

15 KW TRANSIENT SUPPRESSION MODULES 15KS17 THRU 15KS280A

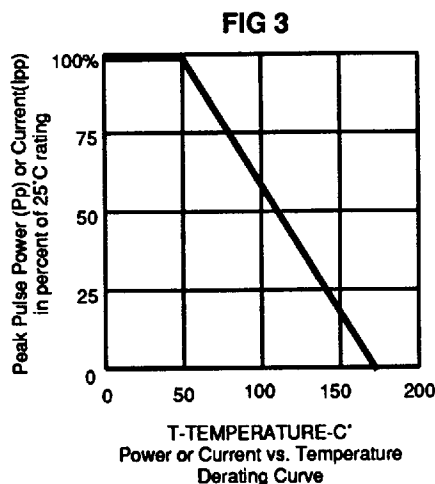
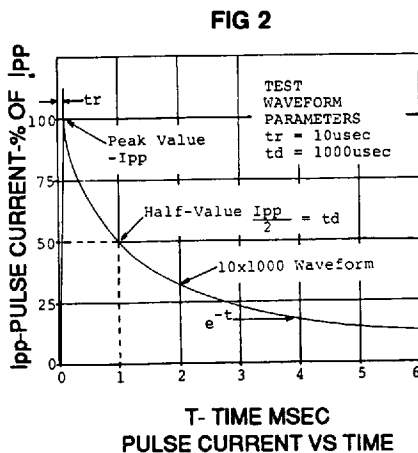
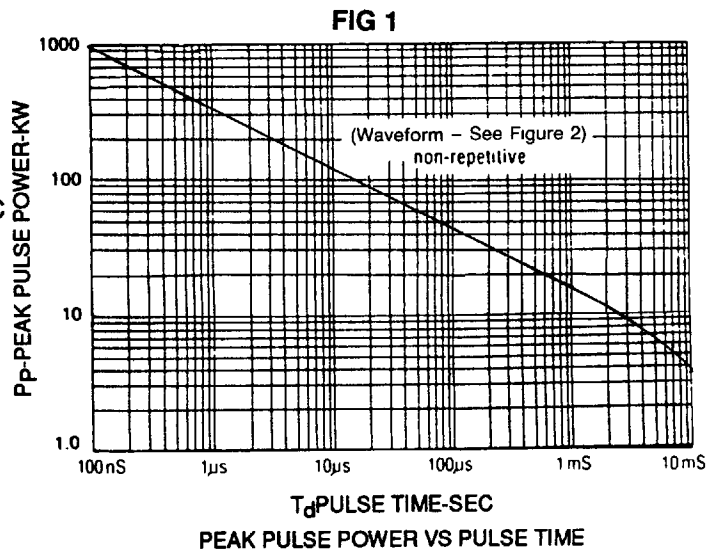
15000 Watts (Peak - 1msec) 17 thru 280 volts

The Semicon 15KS series of transient suppressor diodes are designed to protect electronic equipment from failure due to voltage transients. In addition they are intended to perform as voltage clamps under sustained over voltage stress until slower forms of conventional fusing open the circuit. Their initial failure mode under sustained avalanche current overload is short circuit. Their avalanche characteristics coupled with special internal design for rapid junction cooling under pulse power stress makes them most useful in airborne, telephone and other equipments where large transients are frequent.

The inherent fast response of these devices and broad choice of stand-off voltage ratings enables the designer to protect a wide range of both active and passive circuit components which may be damaged by voltage transients.

MAXIMUM RATINGS:

- 15,000 watts of Peak Pulse Power @ 1ms dissipation at 25°C
- t_{clamping} (0 volts to BV min): Less than 1×10^{-12}
- Operating and Storage temperature: -55°C to + 150°C
- Steady State power dissipation: 7.0 watts @ $T_A = 25^\circ\text{C}$
- Repetition rate (duty cycle): .05%
- Peak Power (Fig. 1)
- Pulse Wave Form (Fig. 2)
- Power Derating (Fig. 3)



(See Figure 1 for Peak Pulse vs Pulse Time Characteristics)

ELECTRICAL CHARACTERISTICS at 25°C

SEMICON PART NUMBER	REVERSE STAND-OFF VOLTAGE V _R VOLTS	(Note1) BREAKDOWN VOLTAGE @ BV VOLTS		I _T mA	MAXIMUM CLAMPING VOLTAGE @ I _{pp} (1mSEC) V _C VOLTS	MAXIMUM REVERSE LEAKAGE @ V _R I _{RT} μA	MAXIMUM PEAK PULSE CURRENT I _{PP} A	MAXIMUM TEMPERATURE COEFFICIENT OF BV MV/°C
15KS17	17	18.9 - 23.1	50	32.3	5000	484	19	
15KS17A	17	18.9 - 20.9	50	29.3	5000	512	17	
15KS18	18	20.0 - 24.4	50	34.2	5000	439	20	
15KS18A	18	20.0 - 22.1	50	30.9	5000	485	18	
15KS20	20	22.2 - 27.1	20	37.9	1500	396	24	
15KS20A	20	22.2 - 24.5	20	34.3	1500	437	21	
15KS22	22	24.4 - 29.8	10	41.1	500	365	27	
15KS22A	22	24.4 - 26.9	10	37.1	500	404	24	
15KS24	24	26.7 - 32.6	5	45.0	150	333	30	
15KS24A	24	26.7 - 29.5	5	40.7	150	369	27	
15KS26	26	28.9 - 35.3	5	48.7	50	308	32	
15KS26A	26	28.9 - 31.9	5	44.0	50	341	29	
15KS28	28	31.1 - 38.0	5	52.4	25	286	35	
15KS28A	28	31.1 - 34.4	5	47.5	25	316	31	
15KS30	30	33.3 - 40.7	5	56.2	15	267	27	
15KS30A	30	33.3 - 36.8	5	50.7	15	296	34	
15KS33	33	36.7 - 44.9	5	60.6	10	248	42	
15KS33A	33	36.7 - 40.6	5	54.8	10	274	38	
15KS36	36	40.0 - 48.9	5	66.0	10	227	46	
15KS36A	36	40.0 - 44.2	5	59.7	10	251	41	
15KS40	40	44.4 - 54.3	5	72.8	10	206	51	
15KS40A	40	44.4 - 49.1	5	65.8	10	228	46	
15KS43	43	47.8 - 58.4	5	77.1	10	195	55	
15KS43A	43	47.8 - 52.8	5	69.7	10	215	50	
15KS45	45	50.0 - 61.1	5	80.7	10	186	57	
15KS45A	45	50.0 - 55.3	5	73.0	10	205	52	
15KS48	48	53.3 - 65.1	5	85.9	10	175	62	
15KS48A	48	53.3 - 58.9	5	77.7	10	193	56	
15KS51	51	56.7 - 69.3	5	91.5	10	164	66	
15KS51A	51	56.7 - 62.7	5	82.8	10	181	60	
15KS54	54	60.0 - 73.3	5	96.8	10	155	70	
15KS54A	54	60.0 - 66.3	5	87.5	10	171	63	
15KS58	58	64.4 - 78.7	5	104.0	10	144	76	
15KS58A	58	64.4 - 71.2	5	94.0	10	160	68	
15KS60	60	66.7 - 81.5	5	107.0	10	140	78	
15KS60A	60	66.7 - 73.7	5	97.3	10	154	71	
15KS64	64	71.1 - 86.9	5	115	10	130	84	
15KS64A	64	71.1 - 78.6	5	104	10	144	76	
15KS70	70	77.8 - 95.1	5	126	10	119	92	
15KS70A	70	77.8 - 86.0	5	114	10	132	83	
15KS75	75	83.3 - 102.0	5	135	10	111	100	
15KS75A	75	83.3 - 92.1	5	122	10	123	89	
15KS78	78	86.7 - 106.0	5	140	10	107	104	
15KS78A	78	86.7 - 95.8	5	126	10	119	93	
15KS85	85	94.4 - 115	5	152	10	99	113	
15KS85A	85	94.4 - 104	5	137	10	109	102	
15KS90	90	100.0 - 122	5	160	10	94	120	
15KS90A	90	100.0 - 111	5	146	10	103	109	
15KS100	100	111 - 136	5	179	10	84	134	
15KS100A	100	111 - 123	5	162	10	93	121	
15KS110	110	122 - 149	5	196	10	77	147	
15KS110A	110	122 - 135	5	178	10	84	133	
15KS120	120	133 - 163	5	214	10	70	161	
15KS120A	120	133 - 147	5	193	10	78	145	
15KS130	130	144 - 176	5	231	10	65	174	
15KS130A	130	144 - 159	5	209	10	72	157	
15KS150	150	167 - 204	5	268	10	56	202	
15KS150A	150	167 - 185	5	243	10	62	183	
15KS160	160	178 - 218	5	287	10	52	216	
15KS160A	160	178 - 197	5	259	10	58	195	
15KS170	170	189 - 231	5	304	10	49	229	
15KS170A	170	189 - 209	5	275	10	55	207	
15KS180	180	200 - 244	5	321	10	47	242	
15KS180A	180	200 - 221	5	291	10	52	219	
15KS200	200	222 - 271	5	356	10	42	269	
15KS200A	200	222 - 245	5	322	10	47	243	
15KS220	220	245 - 299	5	393	10	38	297	
15KS220A	220	245 - 271	5	356	10	42	269	
15KS240	240	267 - 326	5	428	10	35	324	
15KS240A	240	267 - 295	5	388	10	39	293	
15KS260	260	289 - 353	5	464	10	32	352	
15KS260A	260	289 - 319	5	419	10	36	317	
15KS280	280	311 - 380	5	500	10	30	378	
15KS280A	280	311 - 344	5	452	10	33	342	

V_f = 7.5 V @ 200A, 8.3 msec/ 1/2 sine wave

Note 1: 15KS Series is normally selected according to the reverse "Stand Off Voltage" (V_R) which should be equal to or greater than the DC or continuous peak operating voltage level.