

TVS Diode – 30KPA Series

Features

- Plastic package, excellent insulation strength.
- Glass passivated chip junction in P600 package.
- Excellent voltage clamping capability.
- Low Zener impedance.
- 30000W peak pulse power capability on 10/1000 μ s waveform.
- Typical leakage current less than 1 μ A above 13V.
- Very fast response time, typically less than 1.0ps from 0 volt to V_{BR} minimum.
- High temperature soldering guaranteed: 265 $^{\circ}$ C/10 sec.
- MSL: JEDEC-J-STD-020, Level 1

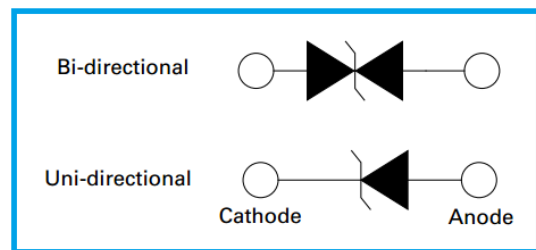


Applications

- I/O interface, V_{CC} bus
- Telecom
- Industrial and consumer electronic applications.
- Relay and electromagnetic valve surge absorption.

Agency Approval

- UL file no.: E474915



Mechanical and Physical Data

- Case: JEDEC P600 molded plastic.
- Axial leaded, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denoted cathode except bidirectional.

Maximum Ratings and Thermal Characteristics

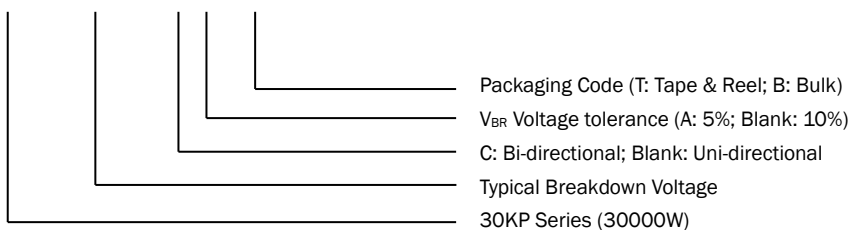
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note 1, Fig.1).	P_{PPM}	Min 30000	Watt
Peak Pulse Current of 10/1000 μ s waveform (Note 1, Fig.3).	I_{PPM}	See Table	Amp
Steady State Power Dissipation at $T_L = 75^{\circ}$ C, Lead lengths 0.375", (9.5mm) (Fig.5).	$P_{M(AV)}$	8.0	Watt
Peak Forward Surge Current, 8.3 ms Single Half Sine Wave Superimposed on Rated Load (Note 2, Fig.6).	I_{FSM}	400	Amp
Operating Junction and Storage Temperature Range.	T_J, T_{STG}	-55~175	$^{\circ}$ C

Note:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^{\circ}$ C per Fig.2.
2. 8.3ms single half sine wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

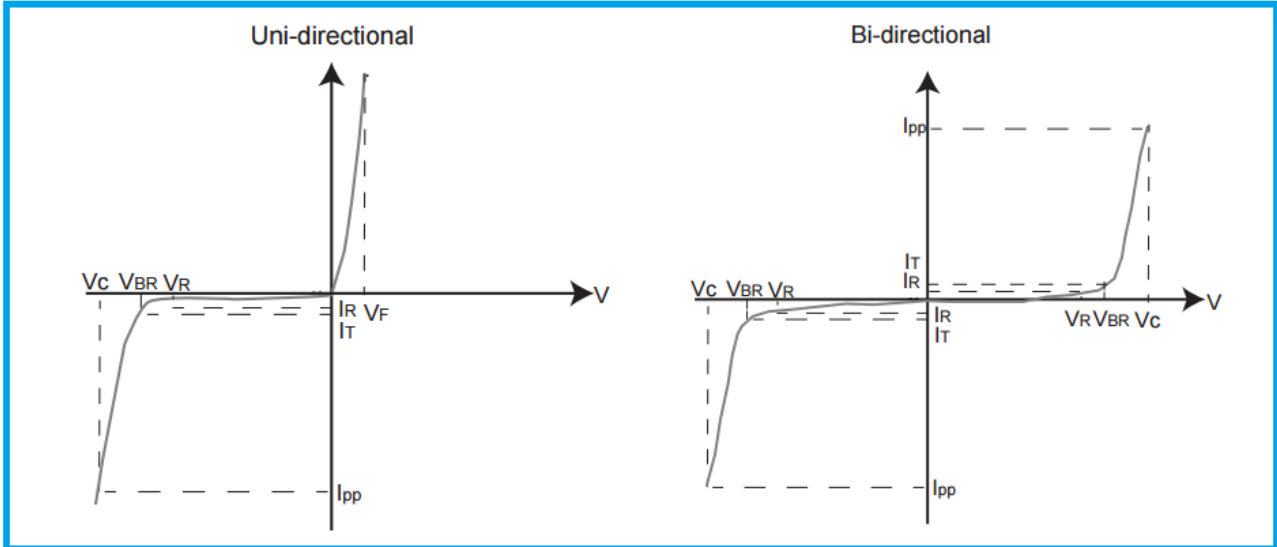
Part Number Code

30KPA □□□ CA - □



TVS Diode – 30KPA Series

I-V Curve Characteristics



P_{PPM} Peak Pulse Power Dissipation – Maximum 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

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Electrical Characteristics

Part Number		Reverse Stand Off Voltage V_R (V)	Breakdown Voltage V_{BR} (V) @ I_T	Test Current I_T (mA)	Maximum Clamping Voltage V_C (V) @ I_{PP}	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R (μ A) @ V_R
Uni	Bi		Min.				
30KPA28A	30KPA28CA	28.0	31.28	50	50.0	606.0	5000
30KPA30A	30KPA30CA	30.0	33.51	50	55.2	548.9	5000
30KPA33A	30KPA33CA	33.0	36.90	50	58.5	517.9	5000
30KPA36A	30KPA36CA	36.0	40.20	50	61.8	490.3	5000
30KPA39A	30KPA39CA	39.0	43.60	5	67.2	450.9	2000
30KPA42A	30KPA42CA	42.0	46.90	5	72.0	420.8	1000
30KPA43A	30KPA43CA	43.0	48.00	5	73.0	415.1	1000
30KPA45A	30KPA45CA	45.0	50.30	5	77.4	391.5	250
30KPA48A	30KPA48CA	48.0	53.60	5	81.6	371.3	150
30KPA51A	30KPA51CA	51.0	57.00	5	86.4	350.7	50
30KPA54A	30KPA54CA	54.0	60.30	5	91.4	331.5	20
30KPA58A	30KPA58CA	58.0	64.80	5	92.4	327.9	20
30KPA60A	30KPA60CA	60.0	67.00	5	102.0	297.1	15
30KPA64A	30KPA64CA	64.0	71.50	5	104.0	291.3	10
30KPA66A	30KPA66CA	66.0	73.70	5	107.0	283.2	2
30KPA70A	30KPA70CA	70.0	78.20	5	109.0	278.0	2
30KPA71A	30KPA71CA	71.0	79.30	5	111.5	271.7	2
30KPA72A	30KPA72CA	72.0	80.40	5	114.0	265.8	2
30KPA75A	30KPA75CA	75.0	83.80	5	119.4	253.8	2
30KPA78A	30KPA78CA	78.0	87.10	5	129.0	234.9	2
30KPA84A	30KPA84CA	84.0	93.80	5	139.2	217.7	2
30KPA90A	30KPA90CA	90.0	100.5	5	146.4	207.0	2
30KPA96A	30KPA96CA	96.0	107.2	5	156.0	194.2	2
30KPA102A	30KPA102CA	102.0	113.9	5	165.6	183.0	2
30KPA108A	30KPA108CA	108.0	120.6	5	175.2	172.9	2
30KPA120A	30KPA120CA	120.0	134.0	5	194.4	155.9	2
30KPA132A	30KPA132CA	132.0	147.4	5	213.0	142.3	2
30KPA144A	30KPA144CA	144.0	160.8	5	223.2	135.8	2
30KPA150A	30KPA150CA	150.0	167.6	5	233.4	129.8	2
30KPA156A	30KPA156CA	156.0	174.3	5	245.0	123.7	2
30KPA160A	30KPA160CA	160.0	178.7	5	252.6	120.0	2
30KPA168A	30KPA168CA	168.0	187.7	5	272.4	111.2	2
30KPA170A	30KPA170CA	170.0	189.9	5	275.0	110.2	2
30KPA180A	30KPA180CA	180.0	201.1	5	290.4	104.3	2
30KPA198A	30KPA198CA	198.0	221.2	5	319.8	94.7	2
30KPA216A	30KPA216CA	216.0	241.3	5	348.6	86.9	2
30KPA240A	30KPA240CA	240.0	268.1	5	387.0	78.3	2
30KPA258A	30KPA258CA	258.0	288.2	5	416.4	72.8	2
30KPA260A	30KPA260CA	260.0	290.4	5	416.0	72.8	2
30KPA270A	30KPA270CA	270.0	301.6	5	436.2	69.5	2
30KPA280A	30KPA280CA	280.0	312.8	5	464.0	65.3	2
30KPA288A	30KPA288CA	288.0	321.7	5	469.9	64.5	2

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Ratings and Characteristic Curves

Fig 1 - Peak Pulse Power Rating Curve

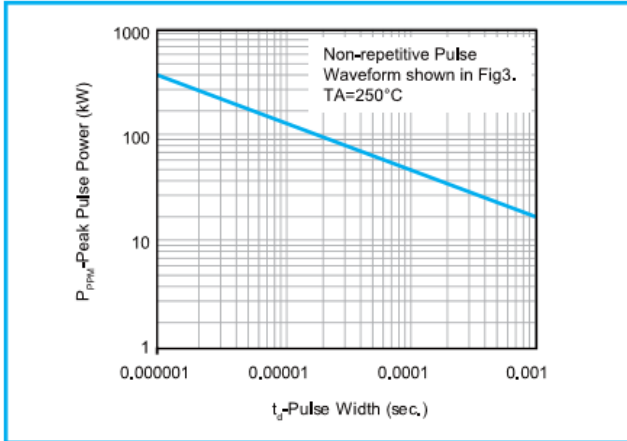


Fig 2 - Pulse Derating Curve

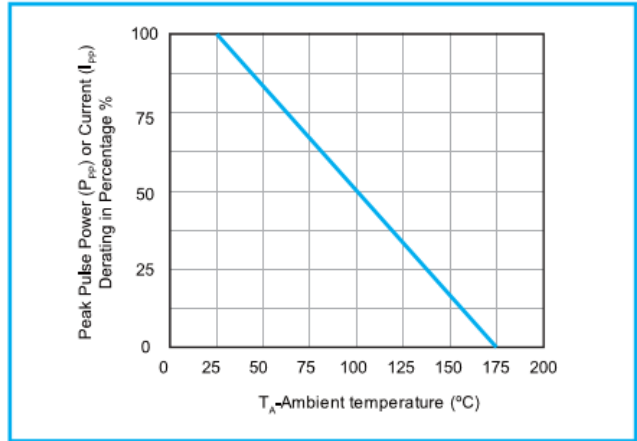


Fig 3 - Pulse Waveform

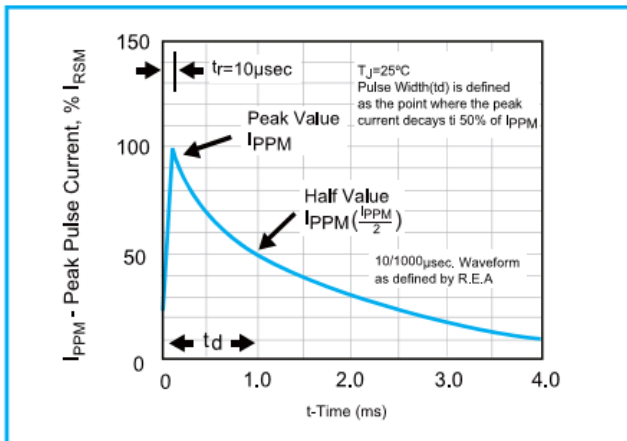


Fig 4 - Typical Junction Capacitance Uni-directional

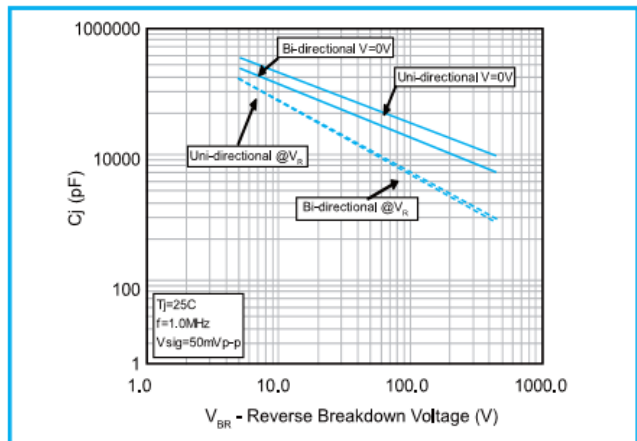


Fig 5 - Steady State Power Dissipation Derating Curve

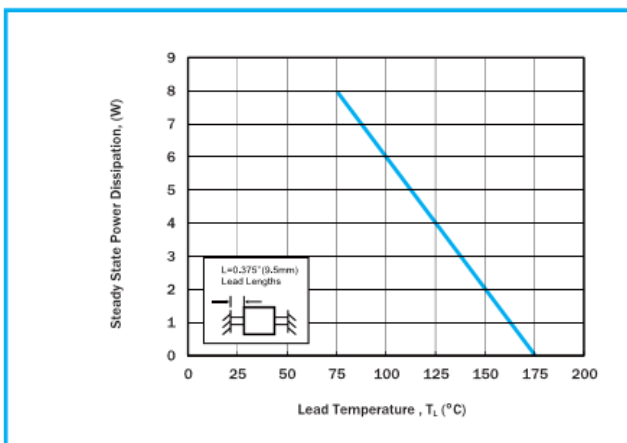
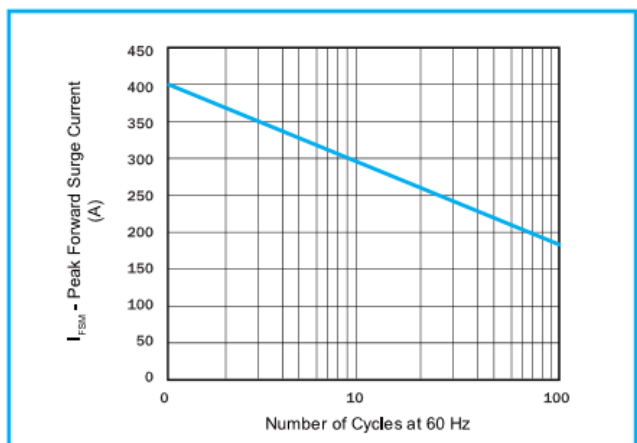
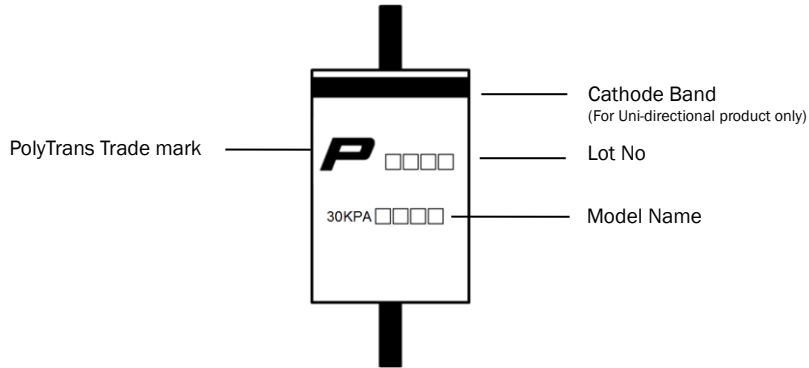


Fig 6 - Maximum Non-Repetitive Forward Surge Current (Uni-directional Only)

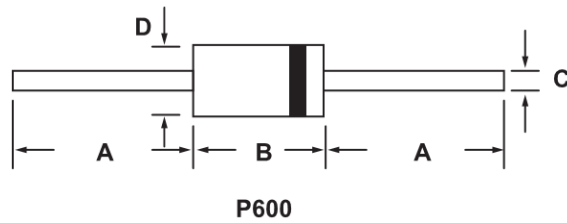


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Marking Definitions



Physical Dimensions



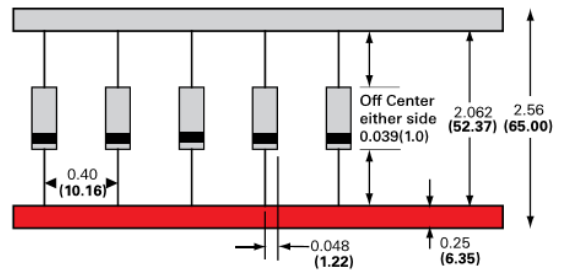
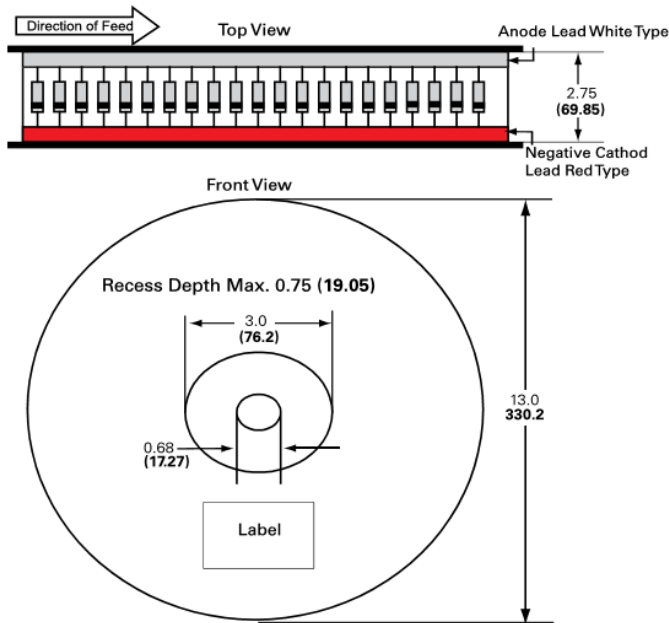
Dimension	Millimeters		Inches	
	Min	Max	Min	Max
A	25.40	-	1.000	-
B	8.60	9.10	0.340	0.360
C	1.22	1.32	0.048	0.052
D	8.60	9.10	0.340	0.360

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Packaging Information

Part Number	Packaging Code	Component Package	Quantity	Packaging Option	Packaging Specification
30KPA Series	T	P600	800	Tape & Reel	EIA STD RS-296
30KPA Series	B	P600	100	Bulk	-

Tape and Reel Specifications



Dimensions are in inches/mm