

## 600W Transient Voltage Suppressors

### FEATURES

- Glass passivated junction
- 600W peak pulse power capability at 1.0ms
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: Typically  
< 1.0ps from 0 V to BV for uni-directional,  
5.0 ns for bidirectional
- Typical  $I_R$ : 1.0 $\mu$ A above 10V



### DO-15

COLOR BAND DENOTES CATHODE  
ON UNIDIRECTIONAL DEVICES ONLY. NO  
COLOR BAND ON BIDIRECTIONAL DEVICES.

### APPLICATIONS

- Devices for bipolar applications
- Bi-directional types use CA suffix
- Electrical characteristics apply in both directions

### ABSOLUTE MAXIMUM RATINGS

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation $t_p=1\text{ms}$	$P_{PPM}$	600	W
Peak pulse current	$I_{PPM}$	see table	A
Power dissipation .375 inch lead length at $T_A=75^\circ\text{C}$	$P_D$	5.0	W
Non-Repetitive Peak Forward Surge Current Superimposed on Rated Load (JEDEC Method) <sup>(1)</sup>	$I_{FSM}$	100	A
Junction temperature	$T_J$	-65 to +175	$^\circ\text{C}$
Storage temperature	$T_{STG}$	-65 to +175	$^\circ\text{C}$

#### Note:

1. Measured on 8.3ms single half-sine wave; duty cycle = 4 pulses per minute maximum.

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Uni-directional Bi-directional (C) Device	Reverse Stand-Off Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ (V)		Test Current $I_T$ (mA)	Clamping Voltage at $I_{PPM}$ $V_C$ (V)	Peak Pulse Current $I_{PPM}$ (A)	Reverse Leakage Current at $V_{RWM}$ $I_R$ ( $\mu\text{A}$ ) <sup>(2)</sup>	Temperature Coefficient $V_{BR}$ (%/°C)
		Min.	Max.					
P6KE6V8(C)A	5.80	6.45	7.14	10	10.5	57.1	1000	0.057
P6KE7V5(C)A	6.40	7.13	7.88	10	11.3	53.1	500	0.061
P6KE8V2(C)A	7.02	7.79	8.61	10	12.1	50	200	0.065
P6KE9V1(C)A	7.78	8.65	9.55	1	13.4	45	50	0.068
P6KE10(C)A	8.55	9.5	10.5	1	14.5	41	10	0.073
P6KE11(C)A	9.40	10.5	11.6	1	15.6	38	5	0.075
P6KE12(C)A	10.2	11.4	12.6	1	16.7	36	5	0.078
P6KE13(C)A	11.1	12.4	13.7	1	18.2	33	5	0.081
P6KE15(C)A	12.8	14.3	15.8	1	21.2	28	5	0.084
P6KE16(C)A	13.6	15.2	16.8	1	22.5	27	5	0.086
P6KE18(C)A	15.3	17.1	18.9	1	25.2	24	5	0.088
P6KE20(C)A	17.1	19	21	1	27.7	22	5	0.090
P6KE22(C)A	18.8	20.9	23.1	1	30.6	20	5	0.092
P6KE24(C)A	20.5	22.8	25.2	1	33.2	18.1	5	0.094
P6KE27(C)A	23.1	25.7	28.4	1	37.5	16.0	5	0.096
P6KE30(C)A	25.6	28.5	31.5	1	41.4	14.5	5	0.097
P6KE33(C)A	28.2	31.4	34.7	1	45.7	13.2	5	0.098
P6KE36(C)A	30.8	34.2	37.8	1	49.9	12.0	5	0.099
P6KE39(C)A	33.3	37.1	41	1	53.9	11.2	5	0.100
P6KE43(C)A	36.8	40.9	45.2	1	59.3	10.1	5	0.101
P6KE47(C)A	40.2	44.7	49.4	1	64.8	9.3	5	0.101
P6KE51(C)A	43.6	48.5	53.6	1	70.1	8.6	5	0.102
P6KE56(C)A	47.8	53.2	58.8	1	77.0	7.8	5	0.103
P6KE62(C)A	53.0	58.9	65.1	1	85.0	7.1	5	0.104
P6KE68(C)A	58.1	64.6	71.4	1	92.0	6.5	5	0.104
P6KE75(C)A	64.1	71.3	78.8	1	103	5.8	5	0.105
P6KE82(C)A	70.1	77.9	86.1	1	113	5.3	5	0.105
P6KE91(C)A	77.8	86.5	95.5	1	125	4.8	5	0.106

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		Min.	Max.					
P6KE100(C)A	85.5	95	105	1	137	4.4	5	0.106
P6KE110(C)A	94.0	105	116	1	152	4.0	5	0.107
P6KE120(C)A	102	114	126	1	165	3.6	5	0.107
P6KE130(C)A	111	124	137	1	179	3.4	5	0.107
P6KE150(C)A	128	143	158	1	207	2.9	5	0.108
P6KE160(C)A	136	152	168	1	219	2.7	5	0.108
P6KE170(C)A	145	162	179	1	234	2.6	5	0.108
P6KE180(C)A	154	171	189	1	246	2.4	5	0.108
P6KE200(C)A	171	190	210	1	274	2.2	5	0.108
P6KE220(C)A	185	209	231	1	328	1.9	5	0.108
P6KE250(C)A	214	237	263	1	344	1.8	5	0.110
P6KE300(C)A	256	285	315	1	414	1.5	5	0.110
P6KE350(C)A	300	332	368	1	482	1.3	5	0.110
P6KE400(C)A	342	380	420	1	548	1.1	5	0.110
P6KE440(C)A	376	418	462	1	602	1.0	5	0.110

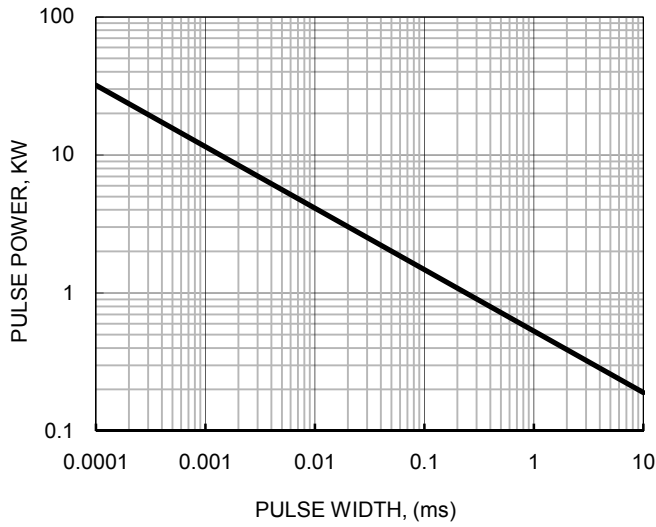
**Note:**

 2. .For bi-directional parts with  $V_{RWM} < 10$  V, the  $I_R$  maximum limit is doubled.

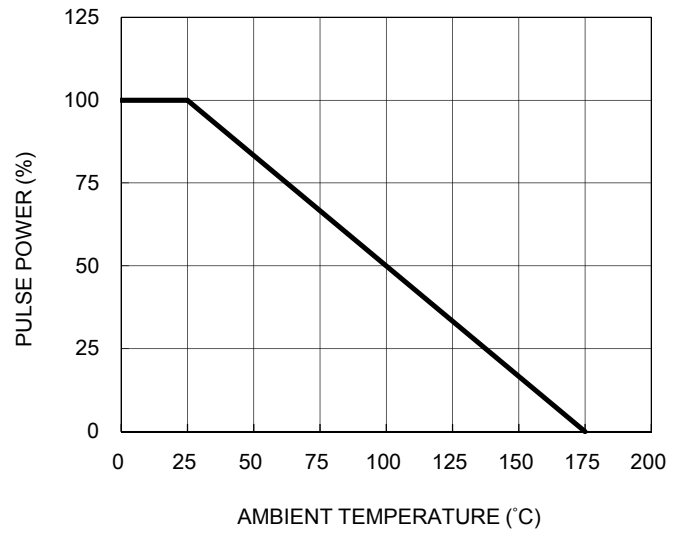
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

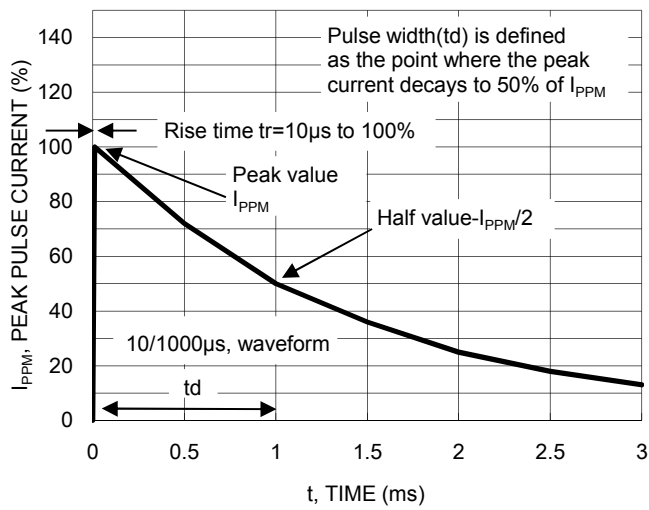
**Fig1. Peak Pulse Power Rating Curve**



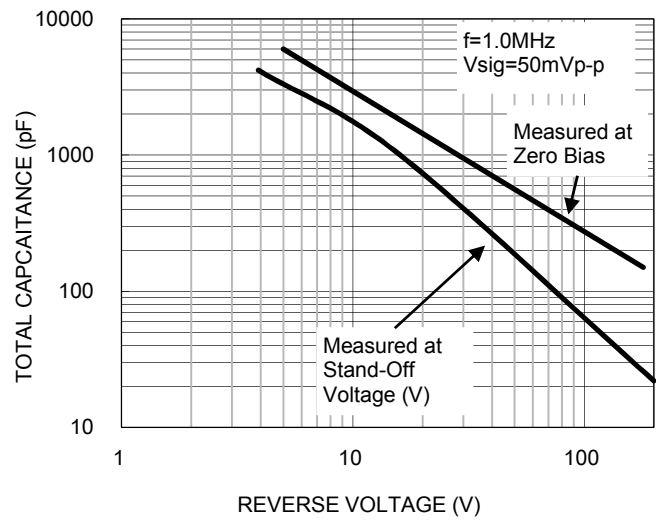
**Fig2. Pulse Derating Curve**



**Fig3. Pulse Waveform**



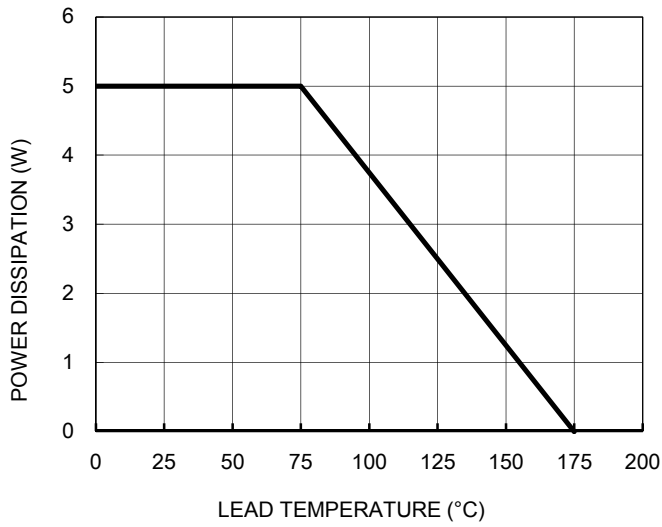
**Fig4. Total Capacitance – Uni-directional**



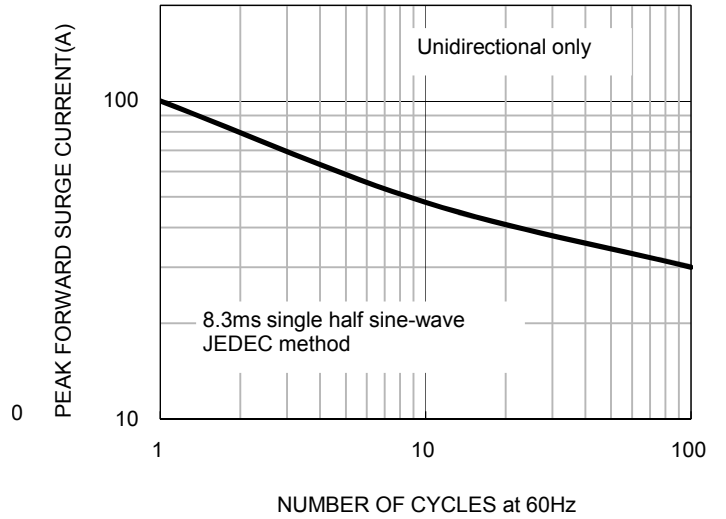
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**Fig5. Steady State Power Derating Curve**

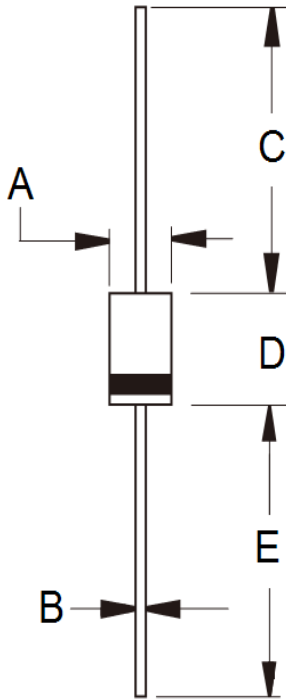


**Fig6. Non-Repetitive Surge Current**



**PACKAGE OUTLINE DIMENSIONS**

DO-15



DIM.	Unit (mm)	
	Min	Max
A	2.60	3.60
B	0.70	0.90
C	25.40	-
D	5.80	7.60
E	25.40	-

NOTES: UNLESS OTHERWISE SPECIFIED  
 A) PACKAGE STANDARD REFERENCE:  
 JEDEC DO-204 VARIATION AC.  
 B) PLASTIC PACKAGE BODY.  
 C) ALL DIMENSIONS ARE IN MILLIMETERS.

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