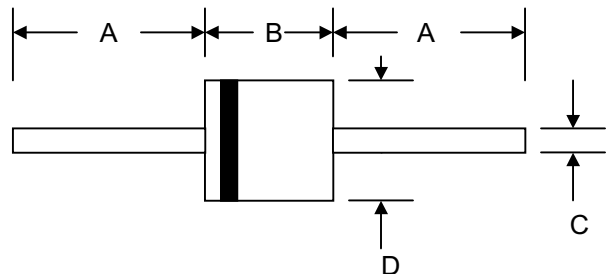


Data Sheet 1247 Rev. D

Features

- Glass Passivated Die Construction
- 3000W Peak Pulse Power Dissipation
- 5.0V – 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- UL Recognized File # E224235



Mechanical Data

- Case: JEDEC P-600 Molded Plastic
- Terminals: Axial Leads, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking:
Unidirectional – Device Code and Cathode Band
Bidirectional – Device Code Only
- Weight: 2.10 grams (approx.)

P-600				
Dim	Min	Max	Min	Max
A	25.4	—	1.000	—
B	8.60	9.10	0.339	0.358
C	1.20	1.30	0.047	0.051
D	8.60	9.10	0.339	0.358
	In ,mm		In inch	

“C” Suffix Designates Bi-directional Devices
 “A” Suffix Designates 5% Tolerance Devices
 No Suffix Designates 10% Tolerance Devices

Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation at $T_A = 25^\circ\text{C}$ (Note 1, 2, 5) Figure 1	PPPM	3000	W
Peak Forward Surge Current per Figure 6 (Note 3)	IFSM	250	A
Peak Pulse Current on 10/1000 μS Waveform (Note 1) Figure 3	I _{PPM}	See Table 1	A
Steady State Power Dissipation (Note 2, 4)	PM(AV)	8.0	W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +175	$^\circ\text{C}$

- Note: 1. Non-repetitive current pulse, per Figure 3 and derated above $T_A = 25^\circ\text{C}$ per Figure 2
 2. Mounted on 20mm² copper pad
 3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum
 4. Lead temperature at $75^\circ\text{C} = T_L$
 5. Peak pulse power waveform is 10/1000 μS

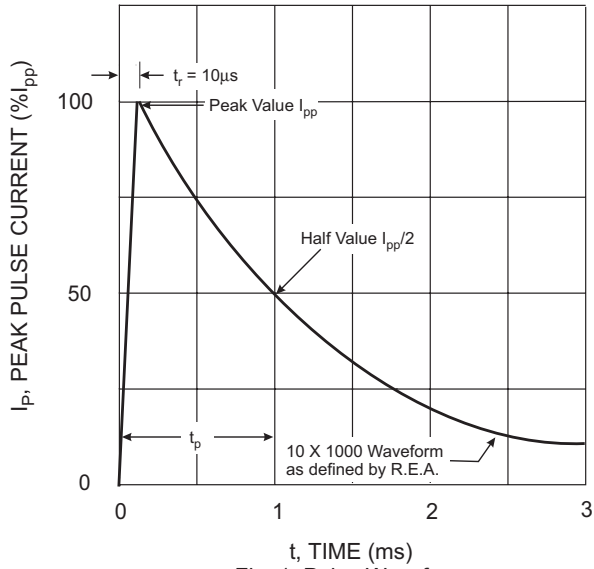


Fig. 1 Pulse Waveform

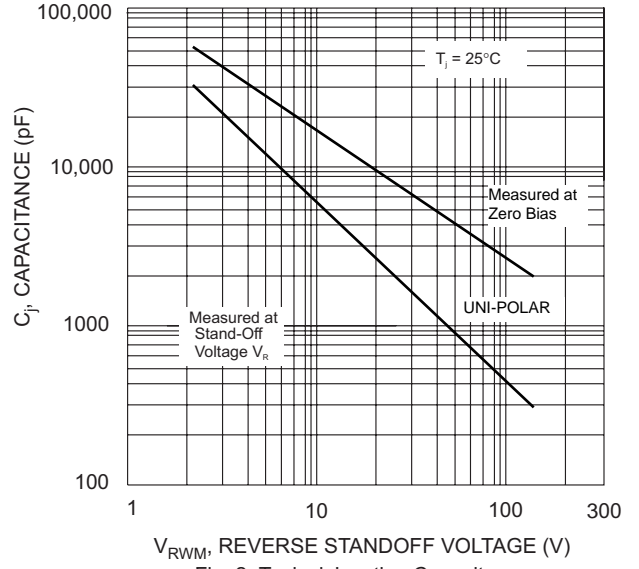


Fig. 2 Typical Junction Capacitance

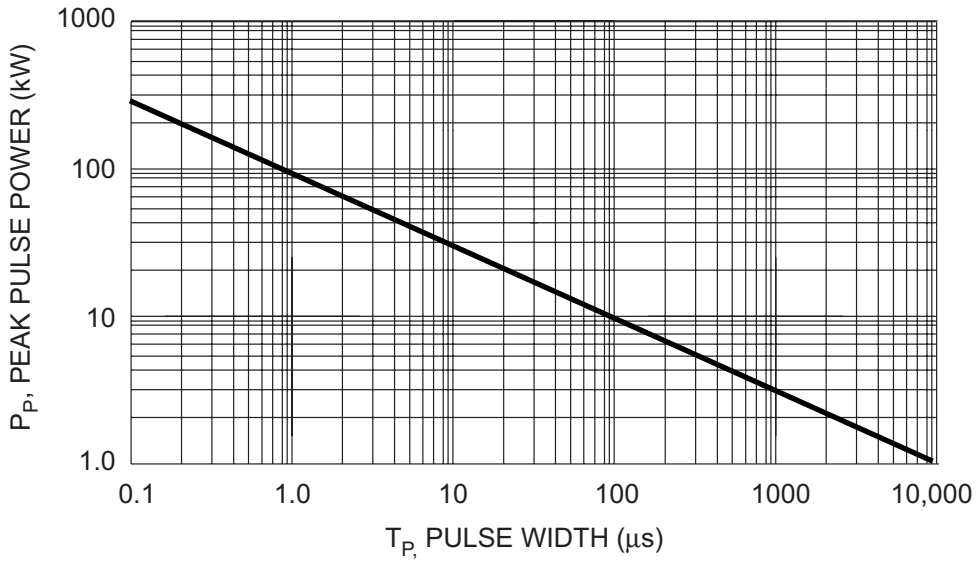


Fig. 3 Pulse Derating Curve

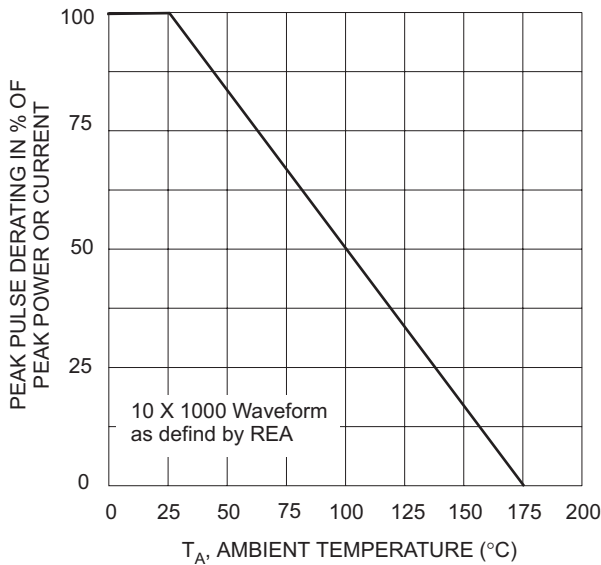


Fig. 4 Pulse Derating Curve

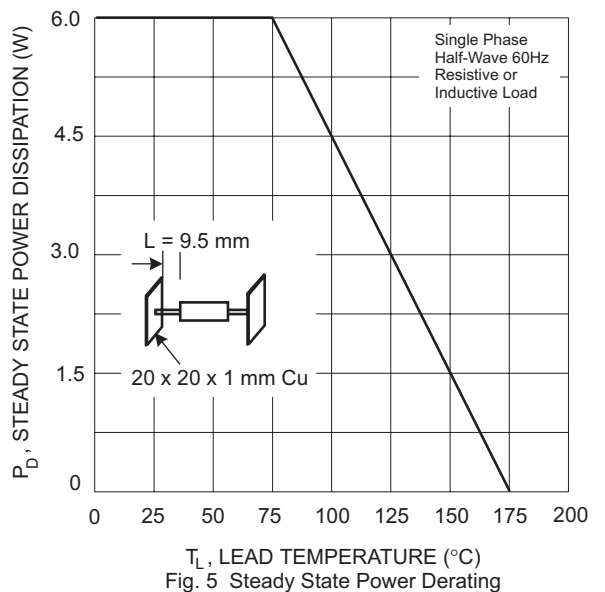


Fig. 5 Steady State Power Derating

UNI-DIRECTIONAL 3000 WATT AXIAL LEAD TVS

UNI-DIRECTIONAL PART NUMBER	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
3KP5.0	5	6.4	7.82	10	9.6	312.5	1000
3KP5.0A	5	6.4	7.07	10	9.2	326	1000
3KP6.0	6	6.67	8.15	10	11.4	263.2	1000
3KP6.0A	6	6.67	7.37	10	10.3	291.3	1000
3KP6.5	6.5	7.22	8.82	10	12.3	243.9	500
3KP6.5A	6.5	7.22	7.98	10	11.2	267.9	500
3KP7.0	7	7.78	9.51	10	13.3	225.6	200
3KP7.0A	7	7.78	8.60	10	12	250	200
3KP7.5	7.5	8.33	10.18	1	14.3	209.8	100
3KP7.5A	7.5	8.33	9.21	1	12.9	232.6	100
3KP8.0	8	8.99	10.99	1	15	220	50
3KP8.0A	8	8.99	9.94	1	13.6	220.6	50
3KP8.5	8.5	9.44	11.54	1	15.9	188.8	25
3KP8.5A	8.5	9.44	10.43	1	14.4	208.4	25
3KP9.0	9	10	12.22	1	16.9	177.4	10
3KP9.0A	9	10	11.05	1	15.4	194.8	10
3KP10	10	11.1	13.57	1	18.8	159.6	5
3KP10A	10	11.1	12.27	1	17	176.4	5
3KP11	11	12.2	14.91	1	20.1	149.2	5
3KP11A	11	12.2	13.48	1	18.2	184.8	5
3KP12	12	13.3	16.26	1	22	136.4	5
3KP12A	12	13.3	14.70	1	19.9	150.6	5
3KP13	13	14.4	17.60	1	23.8	126	5
3KP13A	13	14.4	15.92	1	21.5	139.4	5
3KP14	14	15.6	19.07	1	25.8	116.2	5
3KP14A	14	15.6	17.24	1	23.2	129.4	5
3KP15	15	16.7	20.41	1	26.9	111.6	5
3KP15A	15	16.7	18.46	1	24.4	123	5
3KP16	16	17.8	21.76	1	28.8	104.2	5
3KP16A	16	17.8	19.67	1	26	115.4	5
3KP17	17	18.9	23.10	1	30.5	98.4	5
3KP17A	17	18.9	20.89	1	27.6	106.6	5
3KP18	18	20	24.44	1	32.2	93.2	5
3KP18A	18	20	22.11	1	29.2	102.8	5
3KP20	20	22.2	27.13	1	35.8	83.8	5
3KP20A	20	22.2	24.54	1	32.4	92.6	5
3KP22	22	24.4	29.82	1	39.4	76.2	5
3KP22A	22	24.4	26.97	1	35.5	84.4	5
3KP24	24	26.7	32.63	1	43	69.8	5
3KP24A	24	26.7	29.51	1	38.9	77.2	5
3KP26	26	28.9	35.32	1	46.6	64.4	5
3KP26A	26	28.9	31.94	1	42.1	71.2	5
3KP28	28	31.1	38.01	1	50	60	5
3KP28A	28	31.1	34.37	1	45.4	66	5
3KP30	30	33.3	40.70	1	53.5	56	5
3KP30A	30	33.3	36.81	1	48.4	62	5
3KP33	33	36.7	44.86	1	59	50.4	5
3KP33A	33	36.7	40.56	1	53.3	56.2	5
3KP36	36	40	48.89	1	64.3	46.6	5
3KP36A	36	40	44.21	1	58.1	51.6	5
3KP40	40	44.4	54.27	1	71.4	42	5
3KP40A	40	44.4	49.07	1	64.5	46.4	5
3KP43	43	47.8	58.42	1	76.6	39.2	5
3KP43A	43	47.8	52.83	1	69.4	43.2	5
3KP45	45	50	61.11	1	80.3	37.4	5
3KP45A	45	50	55.26	1	72.7	41.2	5
3KP48	48	53.3	65.14	1	85.5	35	5
3KP48A	48	53.3	58.91	1	77.4	38.8	5
3KP51	51	56.7	69.30	1	91.1	37	5
3KP51A	51	56.7	62.67	1	82.4	36.4	5
3KP54	54	60	73.33	1	96.3	31.2	5
3KP54A	54	60	66.32	1	87.1	34.4	5
3KP58	58	64.4	78.71	1	103	29.2	5
3KP58A	58	64.4	78.71	1	93.6	32	5
3KP60	60	66.7	81.52	1	107	28	5
3KP60A	60	66.7	73.72	1	96.8	31	5
3KP64	64	71.1	86.90	1	114	26.4	5
3KP64A	64	71.1	86.90	1	103	29.2	5
3KP70	70	77.8	95.09	1	125	24	5
3KP70A	70	77.8	85.99	1	113	26.6	5
3KP75	75	83.3	101.81	1	134	22.4	5
3KP75A	75	83.3	101.81	1	121	24.8	5
3KP78	78	86.7	105.97	1	139	21.6	5
3KP78A	78	86.7	95.83	1	126	22.8	5
3KP85	85	94.4	115.38	1	151	19.8	5
3KP85A	85	94.4	115.38	1	137	20.8	5
3KP90	90	100	122.22	1	160	18.8	5
3KP90A	90	100	110.53	1	146	20.6	5
3KP100	100	111	135.67	1	179	16.6	5
3KP100A	100	111	135.67	1	162	18.6	5
3KP110	110	122	149.11	1	196	15.4	5
3KP110A	110	122	134.84	1	177	16.8	5
3KP120	120	133	162.56	1	214	14	5
3KP120A	120	133	147.00	1	193	15.6	5
3KP130	130	144	176.00	1	231	13	5
3KP130A	130	144	159.16	1	209	14.4	5
3KP150	150	167	204.11	1	269	11.2	5
3KP150A	150	167	184.58	1	243	12.4	5
3KP160	160	178	217.56	1	287	10.4	5
3KP160A	160	178	196.74	1	259	11.6	5
3KP170	170	189	231.00	1	304	9.8	5
3KP170A	170	189	208.99	1	275	11	5

BI-DIRECTIONAL 3000 WATT AXIAL LEAD TVS

BI-DIRECTIONAL PART NUMBER	REVERSE STAND-OFF VOLTAGE VRWM	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR
3KP5.0C	5	6.4	7.82	10	9.6	312.5	2000
3KP5.0CA	5	6.4	7.07	10	9.2	326	2000
3KP6.0C	6	6.67	8.15	10	11.4	263.2	2000
3KP6.0CA	6	6.67	7.37	10	10.3	291.3	2000
3KP6.5C	6.5	7.22	8.82	10	12.3	243.9	1000
3KP6.5CA	6.5	7.22	7.98	10	11.2	267.9	1000
3KP7.0C	7	7.78	9.51	10	13.3	225.6	400
3KP7.0CA	7	7.78	8.60	10	12	250	400
3KP7.5C	7.5	8.33	10.18	1	14.3	209.8	200
3KP7.5CA	7.5	8.33	9.21	1	12.9	232.6	200
3KP8.0C	8	8.99	10.99	1	15	220	100
3KP8.0CA	8	8.99	9.94	1	13.6	220.6	100
3KP8.5C	8.5	9.44	11.54	1	15.9	188.8	50
3KP8.5CA	8.5	9.44	10.43	1	14.4	208.4	50
3KP9.0C	9	10	12.22	1	16.9	177.4	20
3KP9.0CA	9	10	11.05	1	15.4	194.8	20
3KP10C	10	11.1	13.57	1	18.8	159.6	5
3KP10CA	10	11.1	12.27	1	17	176.4	5
3KP11C	11	12.2	14.91	1	20.1	149.2	5
3KP11CA	11	12.2	13.48	1	18.2	184.8	5
3KP12C	12	13.3	16.26	1	22	136.4	5
3KP12CA	12	13.3	14.70	1	19.9	150.6	5
3KP13C	13	14.4	17.60	1	23.8	126	5
3KP13CA	13	14.4	15.92	1	21.5	139.4	5
3KP14C	14	15.6	19.07	1	25.8	116.2	5
3KP14CA	14	15.6	17.24	1	23.2	129.4	5
3KP15C	15	16.7	20.41	1	26.9	111.6	5
3KP15CA	15	16.7	18.46	1	24.4	123	5
3KP16C	16	17.8	21.76	1	28.8	104.2	5
3KP16CA	16	17.8	19.67	1	26	115.4	5
3KP17C	17	18.9	23.10	1	30.5	98.4	5
3KP17CA	17	18.9	20.89	1	27.6	106.6	5
3KP18C	18	20	24.44	1	32.2	93.2	5
3KP18CA	18	20	22.11	1	29.2	102.8	5
3KP20C	20	22.2	27.13	1	35.8	83.8	5
3KP20CA	20	22.2	24.54	1	32.4	92.6	5
3KP22C	22	24.4	29.82	1	39.4	76.2	5
3KP22CA	22	24.4	26.97	1	35.5	84.4	5
3KP24C	24	26.7	32.63	1	43	69.8	5
3KP24CA	24	26.7	29.51	1	38.9	77.2	5
3KP26C	26	28.9	35.32	1	46.6	64.4	5
3KP26CA	26	28.9	31.94	1	42.1	71.2	5
3KP28C	28	31.1	38.01	1	50	60	5
3KP28CA	28	31.1	34.37	1	45.4	66	5
3KP30C	30	33.3	40.70	1	53.5	56	5
3KP30CA	30	33.3	36.81	1	48.4	62	5
3KP33C	33	36.7	44.86	1	59	50.4	5
3KP33CA	33	36.7	40.56	1	53.3	56.2	5
3KP36C	36	40	48.89	1	64.3	46.6	5
3KP36CA	36	40	44.21	1	58.1	51.6	5
3KP40C	40	44.4	54.27	1	71.4	42	5
3KP40CA	40	44.4	49.07	1	64.5	46.4	5
3KP43C	43	47.8	58.42	1	76.6	39.2	5
3KP43CA	43	47.8	52.83	1	69.4	43.2	5
3KP45C	45	50	61.11	1	80.3	37.4	5
3KP45CA	45	50	55.26	1	72.7	41.2	5
3KP48C	48	53.3	65.14	1	85.5	35	5
3KP48CA	48	53.3	58.91	1	77.4	38.8	5
3KP51C	51	56.7	69.30	1	91.1	37	5
3KP51CA	51	56.7	62.67	1	82.4	36.4	5
3KP54C	54	60	73.33	1	96.3	31.2	5
3KP54CA	54	60	66.32	1	87.1	34.4	5
3KP58C	58	64.4	78.71	1	103	29.2	5
3KP58CA	58	64.4	71.18	1	93.6	32	5
3KP60C	60	66.7	81.52	1	107	28	5
3KP60CA	60	66.7	73.72	1	96.8	31	5
3KP64C	64	71.1	86.90	1	114	26.4	5
3KP64CA	64	71.1	78.58	1	103	29.2	5
3KP70C	70	77.8	95.09	1	125	24	5
3KP70CA	70	77.8	85.99	1	113	26.6	5
3KP75C	75	83.3	101.81	1	134	22.4	5
3KP75CA	75	83.3	92.07	1	121	24.8	5
3KP78C	78	86.7	105.97	1	139	21.6	5
3KP78CA	78	86.7	95.83	1	126	22.8	5
3KP85C	85	94.4	115.38	1	151	19.8	5
3KP85CA	85	94.4	104.34	1	137	20.8	5
3KP90C	90	100	122.22	1	160	18.8	5
3KP90CA	90	100	110.53	1	146	20.6	5
3KP100C	100	111	135.67	1	179	16.6	5
3KP100CA	100	111	122.68	1	162	18.6	5
3KP110C	110	122	149.11	1	196	15.4	5
3KP110CA	110	122	134.84	1	177	16.8	5
3KP120C	120	133	162.56	1	214	14	5
3KP120CA	120	133	147.00	1	193	15.6	5
3KP130C	130	144	176.00	1	231	13	5
3KP130CA	130	144	159.16	1	209	14.4	5
3KP150C	150	167	204.11	1	269	11.2	5
3KP150CA	150	167	184.58	1	243	12.4	5
3KP160C	160	178	217.56	1	287	10.4	5
3KP160CA	160	178	196.74	1	259	11.6	5
3KP170C	170	189	231.00	1	304	9.8	5
3KP170CA	170	189	208.89	1	275	11	5

SENSITRON

SEMICONDUCTOR

DISCLAIMER:

1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).

2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.

3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.

4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.

5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.

6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.

7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.