

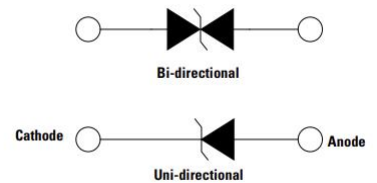


TVS Diodes 30KPA series

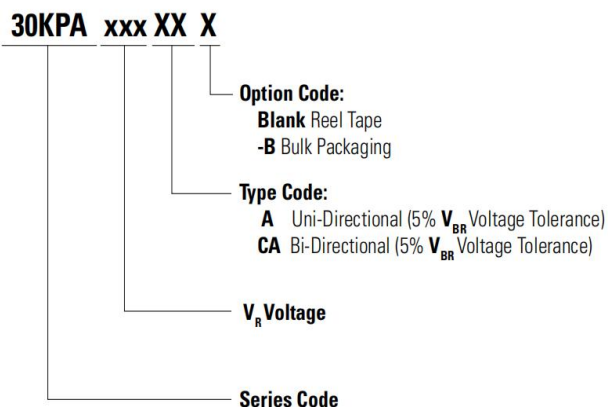
Transient Voltage Suppressors

Features

- ◆ 30KW peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%
- ◆ Low incremental surge impedance
- ◆ Excellent clamping capability
- ◆ Typical I_R less than 2 μ A when V_{BR} min>73V
- ◆ High Temperature soldering guaranteed: 265 $^{\circ}$ C/40 seconds/.375", (9.5mm) lead length, 5lbs (2.3kg) tension.
- ◆ Plastic package has underwriters laboratory flammability 94V-0
- ◆ Meets MSL level 1, per J-STD-020
- ◆ Meet HF and RoHS compliant



Part Number Coding System



Applications

- ◆ I/O interface
- ◆ AC/DC power supply
- ◆ Low frequency signal transmission line(RS232,RS485,etc.)

Mechanical Data

- ◆ Case: JEDEC P600 Moulded plastic, Axial lead
- ◆ Polarity: Color band denotes positive end (cathode) except bi-directional models

Maximum Rating and Characteristics

Parameters at 25°C ambient temperature unless otherwise Noted.

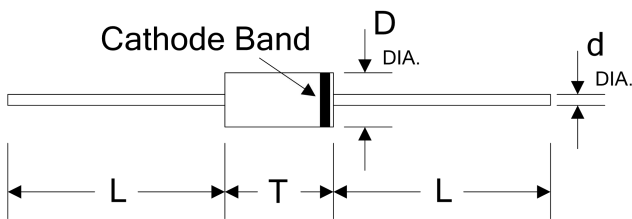
Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation by 10/1000μs Test Waveform (Note 1)	P_{PPM}	Minimum 30000	Watts
Peak pulse current of at 10/1000μs waveform (Note 1, Fig.2)	I_{PPM}	See Table	Amps
Steady State Power Dissipation on Infinite Heat Sink at $T_L = 75^\circ\text{C}$	P_D	8.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional Only (Note 2)	I_{FSM}	400	Amps
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +175	$^\circ\text{C}$

Notes:

- 1.Non-repetitive current pulse, per Fig.2 and derated above $T_A = 25^\circ\text{C}$ per Fig.1.
- 2.8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

Dimensions (P600)

Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
L	25.40	-	1.000	-
T	8.60	9.10	0.340	0.360
D	8.60	9.10	0.340	0.360
d	1.22	1.36	0.048	0.054



Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage @ I_T	Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}
Unidirectional	Bidirectional	$V_{RWM}(V)$	$V_{BR}(V)$	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
30KPA28A	30KPA28CA	28.0	31.28~34.57	50	50.0	606.0	5000
30KPA30A	30KPA30CA	30.0	33.51~37.04	50	55.2	548.9	5000
30KPA33A	30KPA33CA	33.0	36.90~40.78	50	58.5	517.9	5000
30KPA36A	30KPA36CA	36.0	40.20~44.43	50	61.8	490.3	5000
30KPA39A	30KPA39CA	39.0	43.60~48.19	20	67.2	450.9	2000
30KPA42A	30KPA42CA	42.0	46.90~51.84	10	72.0	420.8	1000
30KPA43A	30KPA43CA	43.0	48.00~53.05	10	73.0	415.1	1000
30KPA45A	30KPA45CA	45.0	50.30~55.59	5	77.4	391.5	250
30KPA48A	30KPA48CA	48.0	53.60~59.24	5	81.6	371.3	150
30KPA51A	30KPA51CA	51.0	57.00~63.00	5	86.4	350.7	50
30KPA54A	30KPA54CA	54.0	60.30~66.65	5	91.4	331.5	20
30KPA58A	30KPA58CA	58.0	64.80~71.62	5	92.4	327.9	20
30KPA60A	30KPA60CA	60.0	67.00~74.05	5	102.0	297.1	15
30KPA64A	30KPA64CA	64.0	71.50~79.03	5	104.0	291.3	10
30KPA66A	30KPA66CA	66.0	73.70~81.46	5	107.0	283.2	2
30KPA70A	30KPA70CA	70.0	78.20~86.43	5	109.0	278.0	2
30KPA71A	30KPA71CA	71.0	79.30~87.65	5	111.5	271.7	2
30KPA72A	30KPA72CA	72.0	80.40~88.86	5	114.0	265.8	2
30KPA75A	30KPA75CA	75.0	83.80~92.62	5	119.4	253.8	2
30KPA78A	30KPA78CA	78.0	87.10~96.27	5	129.0	234.9	2

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage @ I_T	Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}
Unidirectional	Bidirectional	$V_{RWM}(V)$	$V_{BR}(V)$	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
30KPA84A	30KPA84CA	84.0	93.80~103.67	5	139.2	217.7	2
30KPA90A	30KPA90CA	90.0	100.50~111.08	5	146.4	207.0	2
30KPA96A	30KPA96CA	96.0	107.20~118.48	5	156.0	194.2	2
30KPA102A	30KPA102CA	102.0	113.90~125.89	5	165.6	183.0	2
30KPA108A	30KPA108CA	108.0	120.60~133.29	5	175.2	172.9	2
30KPA120A	30KPA120CA	120.0	134.00~148.11	5	194.4	155.9	2
30KPA132A	30KPA132CA	132.0	147.40~162.92	5	213.0	142.3	2
30KPA144A	30KPA144CA	144.0	160.80~177.73	5	223.2	135.8	2
30KPA150A	30KPA150CA	150.0	167.60~185.24	5	233.4	129.8	2
30KPA156A	30KPA156CA	156.0	174.30~192.65	5	245.0	123.7	2
30KPA160A	30KPA160CA	160.0	178.70~197.51	5	252.6	120.0	2
30KPA168A	30KPA168CA	168.0	187.70~207.46	5	272.4	111.2	2
30KPA170A	30KPA170CA	170.0	189.90~209.89	5	275.0	110.2	2
30KPA180A	30KPA180CA	180.0	201.10~222.27	5	290.4	104.3	2
30KPA198A	30KPA198CA	198.0	221.20~244.48	5	319.8	94.7	2
30KPA216A	30KPA216CA	216.0	241.30~266.70	5	348.6	86.9	2
30KPA240A	30KPA240CA	240.0	268.10~296.32	5	387.0	78.3	2
30KPA258A	30KPA258CA	258.0	288.20~318.54	5	416.4	72.8	2
30KPA260A	30KPA260CA	260.0	290.40~320.97	5	416.0	72.8	2
30KPA270A	30KPA270CA	270.0	301.60~333.35	5	436.2	69.5	2
30KPA280A	30KPA280CA	280.0	312.80~345.73	5	464.0	65.3	2
30KPA288A	30KPA288CA	288.0	321.70~355.56	5	469.9	64.5	2
30KPA300A	30KPA300CA	300	334.00~367.40	5	484.0	62.0	2
30KPA320A	30KPA320CA	320	357.40~391.40	5	530.0	57.2	2
30KPA350A	30KPA350CA	350	391.00~428.10	5	567.0	53.4	2
30KPA360A	30KPA360CA	360	402.10~440.30	5	640.0	47.3	2

Notes: 1. For C Type having reverse stand-off voltage of 60V and less, The IR limit is double.

2. For parts without A, the V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts, the parts without A are currently available, but not recommended for new designs. The parts with A are preferred.

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

Figure 1. Peak Pulse Power Derating Curve

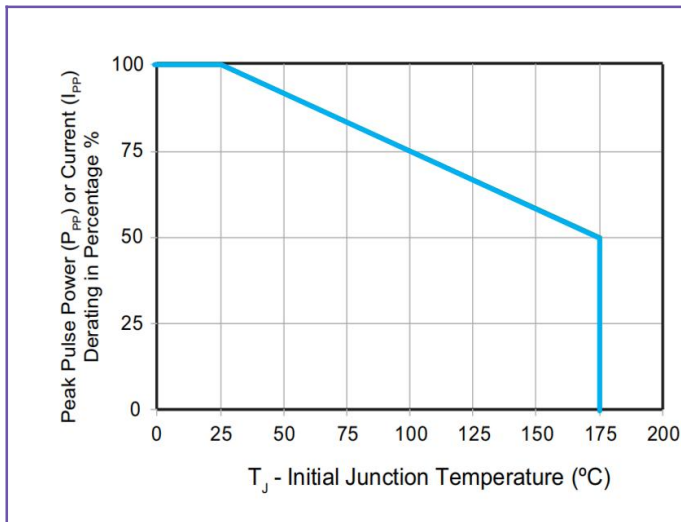


Figure 2. Pulse Waveform

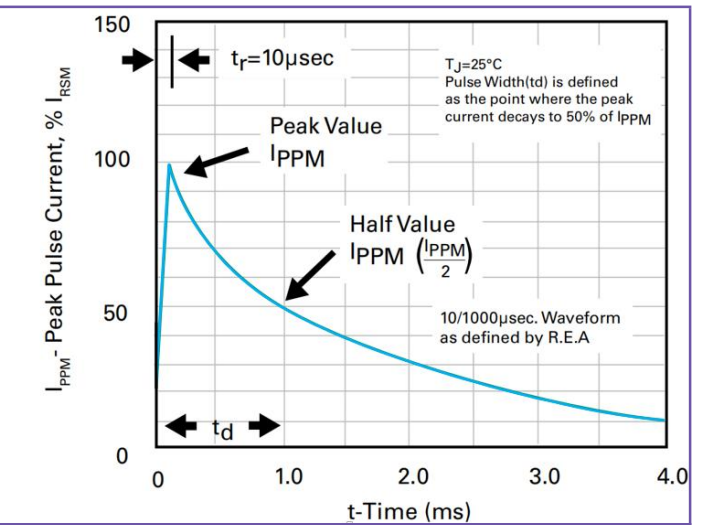


Figure 3. Typical Junction Capacitance

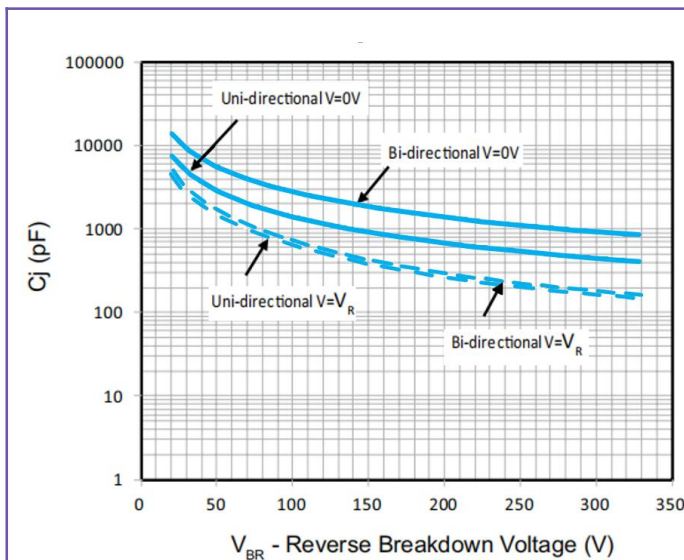


Figure 4. Typical Transient Thermal Impedance

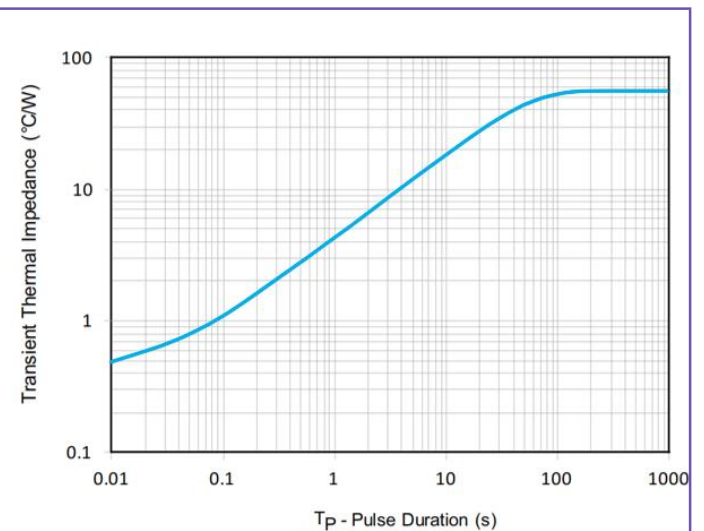


Figure 5. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

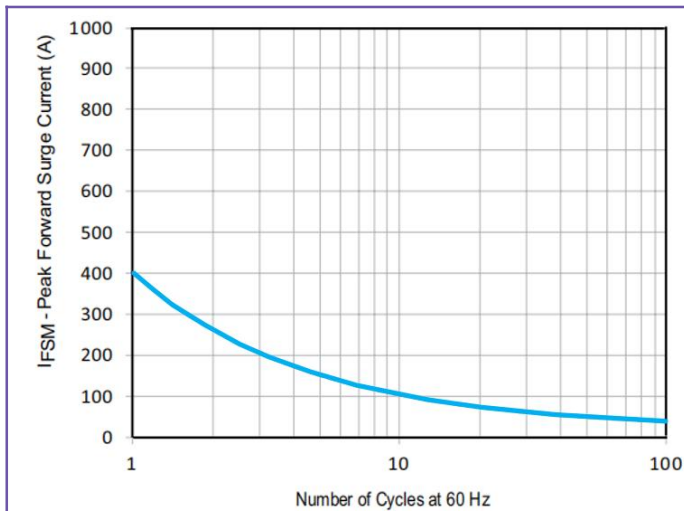
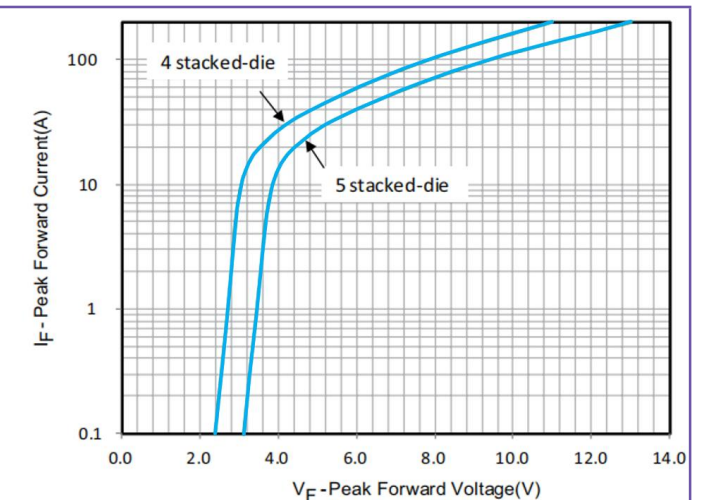
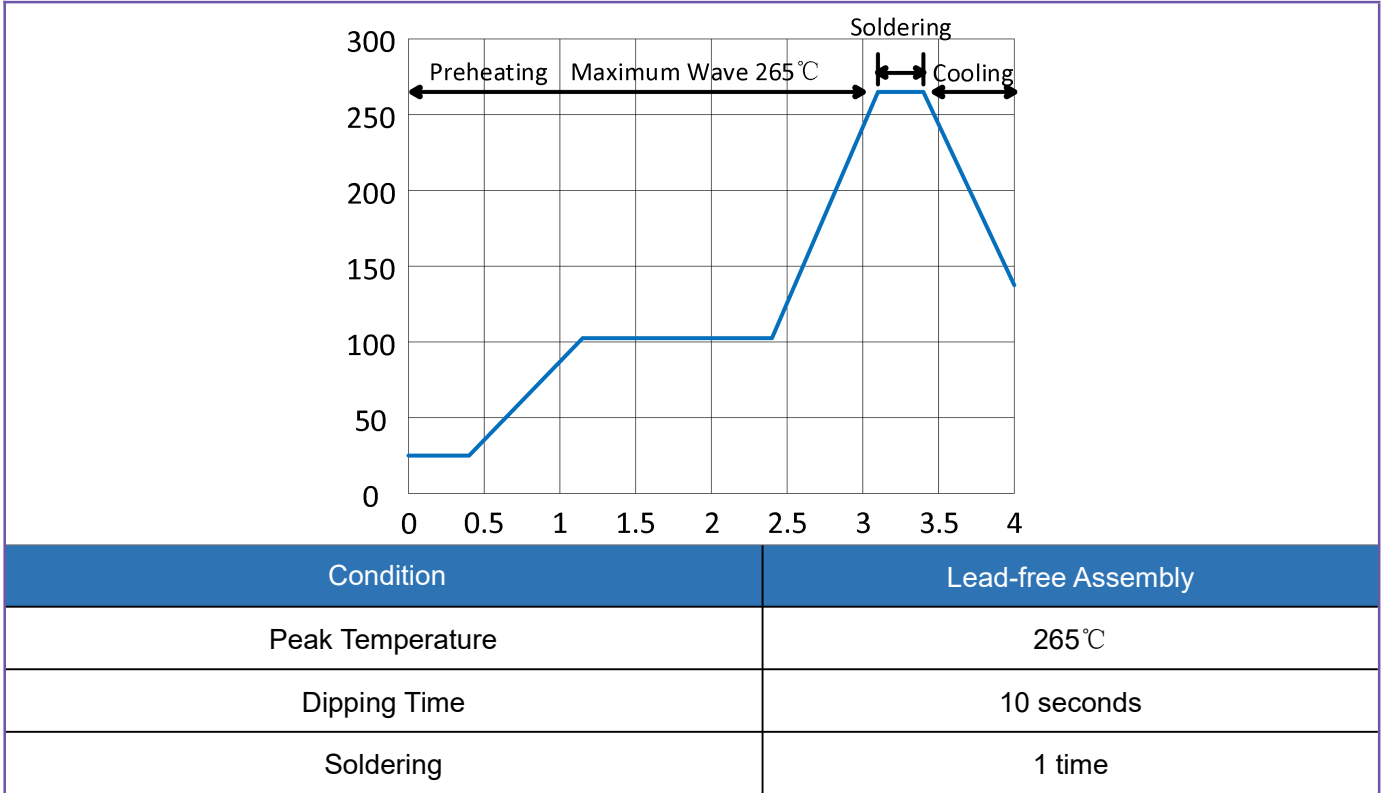


Figure 6. Peak Forward Voltage Drop vs Peak Forward Current (Typical Values)



Wave Soldering Parameters



Reliability

Items	Standards
Terminal strength	MIL-STD-750 Method 2036
Mechanical shock	JESD22-B104
Vibration	JESD22-B103
High Temp. Storage	JESD22-A103
High Temp Reverse Bias	JESD22-A108
Temperature Cycling	JESD22-A104
High Temp High Humidity Reverse Bias	JESD22-A101
Resistance to solder heat	JESD22-B106