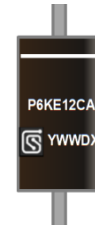


## Features

- 600W peak pulse power capability at 10/1000 $\mu$ s waveform, repetition rate (duty cycles):0.01%
- Excellent clamping capability
- Typical failure mode is a short circuit condition for current events exceeding component rating
- Plastic package is flammability rated V-0 per UL-94
- IEC61000-4-2 +/-30kV both contact and air
- IEC61000-4-4 50A(5/50nS)

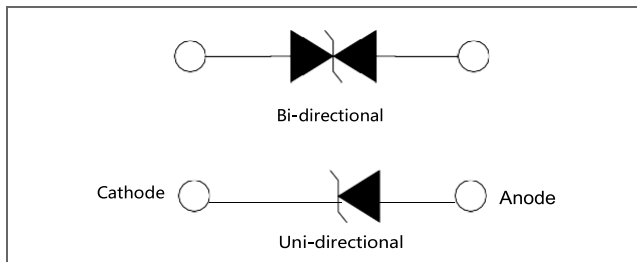
**RoHS**  
Compliant



## Applications

TVS devices are ideal for the transient voltage clamp protection of I/O Interfaces, DC power line bus and other circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

## Function Diagram




Maximum Ratings and Thermal Characteristics (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10/1000 $\mu$ s Waveform (Fig.3)-- single die	P <sub>PPM</sub>	600	W
Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10/1000 $\mu$ s Waveform (Fig.3)-- stack die	P <sub>PPM</sub>	800	W
Power Dissipation on Infinite Heat Sink at T <sub>L</sub> =50°C	P <sub>D</sub>	5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 1)	I <sub>FSM</sub>	100	A
Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only(Note 2)	V <sub>F</sub>	3.5/5	V
Operating Temperature Range	T <sub>J</sub>	-55 to 150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to 150	°C

AGENCY	AGENCY FILE NUMBER
	Pending

### Notes:

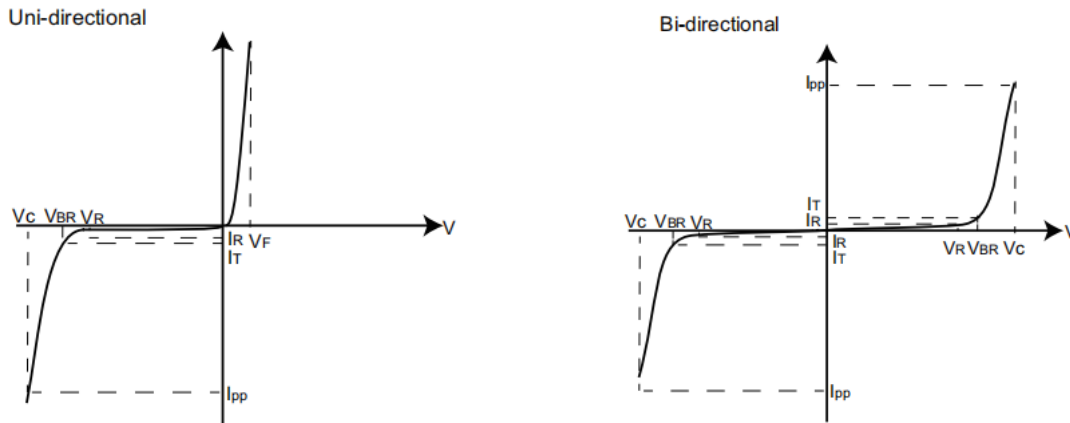
1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.
2. 3.5V for single die, 5V for stack die

**Characteristics (T = 25°C unless otherwise noted)**

Part Number (Uni)	Part Number (Bi)	Reverse Stand off Voltage V <sub>R</sub> (Volts)	Breakdown Voltage V <sub>BR</sub> (Volts) @ I <sub>T</sub>		Test Current I <sub>T</sub> (mA)	Maximum Clamping Voltage V <sub>C</sub> @ I <sub>nn</sub> (V)	Maximum Peak Pulse Current I <sub>pp</sub> (A)	Maximum Reverse Leakage I <sub>R</sub> @ V <sub>R</sub> (μA)	Agency Approval 
			MIN	MAX					
P6KE6.8A	P6KE6.8CA	5.80	6.45	7.14	10	10.5	58.1	1000	
P6KE7.5A	P6KE7.5CA	6.40	7.13	7.88	10	11.3	54.0	500	
P6KE8.2A	P6KE8.2CA	7.02	7.79	8.61	10	12.1	50.4	200	
P6KE9.1A	P6KE9.1CA	7.78	8.65	9.55	1	13.4	45.5	50	
P6KE10A	P6KE10CA	8.55	9.50	10.50	1	14.5	42.1	10	
P6KE11A	P6KE11CA	9.40	10.50	11.60	1	15.6	39.1	5	
P6KE12A	P6KE12CA	10.20	11.40	12.60	1	16.7	36.5	5	
P6KE13A	P6KE13CA	11.10	12.40	13.70	1	18.2	33.5	1	
P6KE15A	P6KE15CA	12.80	14.30	15.80	1	21.2	28.8	1	
P6KE16A	P6KE16CA	13.60	15.20	16.80	1	22.5	27.1	1	
P6KE18A	P6KE18CA	15.30	17.10	18.90	1	25.2	24.2	1	
P6KE20A	P6KE20CA	17.10	19.00	21.00	1	27.7	22.0	1	
P6KE22A	P6KE22CA	18.80	20.90	23.10	1	30.6	19.9	1	
P6KE24A	P6KE24CA	20.50	22.80	25.20	1	33.2	18.4	1	
P6KE27A	P6KE27CA	23.10	25.70	28.40	1	37.5	16.3	1	
P6KE30A	P6KE30CA	25.60	28.50	31.50	1	41.4	14.7	1	
P6KE33A	P6KE33CA	28.20	31.40	34.70	1	45.7	13.3	1	
P6KE36A	P6KE36CA	30.80	34.20	37.80	1	49.9	12.2	1	
P6KE39A	P6KE39CA	33.30	37.10	41.00	1	53.9	11.3	1	
P6KE43A	P6KE43CA	36.80	40.90	45.20	1	59.3	10.3	1	
P6KE47A	P6KE47CA	40.20	44.70	49.40	1	64.8	9.4	1	
P6KE51A	P6KE51CA	43.60	48.50	53.60	1	70.1	8.7	1	
P6KE56A	P6KE56CA	47.80	53.20	58.80	1	77.0	7.9	1	
P6KE62A	P6KE62CA	53.00	58.90	65.10	1	85.0	7.2	1	
P6KE68A	P6KE68CA	58.10	64.60	71.40	1	92.0	6.6	1	
P6KE75A	P6KE75CA	64.10	71.30	78.80	1	103.0	5.9	1	
P6KE82A	P6KE82CA	70.10	77.90	86.10	1	113.0	5.4	1	
P6KE91A	P6KE91CA	77.80	86.50	95.50	1	125.0	4.9	1	
P6KE100A	P6KE100CA	85.50	95.00	105.00	1	137.0	4.5	1	
P6KE110A	P6KE110CA	94.00	105.00	116.00	1	152.0	4.0	1	
P6KE120A	P6KE120CA	102.00	114.00	126.00	1	165.0	3.7	1	
P6KE130A	P6KE130CA	111.00	124.00	137.00	1	179.0	3.4	1	
P6KE150A	P6KE150CA	128.00	143.00	158.00	1	207.0	2.9	1	
P6KE160A	P6KE160CA	136.00	152.00	168.00	1	219.0	2.8	1	
P6KE170A	P6KE170CA	145.00	162.00	179.00	1	234.0	2.6	1	
P6KE180A	P6KE180CA	154.00	171.00	189.00	1	246.0	2.5	1	
P6KE200A	P6KE200CA	171.00	190.00	210.00	1	274.0	2.2	1	
P6KE220A	P6KE220CA	185.00	209.00	231.00	1	328.0	1.9	1	
P6KE250A	-	214.00	237.00	263.00	1	344.0	1.8	1	
	P6KE250CA*	214.00	237.00	263.00	1	344.0	2.4	1	
P6KE300A	-	256.00	285.00	315.00	1	414.0	1.5	1	
	P6KE300CA*	256.00	285.00	315.00	1	414.0	2.0	1	
P6KE350A*	P6KE350CA*	300.00	332.00	368.00	1	482.0	1.7	1	
P6KE400A*	P6KE400CA*	342.00	380.00	420.00	1	548.0	1.5	1	
P6KE440A*	P6KE440CA*	376.00	418.00	462.00	1	602.0	1.4	1	
P6KE480A*	P6KE480CA*	408.00	456.00	504.00	1	658.0	1.3	1	
P6KE510A*	P6KE510CA*	434.00	485.00	535.00	1	698.0	1.2	1	
P6KE520A*	P6KE520CA*	444.60	494.00	546.00	1	717.6	0.84	1	
P6KE530A*	P6KE530CA*	451.00	503.50	556.50	1	725.0	1.2	1	
P6KE540A*	P6KE540CA*	460.00	513.00	567.00	1	740.0	1.1	1	
P6KE550A*	P6KE550CA*	468.00	522.50	577.50	1	760.0	1.1	1	
P6KE600A*	P6KE600CA*	512.00	570.00	630.00	1	828.0	1.0	1	

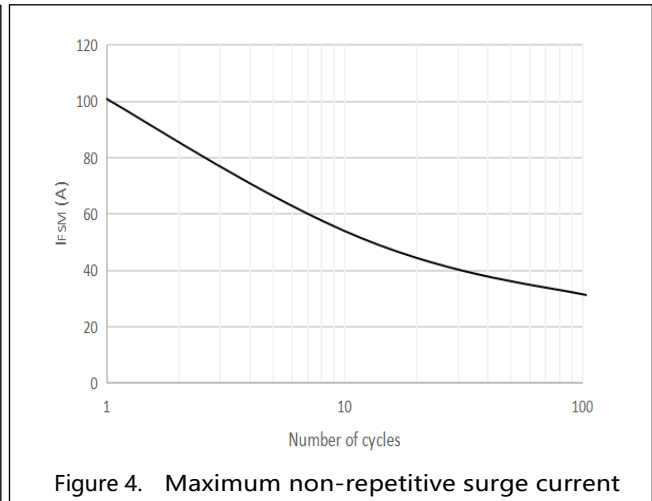
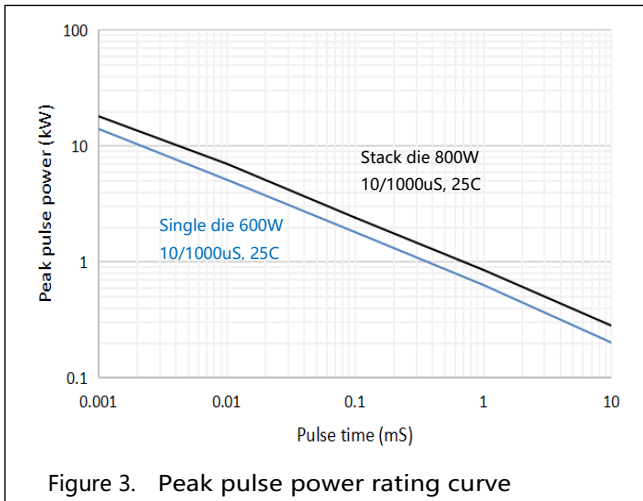
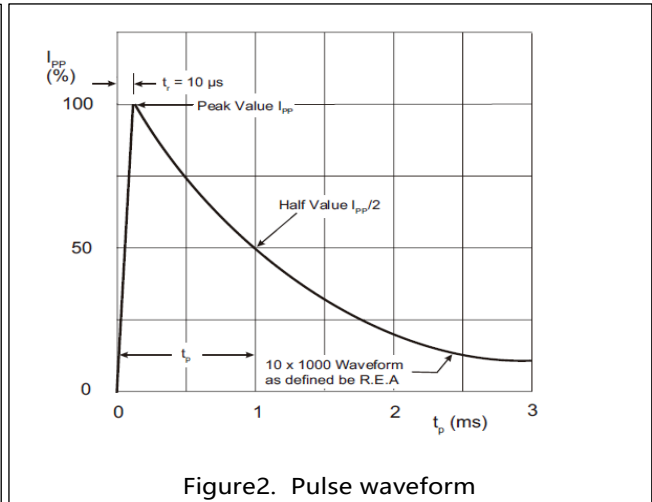
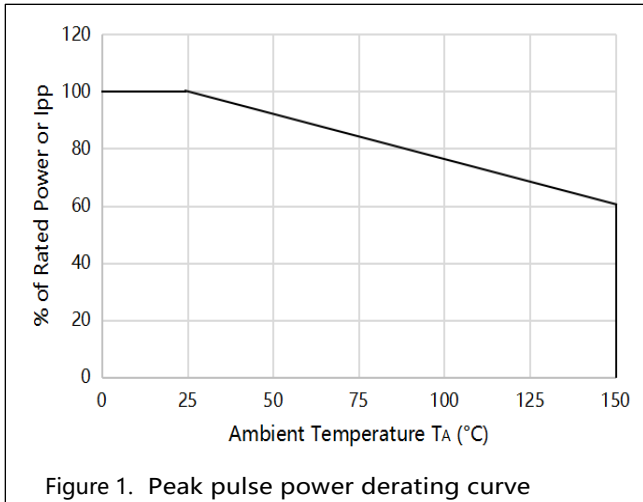
For stacked-die parts, use \* to label the part number.

I-V Curve Characteristics



- $P_{PPM}$  Peak Pulse Power Dissipation -- Max power dissipation
- $V_R$  Stand-off Voltage -- Maximum voltage that can be applied to the TVS without operation
- $V_{BR}$  Breakdown Voltage -- Maximum voltage that flows through the TVS at a specified test current ( $I_T$ )
- $V_C$  Clamping Voltage -- Peak voltage measured across the TVS at a specified  $I_{PPM}$  (peak impulse current)
- $I_R$  Reverse Leakage Current -- Current measured at  $V_R$
- $V_F$  Forward Voltage Drop for Uni-directional

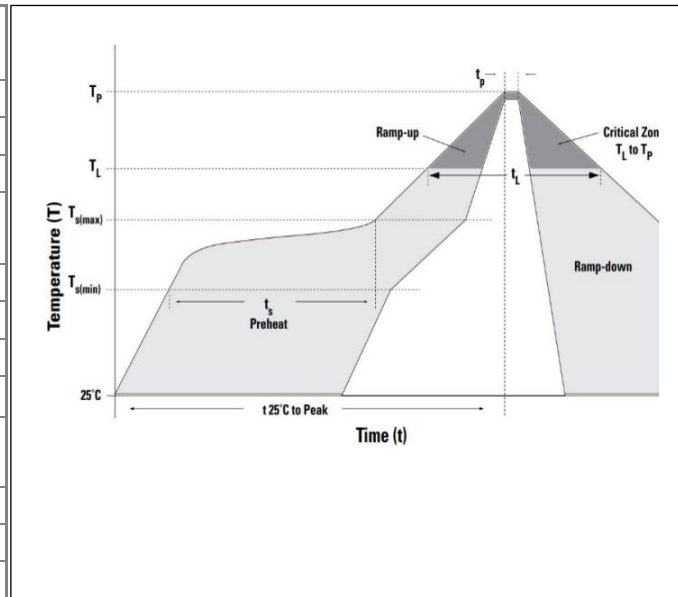
**Ratings and Characteristic Curves (T = 25°C unless otherwise noted)**



Soldering Parameters

Soldering profile

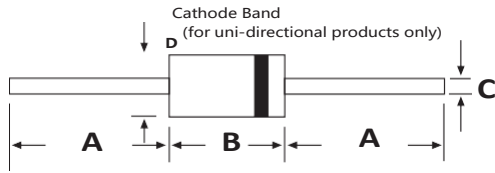
Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ( $T_{S(min)}$ )	150°C
	- Temperature Max ( $T_{S(max)}$ )	200°C
	- Time (min to max) ( $t_S$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_A$ ) to peak)		3°C/second max
$T_{S(max)}$ to $T_A$ - Ramp-up Rate		3°C/second max
Reflow	- Temperature ( $T_A$ ) (Liquidus)	217°C
	- Time (min to max) ( $t_S$ )	60 – 150 seconds
Peak Temperature ( $T_P$ )		260+0/-5 °C
Time within 5°C of actual peak Temperature ( $t_P$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_P$ )		8 minutes Max.
Do not exceed		260°C



Flow/Wave Soldering (Solder Dipping)

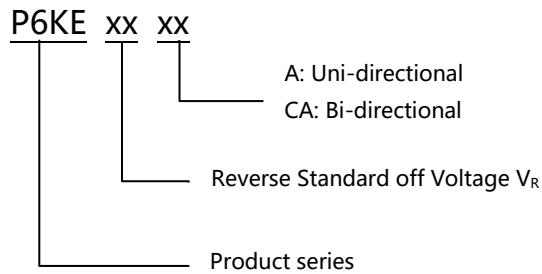
Peak Temperature:	265°C
Dipping Time:	10 seconds
Soldering:	1 time

Dimensions

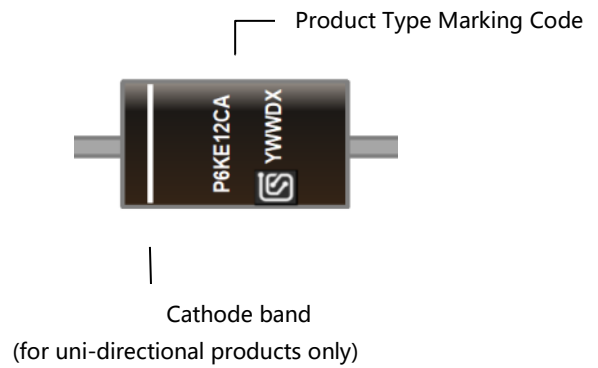


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
<b>A</b>	1.000	-	25.40	-
<b>B</b>	0.230	0.300	5.80	7.60
<b>C</b>	0.028	0.034	0.71	0.86
<b>D</b>	0.104	0.140	2.60	3.60

Part Numbering



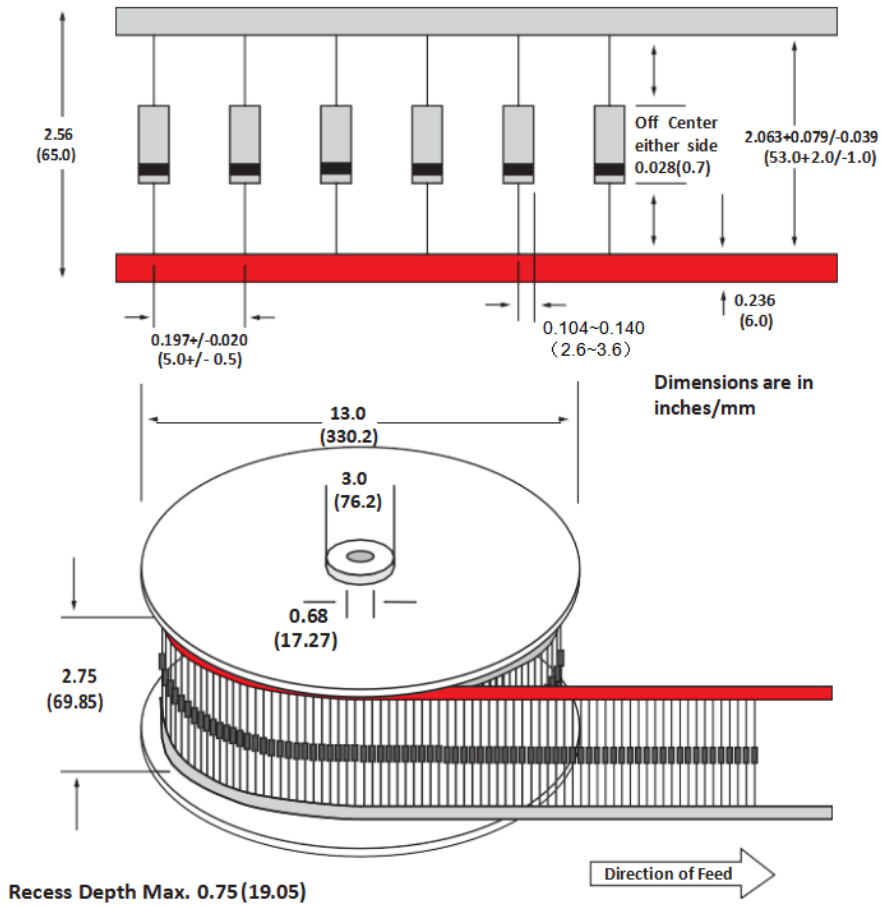
Part Marking



Packing

Part number	Package name	Small packing quantity	Packing method
P6KEXXX	DO-15	4000	Tape & Reel

Tape and Reel Specification



Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	14-July-2021
1.1	Change marking logo location	27-May-2021

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