

TRANSZORB® Transient Voltage Suppressors



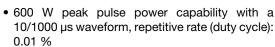
PRIMARY CHARACTERISTICS				
V _{WM}	5.8 V to 459 V			
V _{BR} uni-directional	6.8 V to 540 V			
V _{BR} bi-directional	6.8 V to 440 V			
P _{PPM}	600 W			
P_{D}	5.0 W			
I _{FSM} (uni-directional only)	100 A			
T _J max.	175 °C			
Polarity	Uni-directional, bi-directional			
Package	DO-204AC (DO-15)			

DEVICES FOR BI-DIRECTION APPLICATIONS

For bi-directional types, use CA suffix (e.g. P6KE440CA). Electrical characteristics apply in both directions.

FEATURES

- Glass passivated chip junction
- · Available in uni-directional and bi-directional





- · Excellent clamping capability
- Very fast response time
- · Low incremental surge resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive, and telecommunication.

MECHANICAL DATA

Case: DO-204AC, molded epoxy over passivated chip Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS compliant, commercial grade Base P/NHE3 - RoHS compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Note

 P6KE250A to P6KE540A and P6KE250CA to P6KE440CA for commercial grade only

Polarity: For uni-directional types the color band denotes cathode end, no marking on bi-directional types

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	VALUE	UNIT		
Peak pulse power dissipation with a 10/1000 μs waveform ⁽¹⁾ (fig. 1)	P _{PPM}	600	W		
Peak pulse current with a 10/1000 μs waveform ⁽¹⁾	I _{PPM}	See next table	А		
Power dissipation on infinite heatsink at T _L = 75 °C (fig. 5)	P _D	5.0	W		
Peak forward surge current 8.3 ms single half sine-wave (2)	I _{FSM}	100	Α		
Maximum instantaneous forward voltage at 50 A for uni-directional only (3)	V _F	3.5/5.0	V		
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 175	°C		

Notes

- (1) Non-repetitive current pulse, per fig. 3 and derated above T_A = 25 °C per fig. 2
- (2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum
- $^{(3)}$ V_E = 3.5 V for P6KE220A and below; V_E = 5.0 V for P6KE250A and above



Device type	ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) BREAKDOWN BREAKDOWN MAXIMUM MAXIMUM MAXIMUM MAXIMUM MAXIMUM MAXIMUM								
MPAKEBABA 6.45 7.14 10 5.80 1000 57.11 10.5 0.0	DEVICE TYPE	VOL ⁻ V _{BR} A (TAGE T I _T ⁽¹⁾ V)	CURRENT I _T	VOLTAGE V _{WM}	LEAKAGE AT V _{WM} ⁽³⁾	PEAK PULSE CURRENT	VOLTAGE AT I _{PPM}	MAXIMUM TEMPERATURE COEFFICENT AT V _{BR}
(ЧР6КЕТ.5A 7.73 7.88 10 6.40 500 53.1 11.3 0.0 (ЧР6КЕВ.2A 7.79 8.61 10 7.02 200 49.6 12.1 0.0 (ЧР6КЕЛОА 8.65 9.55 1.0 7.78 50 44.8 13.4 0.0 (ЧР6КЕЛОА 9.50 10.5 1.0 8.55 10 41.4 14.5 0.0 (ЧР6КЕЛА 10.5 11.6 1.0 10.2 5.0 35.9 16.7 0.0 (ЧР6КЕЛА 12.4 13.7 1.0 11.1 5.0 33.0 18.2 0.0 (ЧР6КЕЛА 12.4 13.7 1.0 11.1 5.0 33.0 18.2 0.0 (ЧР6КЕЛА 15.2 16.8 1.0 13.6 1.0 28.7 22.5 0.0 (ЧР6КЕЗА 19.0 21.0 1.0 17.1 1.0 21.7 27.7 0.0 (ЧР6КЕЗА 20.9 23.1		MIN.		` ,	. ,	I _D (μA)		V _C (V)	(%/°C)
PPRKEB_1A	(+)P6KE6.8A	6.45	7.14	10	5.80	1000	57.1	10.5	0.057
(ЧРВКЕВ.1А 8.65 9.55 1.0 7.78 50 44.8 13.4 0.6 (ЧРВКЕТОА 9.50 10.5 1.0 8.55 10 41.4 14.5 0.0 (ЧРВКЕТАА 11.6 1.0 9.40 5.0 38.5 15.6 0.0 (ЧРВКЕТАА 11.4 12.6 1.0 10.2 5.0 38.9 16.7 0.0 (ЧРВКЕТВА 12.4 13.7 1.0 11.1 5.0 33.0 18.2 0.0 (ЧРВКЕТВА 14.3 15.8 1.0 12.8 1.0 28.3 21.2 0.0 (ЧРВКЕТВА 15.1 16.8 1.0 13.6 1.0 28.7 22.5 0.0 (ЧРВКЕЗОА 19.0 21.0 1.0 17.1 1.0 21.7 27.7 0.0 (ЧРВКЕЗОА 29.9 23.1 1.0 18.8 1.0 19.6 30.6 0.0 (ЧРВКЕЗОА 22.5 28.4 1.0	(+)P6KE7.5A	7.13	7.88	10	6.40	500	53.1	11.3	0.061
(ЧРВКЕТОА 9,50 10,5 1,0 8,55 10 41,4 14,5 0.0 (ЧРВКЕТАА 11,6 1,0 9,40 5,0 38,5 15,6 0.0 (ЧРВКЕТАА 11,4 12,6 1,0 10,2 5,0 38,5 16,6 0.0 (ЧРВКЕТВА 11,4 13,7 1,0 11,1 5,0 33,0 18,2 0.0 (ЧРВКЕТВА 14,3 15,8 1,0 12,8 1,0 26,7 22,5 0.0 (ЧРВКЕВА 17,1 18,9 1,0 15,3 1,0 26,7 22,5 0.0 (ЧРВКЕЗА 19,0 21,0 1,0 17,1 1,0 21,7 27,7 0.0 (ЧРВКЕЗА 29,2 23,1 1,0 18,8 1,0 19,6 30,6 0.0 (ЧРВКЕЗА 22,8 25,2 1,0 20,5 1,0 18,1 33,2 0.0 (ЧРВКЕЗА 23,2 3,1 2,1		7.79	8.61	10	7.02	200	49.6	12.1	0.065
ΘΡΒΚΕΙ2ΙΑ 11.6 1.0 9.40 5.0 38.5 15.6 0.0 ΘΡΒΚΕΙ2Α 11.4 12.6 1.0 10.2 5.0 35.9 16.7 0.0 ΘΡΘΚΕΙ3Α 12.4 13.7 1.0 11.1 5.0 33.0 18.2 0.0 ΘΡΘΚΕΙ5Α 14.3 15.8 1.0 12.8 1.0 28.3 21.2 0.0 ΘΡΘΚΕΙΘΑ 15.2 16.8 1.0 13.6 1.0 26.7 22.5 0.0 ΘΡΘΚΕΙΘΑ 19.0 21.0 1.0 17.1 1.0 21.7 27.7 0.0 ΘΡΘΚΕΙΖΑ 20.9 23.1 1.0 18.8 1.0 19.6 30.6 0.0 ΘΡΘΚΕΙΖΑΑ 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 ΘΡΘΚΕΙΖΑΑ 22.8 25.2 1.0 25.6 1.0 18.1 43.7 0.0 ΘΡΘΚΕΙΘΑΘΑ 34.2 37.8 1.0 <td></td> <td>8.65</td> <td>9.55</td> <td>1.0</td> <td>7.78</td> <td>50</td> <td>44.8</td> <td>13.4</td> <td>0.068</td>		8.65	9.55	1.0	7.78	50	44.8	13.4	0.068
ФРВКЕ12A		9.50	10.5	1.0	8.55	10	41.4	14.5	0.073
(ФРБКЕТЗА 12.4 13.7 1.0 11.1 5.0 33.0 18.2 0.0 (ФРБКЕТБА 14.3 15.8 1.0 12.8 1.0 28.3 21.2 0.0 (ФРБКЕТБА 15.2 16.8 1.0 13.6 1.0 28.7 22.5 0.0 (ФРБКЕТВА 17.1 18.9 1.0 15.3 1.0 23.8 25.2 0.0 (ФРБКЕZDA 19.0 21.0 1.0 17.1 1.0 21.7 27.7 0.0 (ФРБКЕZDA 29.0 23.1 1.0 18.8 1.0 19.6 30.6 0.0 (ФРБКЕЗА 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 (ФРБКЕЗА 25.7 28.4 1.0 23.1 1.0 16.0 37.5 0.0 (ФРБКЕЗА 31.4 34.7 1.0 28.2 1.0 13.1 45.7 0.0 (ФРБКЕЗА 34.2 37.8 </td <td>⁽⁺⁾P6KE11A</td> <td>10.5</td> <td>11.6</td> <td>1.0</td> <td>9.40</td> <td>5.0</td> <td>38.5</td> <td>15.6</td> <td>0.075</td>	⁽⁺⁾ P6KE11A	10.5	11.6	1.0	9.40	5.0	38.5	15.6	0.075
(ЧРВКЕТБА 14.3 15.8 1.0 12.8 1.0 28.3 21.2 0.0 (ЧРВКЕТБА 15.2 16.8 1.0 13.6 1.0 26.7 22.5 0.0 (ЧРВКЕТВА 17.1 18.9 1.0 15.3 1.0 23.8 25.2 0.0 (ЧРВКЕЗА 19.0 21.0 1.0 17.1 1.0 21.7 27.7 0.0 (ЧРВКЕЗА 20.9 23.1 1.0 18.8 1.0 19.6 30.6 0.0 (ЧРВКЕЗА 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 (ЧРВКЕЗА 28.5 31.5 1.0 23.1 1.0 16.0 37.5 0.0 (ЧРВКЕЗА 34.2 37.8 1.0 28.2 1.0 13.1 45.7 0.0 (ЧРВКЕЗА 34.2 37.8 1.0 30.8 1.0 10.1 53.9 0.0 (ЧРВКЕЗА 40.9 45.2	(+)P6KE12A	11.4	12.6	1.0	10.2	5.0	35.9	16.7	0.078
ФРЕКЕТВА 15.2 16.8 1.0 13.6 1.0 26.7 22.5 0.0 ФРЕКЕТВА 17.1 18.9 1.0 15.3 1.0 23.8 25.2 0.0 ФРЕКЕЗОА 19.0 21.0 1.0 17.1 1.0 21.7 27.7 0.0 ФРЕКЕЗА 20.9 23.1 1.0 18.8 1.0 19.6 30.6 0.0 ФРЕКЕЗА 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 ФРЕКЕЗОА 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 ФРЕКЕЗОА 28.5 31.5 1.0 25.6 1.0 14.5 41.4 0.0 ФРЕКЕЗАА 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 ФРЕКЕЗАА 34.2 37.8 1.0 30.8 1.0 11.1 53.9 0.1 ФРЕКЕЗАА 40.9 45.2	(+)P6KE13A	12.4	13.7	1.0	11.1	5.0	33.0	18.2	0.081
(Ф)РБКЕ18A 17.1 18.9 1.0 15.3 1.0 23.8 25.2 0.0 (Ф)РБКЕ20A 19.0 21.0 1.0 17.1 1.0 21.7 27.7 0.0 (Ф)РБКЕ24A 20.9 23.1 1.0 18.8 1.0 19.6 30.6 0.0 (Ф)РБКЕ24A 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 (Ф)РБКЕ27A 25.7 28.4 1.0 23.1 1.0 16.0 37.5 0.0 (Ф)РБКЕ30A 28.5 31.5 1.0 25.6 1.0 14.5 41.4 0.0 (Ф)РБКЕ3A 31.4 34.7 1.0 28.2 1.0 13.1 45.7 0.0 (Ф)РБКЕ3A 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 (Ф)РБКЕ3A 34.9 45.2 1.0 33.3 1.0 11.1 53.9 0.1 (Ф)РБКЕ47A 44.7	(+)P6KE15A	14.3	15.8	1.0	12.8	1.0	28.3	21.2	0.084
(中)P6KE20A 19.0 21.0 1.0 17.1 1.0 21.7 27.7 0.0 (中)P6KE22A 20.9 23.1 1.0 18.8 1.0 19.6 30.6 0.0 (中)P6KE22A 20.9 23.1 1.0 18.8 1.0 19.6 30.6 0.0 (中)P6KE24A 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 (中)P6KE27A 25.7 28.4 1.0 23.1 1.0 16.0 37.5 0.0 (中)P6KE30A 28.5 31.5 1.0 25.6 1.0 14.5 41.4 0.0 (中)P6KE33A 31.4 34.7 1.0 28.2 1.0 13.1 45.7 0.0 (中)P6KE33A 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 (中)P6KE30A 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 (中)P6KE30A 34.2 37.8 1.0 33.3 1.0 11.1 53.9 0.1 (中)P6KE30A 44.7 49.4 1.0 40.2 1.0 93.3 64.8 0.1 (中)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (中)P6KE51A 48.5 53.6 1.0 43.6 1.0 8.6 70.1 0.1 (中)P6KE50A 53.2 58.8 1.0 47.8 1.0 53.0 1.0 7.8 77.0 0.1 (中)P6KE62A 58.9 65.1 1.0 53.0 1.0 7.1 85.0 0.1 (中)P6KE62A 58.9 65.1 1.0 53.0 1.0 7.1 85.0 0.1 (中)P6KE62A 58.9 65.1 1.0 58.1 1.0 53.0 1.0 7.1 85.0 0.1 (中)P6KE62A 58.9 65.1 1.0 58.1 1.0 53.0 1.0 7.1 85.0 0.1 (中)P6KE62A 58.9 65.1 1.0 58.1 1.0 53.0 1.0 7.1 85.0 0.1 (中)P6KE62A 77.9 86.1 1.0 70.1 1.0 53.0 1.0 7.1 85.0 0.1 (中)P6KE61A 86.5 95.5 1.0 77.8 1.0 44.4 137 0.1 (中)P6KE91A 86.5 95.5 1.0 77.8 1.0 44.4 137 0.1 (中)P6KE91A 86.5 95.5 1.0 77.8 1.0 44.4 137 0.1 (中)P6KE91A 152 152 153 153 153 153 153 153 153 153 153 153	(+)P6KE16A	15.2	16.8	1.0	13.6	1.0	26.7	22.5	0.086
(+)P6KE22A 20.9 23.1 1.0 18.8 1.0 19.6 30.6 0.0 (+)P6KE24A 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 (+)P6KE27A 25.7 28.4 1.0 23.1 1.0 16.0 37.5 0.0 (+)P6KE30A 28.5 31.5 1.0 25.6 1.0 14.5 41.4 0.0 (+)P6KE33A 31.4 34.7 1.0 28.2 1.0 13.1 45.7 0.0 (+)P6KE36A 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 (+)P6KE3AA 40.9 45.2 1.0 36.8 1.0 11.1 53.9 0.1 (+)P6KE47A 44.7 49.4 1.0 40.2 1.0 9.3 64.8 0.1 (+)P6KE51A 48.5 53.6 1.0 47.8 1.0 7.8 77.0 0.1 (+)P6KE62A 58.9	(+)P6KE18A	17.1	18.9	1.0	15.3	1.0	23.8	25.2	0.088
(+)P6KE24A 22.8 25.2 1.0 20.5 1.0 18.1 33.2 0.0 (+)P6KE27A 25.7 28.4 1.0 23.1 1.0 16.0 37.5 0.0 (+)P6KE30A 28.5 31.5 1.0 25.6 1.0 14.5 41.4 0.0 (+)P6KE33A 31.4 34.7 1.0 28.2 1.0 13.1 45.7 0.0 (+)P6KE36A 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 (+)P6KE39A 37.1 41.0 1.0 33.3 1.0 11.1 53.9 0.1 (+)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (+)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 11.1 53.9 0.1 (+)P6KE51A 48.5 53.6 1.0 43.6 1.0 9.3 64.8 0.1 (+)P6KE51A	(+)P6KE20A	19.0	21.0	1.0	17.1	1.0	21.7	27.7	0.090
(+)P6KE27A 25.7 28.4 1.0 23.1 1.0 16.0 37.5 0.0 (-)P6KE30A 28.5 31.5 1.0 25.6 1.0 14.5 41.4 0.0 (-)P6KE33A 31.4 34.7 1.0 28.2 1.0 13.1 45.7 0.0 (-)P6KE39A 37.1 41.0 1.0 30.8 1.0 12.0 49.9 0.0 (-)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (-)P6KE47A 44.7 49.4 1.0 40.2 1.0 9.3 64.8 0.1 (-)P6KE51A 48.5 53.6 1.0 43.6 1.0 8.6 70.1 0.1 (-)P6KE56A 53.2 58.8 1.0 47.8 1.0 7.8 77.0 0.1 (-)P6KE6BA 64.6 71.4 1.0 58.1 1.0 7.1 85.0 0.1 (-)P6KE75A 71.3 <	(+)P6KE22A	20.9	23.1	1.0	18.8	1.0	19.6	30.6	0.092
(+)P6KE30A 28.5 31.5 1.0 25.6 1.0 14.5 41.4 0.0 (-)P6KE33A 31.4 34.7 1.0 28.2 1.0 13.1 45.7 0.0 (-)P6KE36A 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 (-)P6KE39A 37.1 41.0 1.0 33.3 1.0 11.1 53.9 0.1 (-)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (-)P6KE47A 44.7 49.4 1.0 40.2 1.0 9.3 64.8 0.1 (-)P6KE51A 48.5 53.6 1.0 47.8 1.0 8.6 70.1 0.1 (-)P6KE62A 58.9 65.1 1.0 53.0 1.0 7.1 85.0 0.1 (-)P6KE6BA 64.6 71.4 1.0 58.1 1.0 6.5 92.0 0.1 (-)P6KE6BA 65.2 <	(+)P6KE24A	22.8	25.2	1.0	20.5	1.0	18.1	33.2	0.094
(+)P6KE33A 31.4 34.7 1.0 28.2 1.0 13.1 45.7 0.0 (+)P6KE36A 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 (+)P6KE39A 37.1 41.0 1.0 33.3 1.0 11.1 53.9 0.1 (+)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (+)P6KE47A 44.7 49.4 1.0 40.2 1.0 9.3 64.8 0.1 (+)P6KE51A 48.5 53.6 1.0 43.6 1.0 8.6 70.1 0.1 (+)P6KE6A 53.2 58.8 1.0 47.8 1.0 7.8 77.0 0.1 (+)P6KE6BA 64.6 71.4 1.0 58.1 1.0 7.1 85.0 0.1 (+)P6KE7A 71.3 78.8 1.0 64.1 1.0 5.8 103 0.1 (+)P6KE9A 77.9 86	(+)P6KE27A	25.7	28.4	1.0	23.1	1.0	16.0	37.5	0.096
(+)P6KE36A 34.2 37.8 1.0 30.8 1.0 12.0 49.9 0.0 (+)P6KE39A 37.1 41.0 1.0 33.3 1.0 11.1 53.9 0.1 (+)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (+)P6KE51A 44.7 49.4 1.0 40.2 1.0 9.3 64.8 0.1 (+)P6KE51A 48.5 53.6 1.0 43.6 1.0 8.6 70.1 0.1 (+)P6KE6A 53.2 58.8 1.0 47.8 1.0 7.8 77.0 0.1 (+)P6KE6A 58.9 65.1 1.0 53.0 1.0 7.1 85.0 0.1 (+)P6KE6BA 66.6 71.4 1.0 58.1 1.0 6.5 92.0 0.1 (+)P6KE6BA 66.1 1.0 53.0 1.0 7.1 85.0 0.1 (+)P6KE6BA 66.1 7.1 7.	(+)P6KE30A	28.5	31.5	1.0	25.6	1.0	14.5	41.4	0.097
(+)P6KE39A 37.1 41.0 1.0 33.3 1.0 11.1 53.9 0.1 (+)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (+)P6KE47A 44.7 49.4 1.0 40.2 1.0 9.3 64.8 0.1 (+)P6KE56A 53.2 58.8 1.0 47.8 1.0 7.8 77.0 0.1 (+)P6KE62A 58.9 65.1 1.0 53.0 1.0 7.1 85.0 0.1 (+)P6KE68A 64.6 71.4 1.0 58.1 1.0 6.5 92.0 0.1 (+)P6KE6BA 64.6 71.4 1.0 58.1 1.0 6.5 92.0 0.1 (+)P6KE6BA 64.6 71.4 1.0 58.1 1.0 6.5 92.0 0.1 (+)P6KE7A 77.3 78.8 1.0 64.1 1.0 5.3 113 0.1 (+)P6KE82A 77.9 86	(+)P6KE33A	31.4	34.7	1.0	28.2	1.0	13.1	45.7	0.098
(+)P6KE39A 37.1 41.0 1.0 33.3 1.0 11.1 53.9 0.1 (+)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (+)P6KE47A 44.7 49.4 1.0 40.2 1.0 9.3 64.8 0.1 (+)P6KE56A 53.2 58.8 1.0 43.6 1.0 7.8 77.0 0.1 (+)P6KE66A 53.2 58.8 1.0 47.8 1.0 7.8 77.0 0.1 (+)P6KE62A 58.9 65.1 1.0 53.0 1.0 7.1 85.0 0.1 (+)P6KE68A 64.6 71.4 1.0 58.1 1.0 6.5 92.0 0.1 (+)P6KE68A 77.3 78.8 1.0 64.1 1.0 5.8 103 0.1 (+)P6KE82A 77.9 86.1 1.0 77.8 1.0 4.8 125 0.1 (+)P6KE10A 85.5 1.	(+)P6KE36A	34.2	37.8	1.0	30.8	1.0	12.0	49.9	0.099
(+)P6KE43A 40.9 45.2 1.0 36.8 1.0 10.1 59.3 0.1 (+)P6KE47A 44.7 49.4 1.0 40.2 1.0 9.3 64.8 0.1 (+)P6KE51A 48.5 53.6 1.0 43.6 1.0 8.6 70.1 0.1 (+)P6KE56A 53.2 58.8 1.0 47.8 1.0 7.8 77.0 0.1 (+)P6KE62A 58.9 65.1 1.0 53.0 1.0 7.1 85.0 0.1 (+)P6KE68A 64.6 71.4 1.0 58.1 1.0 6.5 92.0 0.1 (+)P6KE75A 71.3 78.8 1.0 64.1 1.0 5.8 103 0.1 (+)P6KE82A 77.9 86.1 1.0 70.1 1.0 5.3 113 0.1 (+)P6KE810A 77.9 86.1 1.0 77.8 1.0 4.8 125 0.1 (+)P6KE10A 105 1.0<	(+)P6KE39A	37.1	-	1.0	33.3		11.1	53.9	0.100
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(+)P6KE56A 53.2 58.8 1.0 47.8 1.0 7.8 77.0 0.1 (+)P6KE62A 58.9 65.1 1.0 53.0 1.0 7.1 85.0 0.1 (+)P6KE68A 64.6 71.4 1.0 58.1 1.0 6.5 92.0 0.1 (+)P6KE75A 71.3 78.8 1.0 64.1 1.0 5.8 103 0.1 (+)P6KE82A 77.9 86.1 1.0 70.1 1.0 5.3 113 0.1 (+)P6KE91A 86.5 95.5 1.0 77.8 1.0 4.8 125 0.1 (+)P6KE10A 95.0 105 1.0 85.5 1.0 4.4 137 0.1 (+)P6KE10A 105 116 1.0 94.0 1.0 3.9 152 0.1 (+)P6KE10A 114 126 1.0 102 1.0 3.6 165 0.1 (+)P6KE150A 123 158		48.5	-	1.0	43.6			70.1	0.102
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(+)P6KE75A 71.3 78.8 1.0 64.1 1.0 5.8 103 0.1 (+)P6KE82A 77.9 86.1 1.0 70.1 1.0 5.3 113 0.1 (+)P6KE91A 86.5 95.5 1.0 77.8 1.0 4.8 125 0.1 (+)P6KE100A 95.0 105 1.0 85.5 1.0 4.4 137 0.1 (+)P6KE110A 105 116 1.0 94.0 1.0 3.9 152 0.1 (+)P6KE110A 105 116 1.0 94.0 1.0 3.9 152 0.1 (+)P6KE120A 114 126 1.0 102 1.0 3.6 165 0.1 (+)P6KE130A 124 137 1.0 111 1.0 3.4 179 0.1 (+)P6KE150A 143 158 1.0 128 1.0 2.7 219 0.1 (+)P6KE160A 152 168 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.104</td></t<>									0.104
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									0.110
PRINTEGIUA I 485 I 535 I I.U. I 434 I TU I U.XIN I 1698 I U.S									0.110
			1						0.110 0.110

Notes

- ⁽¹⁾ Pulse test: $t_p \le 50 \text{ ms}$
- (2) Surge current waveform per fig. 3 and derate per fig. 2
- $^{(3)}$ For bi-directional types with V_{WM} of 10 V and less the I_D limit is doubled
- (4) All terms and symbols are consistent with ANSI/EEE CA62.35
- (+) Underwriters laboratory recognition for the classification of protectors (QVGQ2) under the UL standard for safety 497B and file number E136766 for both uni-directional and bi-directional devices



THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	VALUE	UNIT		
Typical thermal resistance, junction to lead	R ₀ JL 20				
Typical thermal resistance, junction to ambient	$R_{ heta JA}$	75			

ORDERING INFORMATION (Example)						
PREFERRED PIN	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
P6KE6.8A-E3/54	0.432	54	4000	13" diameter paper tape and reel		
P6KE6.8AHE3/54 (1)	0.432	54	4000	13" diameter paper tape and reel		

Note

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

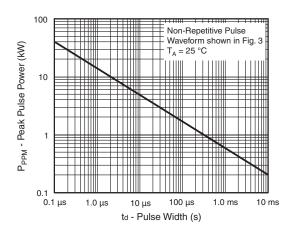


Fig. 1 - Peak Pulse Power Rating Curve

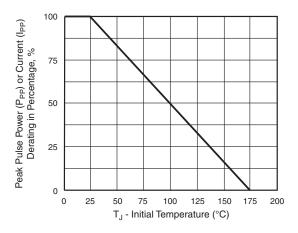


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

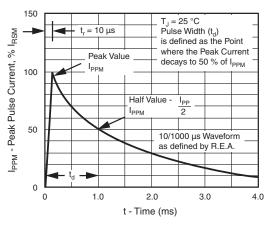


Fig. 3 - Pulse Waveform

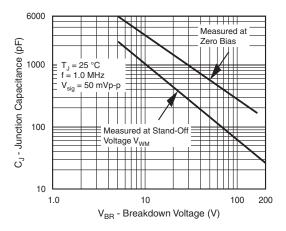


Fig. 4 - Typical Junction Capacitance Uni-Directional

⁽¹⁾ AEC-Q101 qualified





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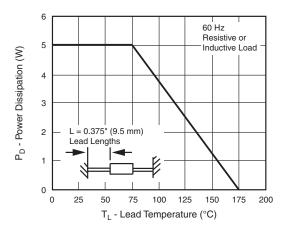


Fig. 5 - Power Derating Curve

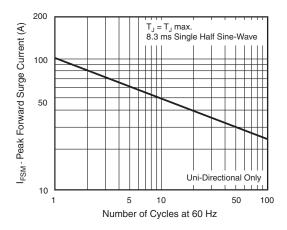


Fig. 6 - Maximum Non-Repetitive Forward Surge Current

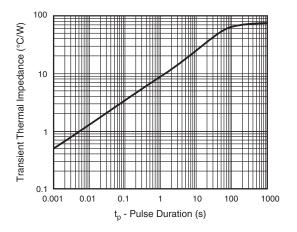
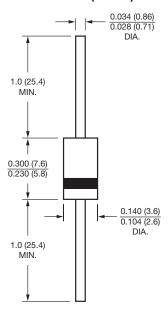


Fig. 7 - Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)



APPLICATION NOTES

- This P6KE TVS series is a low cost commercial product for use in applications where large voltage transients can permanently damage voltage-sensitive components.
- The P6KE series device types are designed in a small package size where power and space is a consideration. They are characterized by their high surge capability, extremely fast response time, and low impedance, (R_{on}). Because of the unpredictable nature of transients, and the variation of the impedance with respect to these transients, impedance, per se, is not specified as a parametric value. However, a minimum voltage at low current conditions (BV) and a maximum clamping voltage (V_c) at a maximum peak pulse current is specified.
- In some instances, the thermal effect (see V_c Clamping Voltage) may be responsible for 50 % to 70 % of the observed voltage differential when subjected to high current pulses for several duty cycles, thus making a maximum impedance specification insignificant.
- In case of a severe current overload or abnormal transient beyond the maximum ratings, the Transient Voltage Suppressor will initially fail 'short' thus tripping the system's circuit breaker or fuse while protecting the entire circuit. Curves depicting clamping voltage vs. various current pulses are available from the factory. Extended power curves vs. pulse time are also available.

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Vishay

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Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.

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