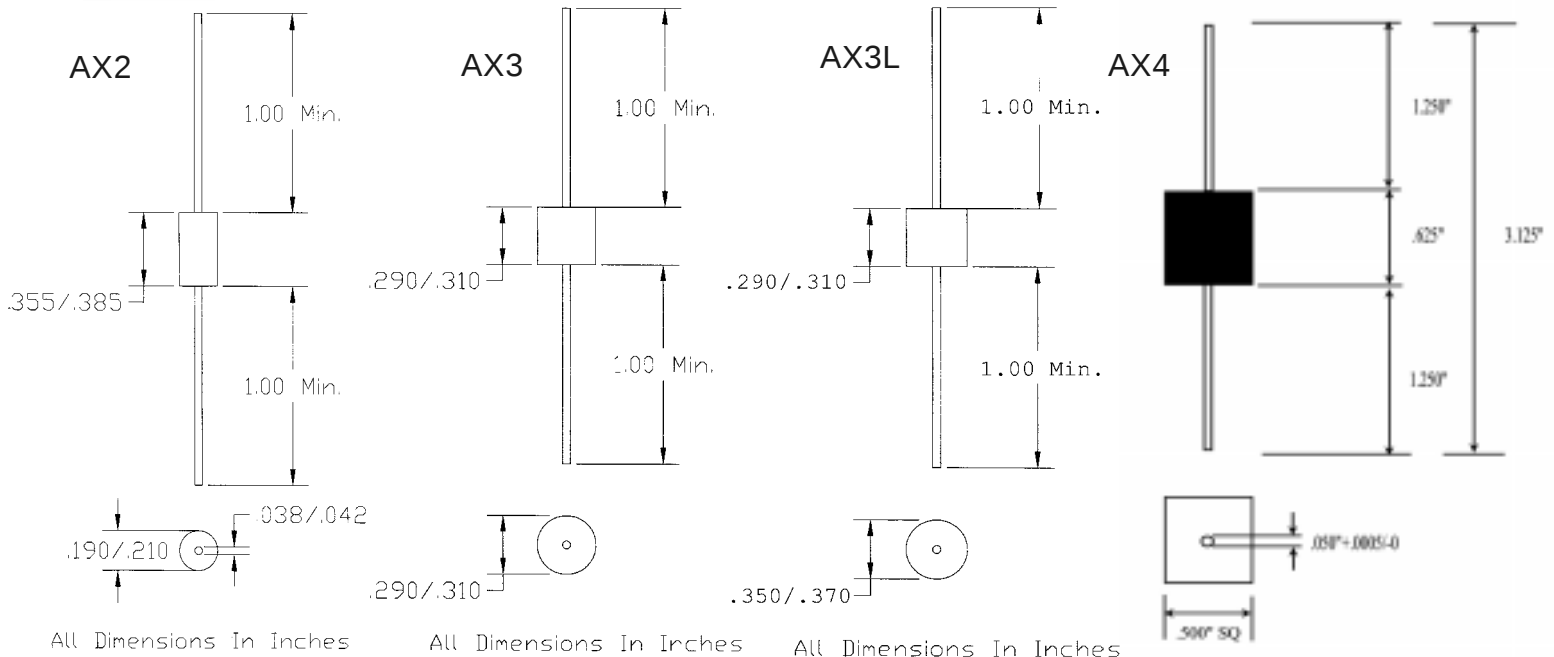


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CUSTOM AXIAL TRANSIENT SUPPRESSOR SPECIFICATIONS GUIDE

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CUSTOM AXIAL TRANSIENT SUPPRESSOR SPECIFICATIONS GUIDE



AXIAL LEAD SPECIFICATIONS

- ◆ Built Using Sussex Glass Passivated Dies
- ◆ Each Device Individually Inspected
- ◆ Molded Epoxy Package
- ◆ Operating Temperature: -65 to 175°C
- ◆ Storage Temperature: -65 to 175°C
- ◆ Marked With Sussex Logo, Part Number, and Cathode Band on Unipolar Types
- ◆ Solvent Resistant Marking
- ◆ Plated Leads, Solderable Per MIL-STD-750

**** To decide what axial lead device is right for you, choose the size of the axial lead which best suits your application. Then go to the Chips and Cells section of the catalog/web and pick out the chip which will best suit your needs. Which size do you use? See the list below under DEVICE SIZES and for each coded axial type is a particular range of chips that fit in that package. Can't find what you need exactly, call our sales team and we can help you decide in no time.****

CUSTOM ORDERING SPECIFIER

AX2 - SZU 16 - 64 - 88 - 3 -

DIE SIZE

DIE SPECIFICATIONS

FOR MULTI-CHIP
ASSEMBLY
CONTACT FACTORY

DEVICE SIZES	
CODE	CHIP SIZES
AX2	3-16
AX3	16-35
AX3L	40
AX4	contact factory

POLARITY CODE	
CODE	POLARITY
SZU	UNIPOLAR
SZZ	BIPOLAR
SZ	ZENER
S	RECTIFIER

TVS: REVERSE BREAKDOWN VOLTAGE (V_{BR})
ZENER: NOMINAL ZENER VOLTAGE (V_Z)
RECTIFIER: PIV

TVS: CLAMPING VOLTAGE (V_{CL})
ZENER: %TOLERANCE
RECTIFIER: trr

FOR INFORMATION REGARDING SUSSEX SEMICONDUCTOR DIES SEE OUR CHIPS AND CELLS CATALOG

TVS: %TOLERANCE
ZENER: TEST CURRENT (mA)