

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°C/10 sec.
- MSL: JEDEC-J-STD-020, Level 1

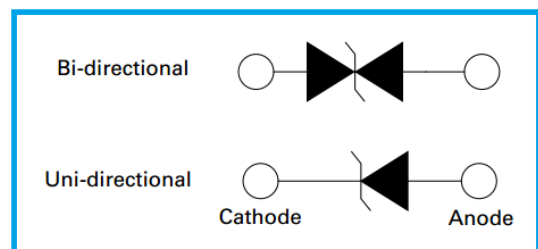


Applications

- 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

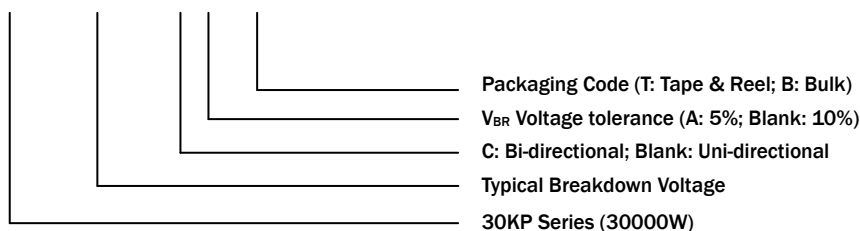
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note 1, Fig.1).	P_{PPM}	Min 30000	Watt
Peak Pulse Current of 10/1000 μ s waveform (Note 1, Fig.3).	I_{PPM}	See Table	Amp
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$, Lead lengths 0.375", (9.5mm) (Fig.5).	$P_{M(AV)}$	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	$^\circ\text{C}$

Note:

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

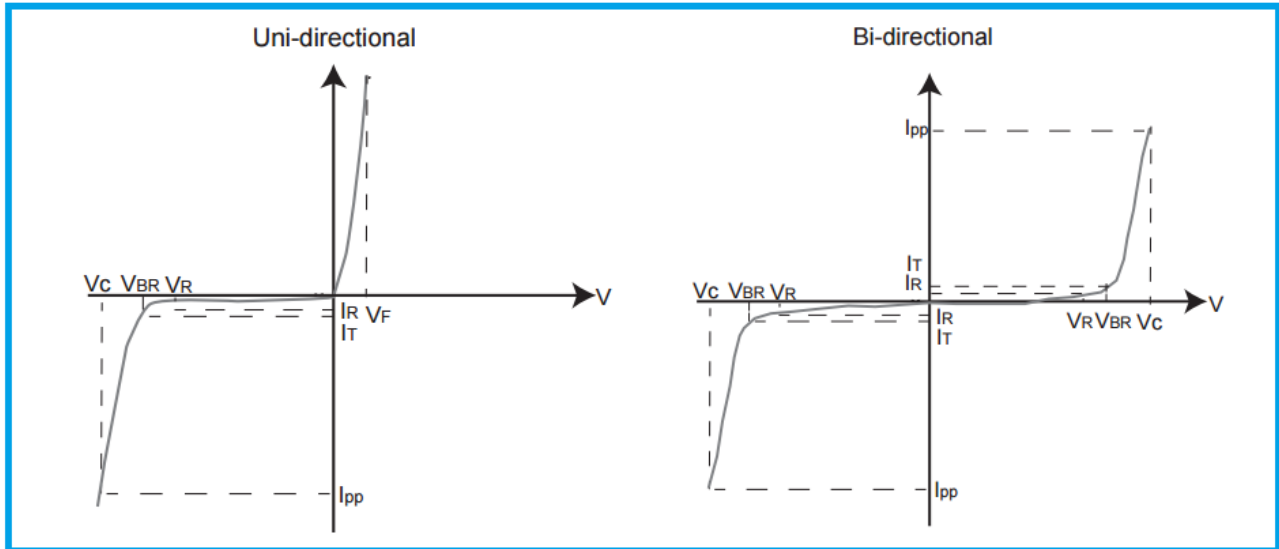
Part Number Code

30KPA □□□ C A - □



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

TVS Diode – 30KPA Series

Electrical Characteristics

Part Number		Reverse Stand Off Voltage V_R	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	UL
Uni	Bi	(V)	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

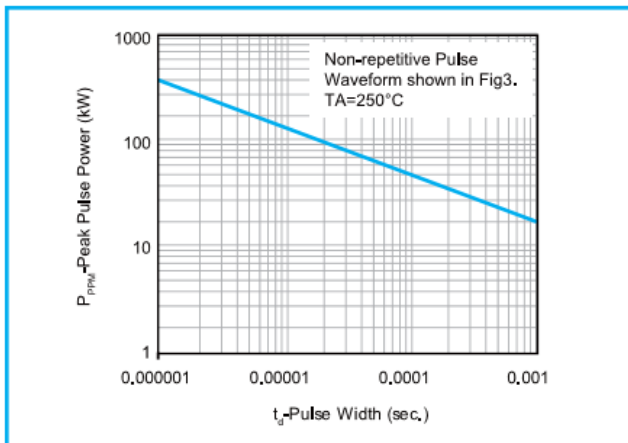


Fig 2 - Pulse Derating Curve

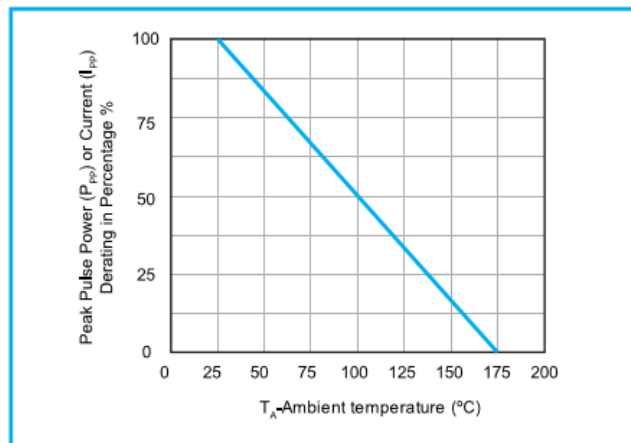


Fig 3 - Pulse Waveform

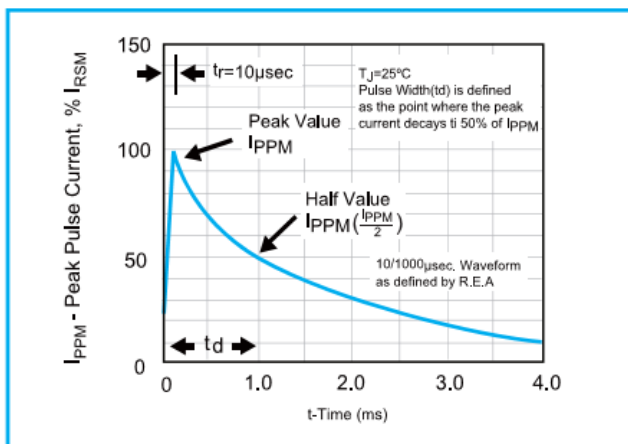


Fig 4 - Typical Junction Capacitance Uni-directional

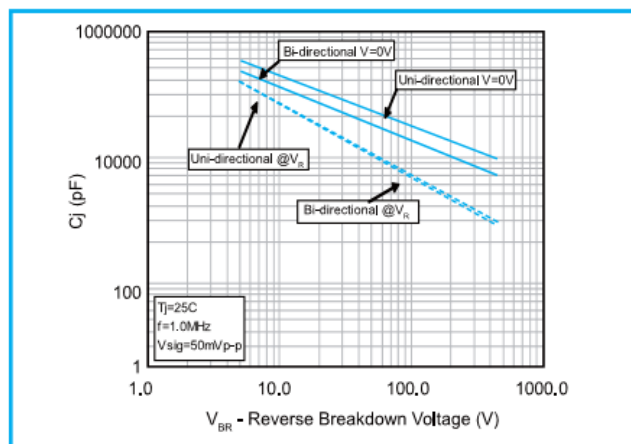


Fig 5 - Steady State Power Dissipation Derating Curve

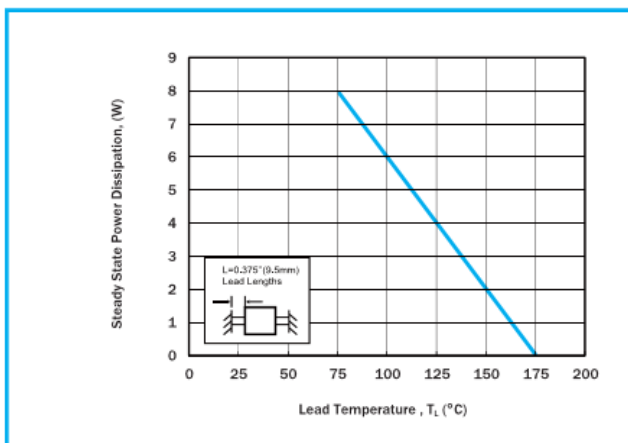
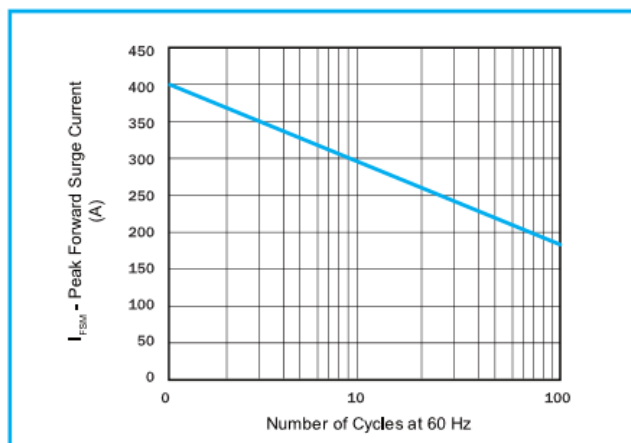
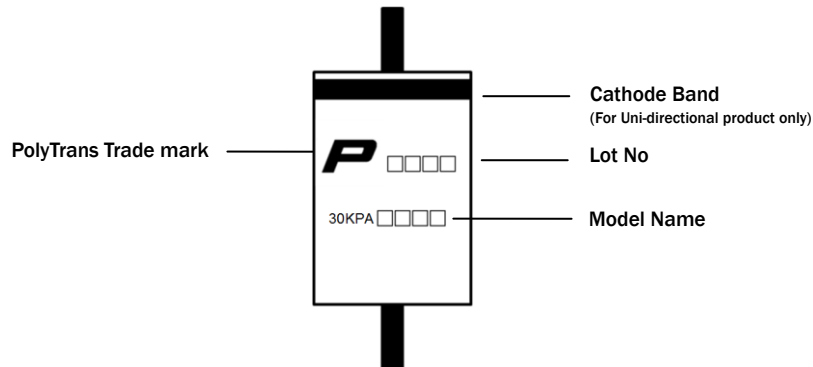


Fig 6 - Maximum Non-Repetitive Forward Surge Current (Uni-directional Only)

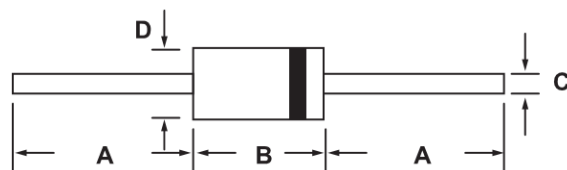


TVS Diode – 30KPA Series

Marking Definitions



Physical Dimensions



P600

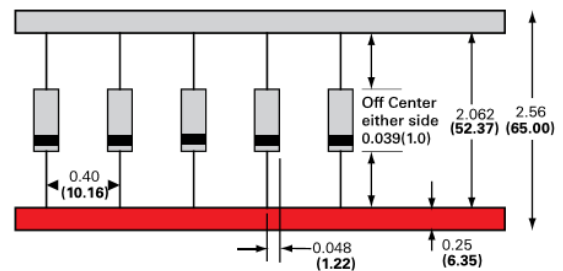
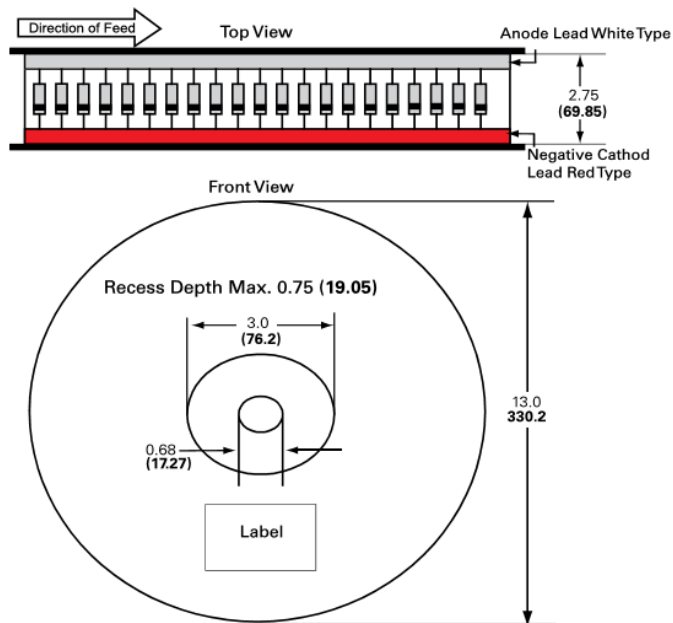
Dimension	Millimeters		Inches	
	Min	Max	Min	Max
A	25.40	-	1.000	-
B	8.60	9.10	0.340	0.360
C	1.22	1.32	0.048	0.052
D	8.60	9.10	0.340	0.360

TVS Diode – 30KPA Series

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