

## Power TVS in DO-41

### Features

- Glass passivated chip
- 400W peak pulse power(10/1000us)
- High accuracy, 5% tolerance
- Uni and Bidirectional unit
- Low clamping voltage
- Low Leakage current
- Very fast response time

### Mechanical Data

- **Case:** DO-41 molded plastic Lead free; RoHS compliant
- **Molding Compound Flammability Rating:** UL 94 V-0
- **Terminals:** High temperature soldering guaranteed: 260 °C/10 sec. at terminals

### Applications

- Computers
- Telecom system
- Industrial equipments
- Consumer electronic applications
- Other VCC bus and I/O interfaces

### Absolute Maximum Ratings

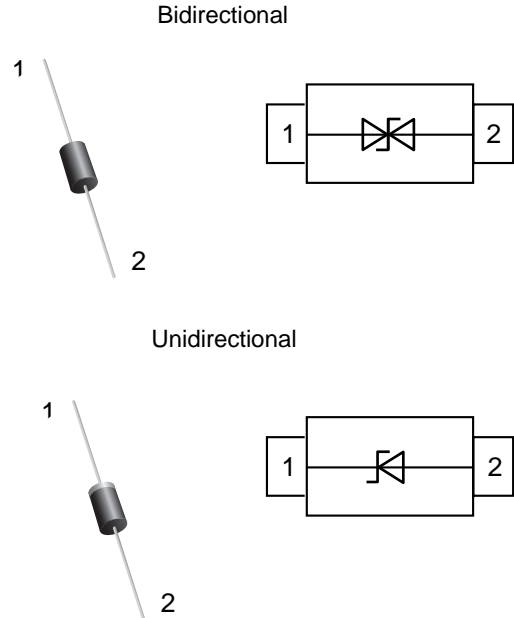
Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000us waveform <sup>(1)</sup>	P <sub>PP</sub>	400	W
Maximum peak reverse pulse current a 10/1000us waveform <sup>(1)</sup>	I <sub>PP</sub>	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave <sup>(2)</sup>	I <sub>FSM</sub>	40	A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Notes:

1.Non-repetitive current pulse,per Fig.5 and detated above TA=25°C per Fig.1

2.Measured on 8.3ms single half sine-wave,or equivalent square wave,duty cycle=4 pulses per minute maximum



## Electrical Characteristics

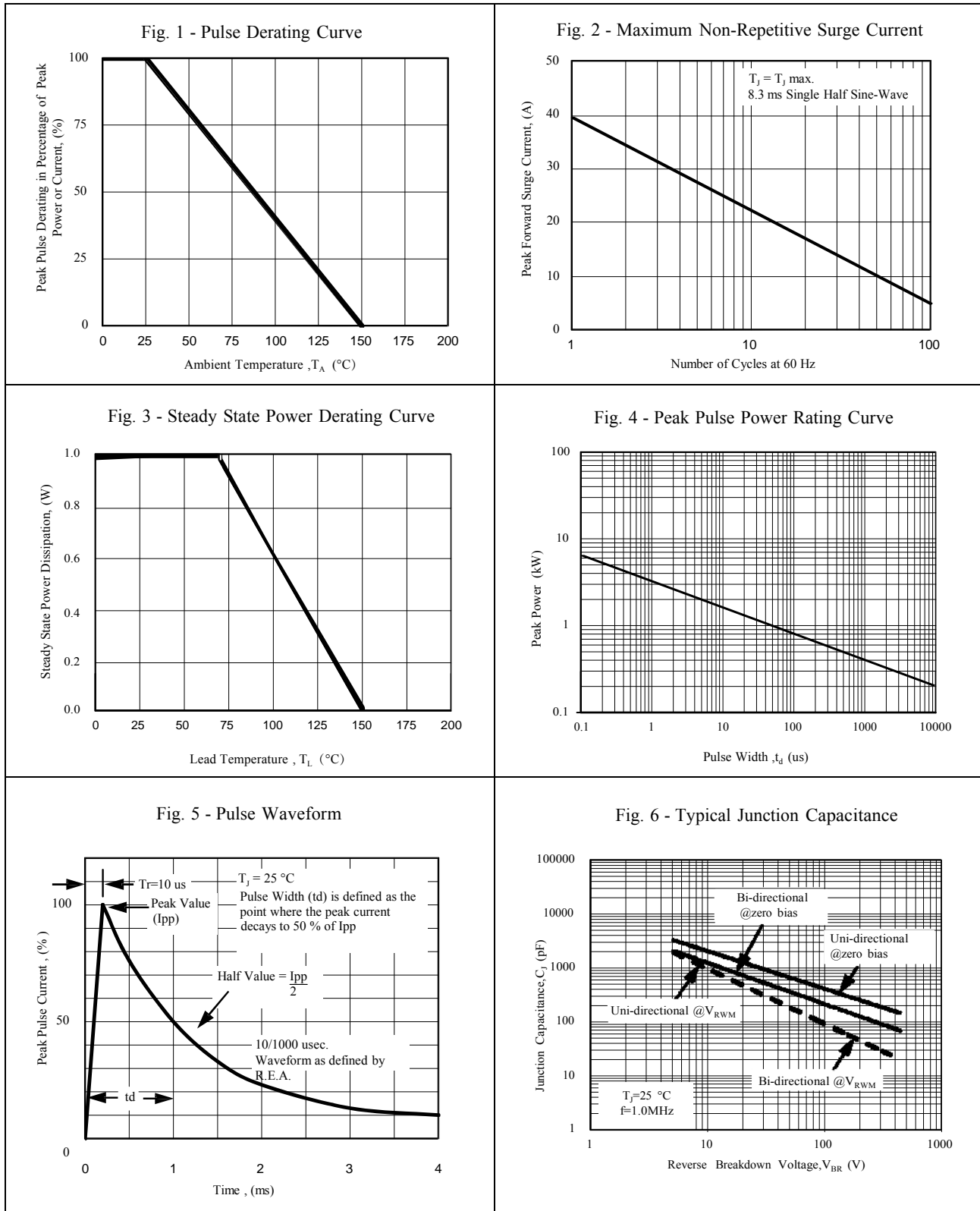
(T<sub>A</sub> = 25 °C unless otherwise specified)

Part Number	Direction	Maximum Working Voltage V <sub>RWM</sub> (V)	Maximum Reverse Current@V <sub>RWM</sub> I <sub>R</sub> max(μA)	Breakdown Voltage@I <sub>T</sub>			Peak Surge Current I <sub>PP</sub> (A)	Maximum Clamping Voltage@I <sub>PP</sub> V <sub>C</sub> (V)
				V <sub>BR</sub> min(V)	V <sub>BR</sub> max(V)	I <sub>T</sub> (mA)		
P4KE6.8A	Uni-Dir	5.80	1000	6.45	7.14	10	39.0	10.5
P4KE6.8CA	Bi-Dir	5.80	1000	6.45	7.14	10	39.0	10.5
P4KE7.5A	Uni-Dir	6.40	500	7.13	7.88	10	36.3	11.3
P4KE7.5CA	Bi-Dir	6.40	500	7.13	7.88	10	36.3	11.3
P4KE8.2A	Uni-Dir	7.02	200	7.79	8.61	10	33.9	12.1
P4KE8.2CA	Bi-Dir	7.02	200	7.79	8.61	10	33.9	12.1
P4KE9.1A	Uni-Dir	7.78	50	8.65	9.55	1	30.6	13.4
P4KE9.1CA	Bi-Dir	7.78	50	8.65	9.55	1	30.6	13.4
P4KE10A	Uni-Dir	8.55	10	9.50	10.50	1	28.3	14.5
P4KE10CA	Bi-Dir	8.55	10	9.50	10.50	1	28.3	14.5
P4KE11A	Uni-Dir	9.40	5	10.50	11.60	1	26.3	15.6
P4KE11CA	Bi-Dir	9.40	5	10.50	11.60	1	26.3	15.6
P4KE12A	Uni-Dir	10.20	5	11.40	12.60	1	24.6	16.7
P4KE12CA	Bi-Dir	10.20	5	11.40	12.60	1	24.6	16.7
P4KE13A	Uni-Dir	11.10	1	12.40	13.70	1	22.5	18.2
P4KE13CA	Bi-Dir	11.10	1	12.40	13.70	1	22.5	18.2
P4KE15A	Uni-Dir	12.80	1	14.30	15.80	1	19.3	21.2
P4KE15CA	Bi-Dir	12.80	1	14.30	15.80	1	19.3	21.2
P4KE16A	Uni-Dir	13.60	1	15.20	16.80	1	18.2	22.5
P4KE16CA	Bi-Dir	13.60	1	15.20	16.80	1	18.2	22.5
P4KE18A	Uni-Dir	15.30	1	17.10	18.90	1	16.1	25.2
P4KE18CA	Bi-Dir	15.30	1	17.10	18.90	1	16.1	25.2
P4KE20A	Uni-Dir	17.10	1	19.00	21.00	1	14.8	27.7
P4KE20CA	Bi-Dir	17.10	1	19.00	21.00	1	14.8	27.7
P4KE22A	Uni-Dir	18.80	1	20.90	23.10	1	13.4	30.6
P4KE22CA	Bi-Dir	18.80	1	20.90	23.10	1	13.4	30.6
P4KE24A	Uni-Dir	20.50	1	22.80	25.20	1	12.3	33.2
P4KE24CA	Bi-Dir	20.50	1	22.80	25.20	1	12.3	33.2
P4KE27A	Uni-Dir	23.10	1	25.70	28.40	1	10.9	37.5
P4KE27CA	Bi-Dir	23.10	1	25.70	28.40	1	10.9	37.5
P4KE30A	Uni-Dir	25.60	1	28.50	31.50	1	9.9	41.4
P4KE30CA	Bi-Dir	25.60	1	28.50	31.50	1	9.9	41.4
P4KE33A	Uni-Dir	28.20	1	31.40	34.70	1	9.0	45.7
P4KE33CA	Bi-Dir	28.20	1	31.40	34.70	1	9.0	45.7
P4KE36A	Uni-Dir	30.80	1	34.20	37.80	1	8.2	49.9
P4KE36CA	Bi-Dir	30.80	1	34.20	37.80	1	8.2	49.9
P4KE39A	Uni-Dir	33.30	1	37.10	41.00	1	7.6	53.9
P4KE39CA	Bi-Dir	33.30	1	37.10	41.00	1	7.6	53.9

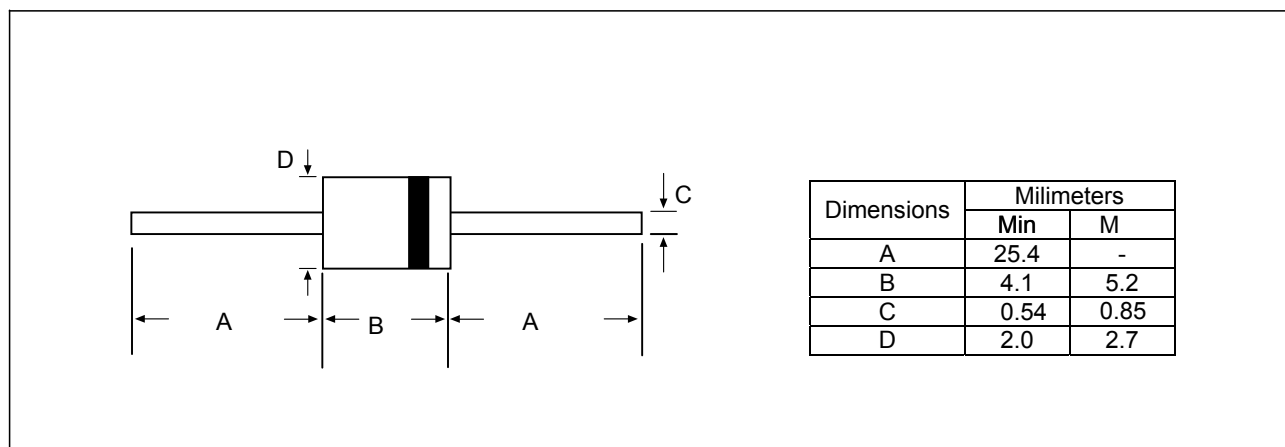
Part Number	Direction	Maximum Working Voltage $V_{RWM}$ (V)	Maximum Reverse Current@ $V_{RWM}$ $I_R$ max(uA)	Breakdown Voltage@ $I_T$			Peak Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage@ $I_{PP}$ $V_C$ (V)
				$V_{BR}$ min(V)	$V_{BR}$ max(V)	$I_T$ (mA)		
P4KE43A	Uni-Dir	36.80	1	40.90	45.20	1	6.9	59.3
P4KE43CA	Bi-Dir	36.80	1	40.90	45.20	1	6.9	59.3
P4KE47A	Uni-Dir	40.20	1	44.70	49.40	1	6.3	64.8
P4KE47CA	Bi-Dir	40.20	1	44.70	49.40	1	6.3	64.8
P4KE51A	Uni-Dir	43.60	1	48.50	53.60	1	5.8	70.1
P4KE51CA	Bi-Dir	43.60	1	48.50	53.60	1	5.8	70.1
P4KE56A	Uni-Dir	47.80	1	53.20	58.80	1	5.3	77.0
P4KE56CA	Bi-Dir	47.80	1	53.20	58.80	1	5.3	77.0
P4KE62A	Uni-Dir	53.00	1	58.90	65.10	1	4.8	85.0
P4KE62CA	Bi-Dir	53.00	1	58.90	65.10	1	4.8	85.0
P4KE68A	Uni-Dir	58.10	1	64.60	71.40	1	4.5	92.0
P4KE68CA	Bi-Dir	58.10	1	64.60	71.40	1	4.5	92.0
P4KE75A	Uni-Dir	64.10	1	71.30	78.80	1	4.0	103.0
P4KE75CA	Bi-Dir	64.10	1	71.30	78.80	1	4.0	103.0
P4KE82A	Uni-Dir	70.10	1	77.90	86.10	1	3.6	113.0
P4KE82CA	Bi-Dir	70.10	1	77.90	86.10	1	3.6	113.0
P4KE91A	Uni-Dir	77.80	1	86.50	95.50	1	3.3	125.0
P4KE91CA	Bi-Dir	77.80	1	86.50	95.50	1	3.3	125.0
P4KE100A	Uni-Dir	85.50	1	95.00	105.00	1	3.0	137.0
P4KE100CA	Bi-Dir	85.50	1	95.00	105.00	1	3.0	137.0
P4KE110A	Uni-Dir	94.00	1	105.00	116.00	1	2.7	152.0
P4KE110CA	Bi-Dir	94.00	1	105.00	116.00	1	2.7	152.0
P4KE120A	Uni-Dir	102.00	1	114.00	126.00	1	2.5	165.0
P4KE120CA	Bi-Dir	102.00	1	114.00	126.00	1	2.5	165.0
P4KE130A	Uni-Dir	111.00	1	124.00	137.00	1	2.3	179.0
P4KE130CA	Bi-Dir	111.00	1	124.00	137.00	1	2.3	179.0
P4KE150A	Uni-Dir	128.00	1	143.00	158.00	1	2.0	207.0
P4KE150CA	Bi-Dir	128.00	1	143.00	158.00	1	2.0	207.0
P4KE160A	Uni-Dir	136.00	1	152.00	168.00	1	1.9	219.0
P4KE160CA	Bi-Dir	136.00	1	152.00	168.00	1	1.9	219.0
P4KE170A	Uni-Dir	145.00	1	162.00	179.00	1	1.8	234.0
P4KE170CA	Bi-Dir	145.00	1	162.00	179.00	1	1.8	234.0
P4KE180A	Uni-Dir	154.00	1	171.00	189.00	1	1.7	246.0
P4KE180CA	Bi-Dir	154.00	1	171.00	189.00	1	1.7	246.0
P4KE200A	Uni-Dir	171.00	1	190.00	210.00	1	1.5	274.0
P4KE200CA	Bi-Dir	171.00	1	190.00	210.00	1	1.5	274.0
P4KE220A	Uni-Dir	185.00	1	209.00	231.00	1	1.3	328.0
P4KE220CA	Bi-Dir	185.00	1	209.00	231.00	1	1.3	328.0

Part Number	Direction	Maximum Working Voltage $V_{RWM}$ (V)	Maximum Reverse Current@ $V_{RWM}$ $I_R$ max( $\mu$ A)	Breakdown Voltage@ $I_T$			Peak Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage@ $I_{PP}$ $V_C$ (V)
				$V_{BR}$ min(V)	$V_{BR}$ max(V)	$I_T$ (mA)		
P4KE250A	Uni-Dir	214.00	1	237.00	263.00	1	1.2	344.00
P4KE250CA	Bi-Dir	214.00	1	237.00	263.00	1	1.2	344.00
P4KE300A	Uni-Dir	256.00	1	285.00	315.00	1	1.0	414.00
P4KE300CA	Bi-Dir	256.00	1	285.00	315.00	1	1.0	414.00
P4KE350A	Uni-Dir	300.00	1	332.00	368.00	1	0.9	482.00
P4KE350CA	Bi-Dir	300.00	1	332.00	368.00	1	0.9	482.00
P4KE400A	Uni-Dir	342.00	1	380.00	420.00	1	0.8	548.00
P4KE400CA	Bi-Dir	342.00	1	380.00	420.00	1	0.8	548.00
P4KE440A	Uni-Dir	376.00	1	418.00	462.00	1	0.7	602.00
P4KE440CA	Bi-Dir	376.00	1	418.00	462.00	1	0.7	602.00
P4KE480A	Uni-Dir	408.00	1	456.00	504.00	1	0.6	658.00
P4KE480CA	Bi-Dir	408.00	1	456.00	504.00	1	0.6	658.00
P4KE510A	Uni-Dir	434.00	1	485.00	535.00	1	0.6	698.00
P4KE510CA	Bi-Dir	434.00	1	485.00	535.00	1	0.6	698.00
P4KE530A	Uni-Dir	450.00	1	503.50	556.50	1	0.6	725.00
P4KE530CA	Bi-Dir	450.00	1	503.50	556.50	1	0.6	725.00
P4KE540A	Uni-Dir	459.00	1	513.00	567.00	1	0.5	740.00
P4KE540CA	Bi-Dir	459.00	1	513.00	567.00	1	0.5	740.00
P4KE550A	Uni-Dir	467.00	1	522.50	557.50	1	0.5	760.00
P4KE550CA	Bi-Dir	467.00	1	522.50	557.50	1	0.5	760.00

**Typical Characteristics** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)



## Package Dimensions



## Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
P4KE Series	DO-41	Tape and BOX	5000pcs / BOX	EIA STD RS-481

## Revision history

Date	Revision	Changes
23-May-2012	1.0	Initial release

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