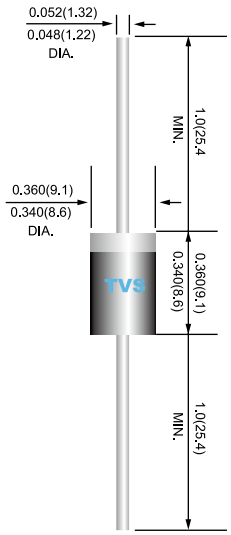
Axial Leaded - 20000W > 20KPA20~300CA Series

The 20KPA Series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- Halogen-free
- Rohs compliant
- Typical maximum temperature coefficient ΔV_{BR} = 0.1% x V_{BR}@25°C x ΔT
- Glass passivated Chip junction in P600 package
- 5000W peak pulse capadility at 10×1000μs waveform, repetition rate(duty cycles):0.01%
- Fast response time:typically less than 1.0ps from 0 Volts to BV min
- Excellent clamping capability
- Low incremental surge resistance
- Typical I_R less than 5μA above 12V
- High temperature soldering guaranteed: 260°C/40 seconds / 0.375",(9.5mm) lead length, 5lbs., (2.3kg) tension
- Plastic package has underwriters laboratory flammability classification 94v-0

P600 **unit:inch(mm)**



Applications

TVS devices are ideal for the protection of I/O interfaces, V_{CC} bus and other vulnerable circuits used in telecom,computer, industrial and consumer electronic applications.

Maximum Ratings And Characteristics (TA=25°C unless otherwise noted)

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation by 10x1000μs test waveform (Fig.1)(Note 1)	P_{PPM}	20000	Watts
Steady State Power Dissipation on inifinite heat sink at TL=75ºC (Fig. 5)	P_D	8	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional only (Note 2)	I_{FSM}	400	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 3)	V_F	3.5/5.0	V
Operating junction and Storage Temperature Range.	T_J,T_{STG}	-55 to 175	°C
Typical Thermal Resistance Junction to Lead	R_{uJL}	8.0	°C/W
Typical Thermal Resistance Junction to Ambient	R_{uJA}	40	°C/W

Notes:
1. Non-repetitive current pulse , per Fig. 3 and derated above T_A = 25°C per Fig. 2.
2. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 per minute maximum.

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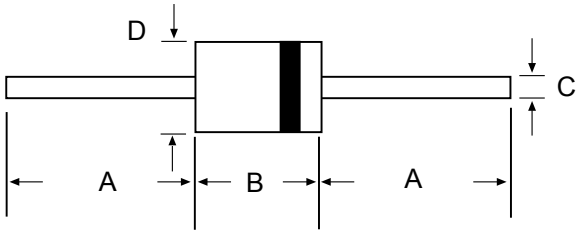
Dimensions



P600

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

Electriacl Characteristics

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage NIN.@I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
UNT-POLAR	BI-POLAR	V_{RWM}(V)	$V_{BR\ MIN.}$(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)
20KPA20A	20KPA20CA	20.0	22.34	50	36.8	548.9	5000
20KPA24A	20KPA24CA	24.0	26.81	50	41.2	490.3	5000
20KPA26A	20KPA26CA	26.0	29.04	50	44.7	451.9	2000
20KPA28A	20KPA28CA	28.0	31.28	50	48.0	420.8	1000
20KPA30A	20KPA30CA	30.0	33.51	5	51.5	392.2	250
20KPA32A	20KPA32CA	32.0	35.74	5	54.3	372.0	150
20KPA34A	20KPA34CA	34.0	38.00	5	57.5	351.3	50
20KPA36A	20KPA36CA	36.0	40.20	5	61.5	328.5	20
20KPA40A	20KPA40CA	40.0	44.70	5	67.8	297.9	15
20KPA44A	20KPA44CA	44.0	49.10	5	72.7	277.9	2

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Electriacl Characteristics

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage NIN.@I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
UNT-POLAR	BI-POLAR	V_{RWM}(V)	$V_{BR\ MIN.}$(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)
20KPA48A	20KPA48CA	48.0	53.60	5	79.4	254.4	2
20KPA52A	20KPA52CA	52.0	58.10	5	85.8	235.4	2
20KPA56A	20KPA56CA	56.0	62.60	5	92.6	218.1	2
20KPA60A	20KPA60CA	60.0	67.00	5	97.6	207.0	2
20KPA64A	20KPA64CA	64.0	71.50	5	104.0	194.2	2
20KPA68A	20KPA68CA	68.0	76.00	5	110.0	183.6	2
20KPA72A	20KPA72CA	72.0	80.40	5	116.0	174.1	2
20KPA80A	20KPA80CA	80.0	89.40	5	130.0	155.4	2
20KPA88A	20KPA88CA	88.0	98.30	5	142.0	142.3	2
20KPA96A	20KPA96CA	96.0	107.20	5	155.0	130.3	2
20KPA104A	20KPA104CA	104.0	116.20	5	168.0	120.2	2
20KPA112A	20KPA112CA	112.0	125.10	5	182.0	111.0	2
20KPA120A	20KPA120CA	120.0	134.00	5	194.0	104.1	2
20KPA132A	20KPA132CA	132.0	147.40	5	213.0	94.8	2
20KPA144A	20KPA144CA	144.0	160.80	5	232.0	87.1	2
20KPA160A	20KPA160CA	160.0	178.70	5	258.0	78.3	2
20KPA172A	20KPA172CA	172.0	192.10	5	277.0	72.9	2
20KPA180A	20KPA180CA	180.0	201.10	5	291.0	69.4	2
20KPA192A	20KPA192CA	192.0	214.50	5	309.0	65.4	2
20KPA204A	20KPA204CA	204.0	227.90	5	329.0	61.4	2
20KPA216A	20KPA216CA	216.0	241.30	5	348.0	58.0	2
20KPA232A	20KPA232CA	232.0	259.10	5	374.0	54.0	2
20KPA240A	20KPA240CA	240.0	268.10	5	387.0	52.2	2
20KPA256A	20KPA256CA	256.0	286.00	5	412.0	49.0	2
20KPA280A	20KPA280CA	280.0	312.80	5	451.0	44.8	2
20KPA300A	20KPA300CA	300.0	335.10	5	483.0	41.8	2

For bidirectional type having V_R of 10 volts and less, the I_R limit is double.
For parts without A , the V_{BR} is ± 10% and V_C is 5% higher than with A parts

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

Figure 1 - Peak Pulse Power Rating Curve

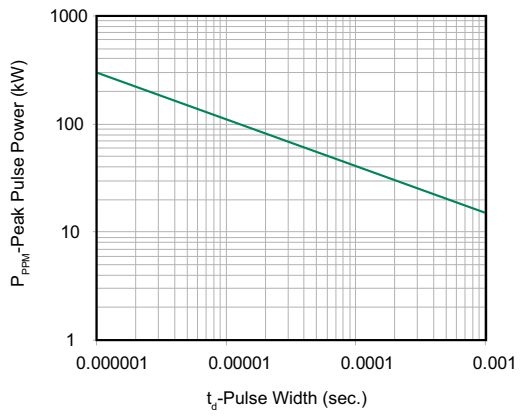


Figure 2 - Pulse Derating Curve

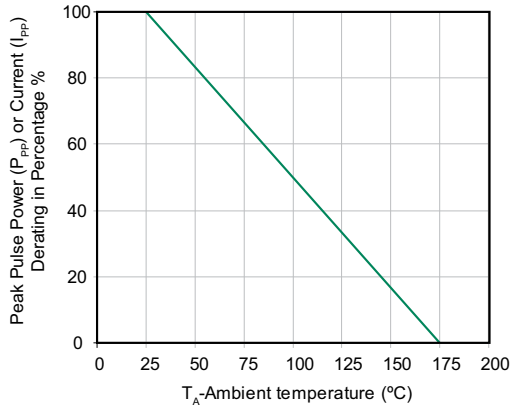


Figure 3 - Test Pulse Waveform

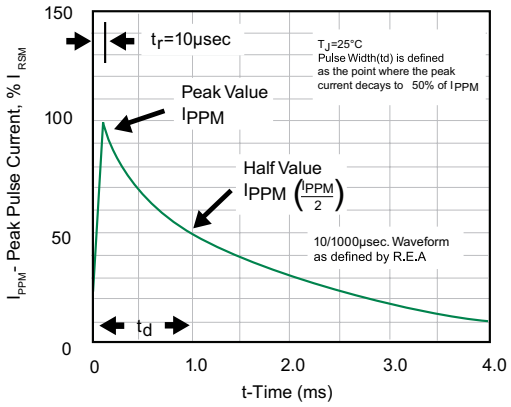


Figure 4 - Typical Junction Capacitance

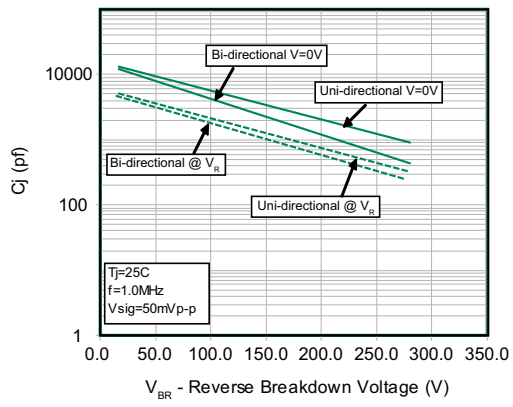


Figure 5 - Steady State Power Derating Curve

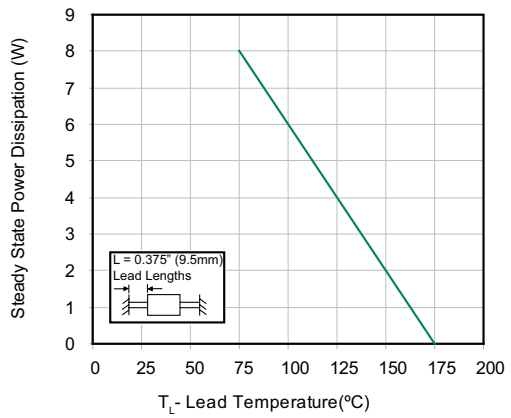
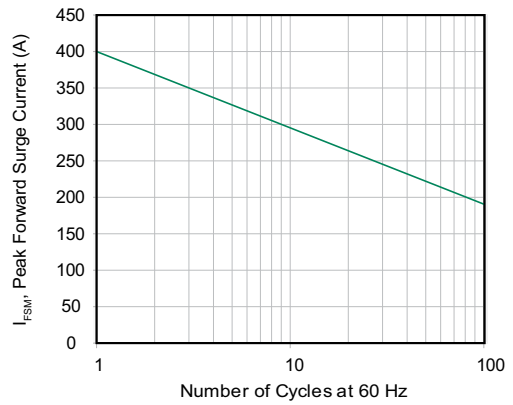


Figure 6 - Maximum Non-Repetitive Forward Surge Current



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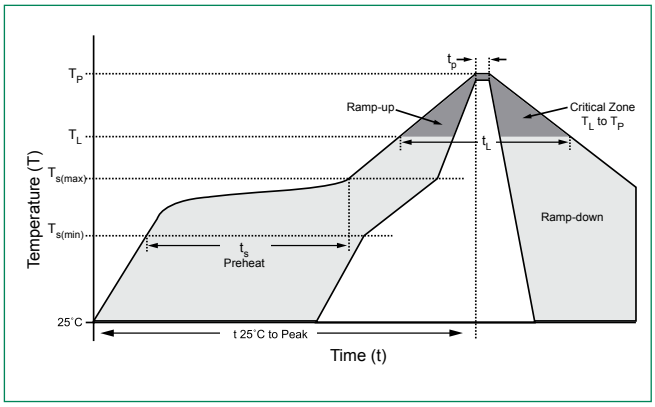
Soldering Parameters

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_L) to peak		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	-Temperature (T_L) (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		280°C



Flow/Wave Soldering (Solder Dipping)

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

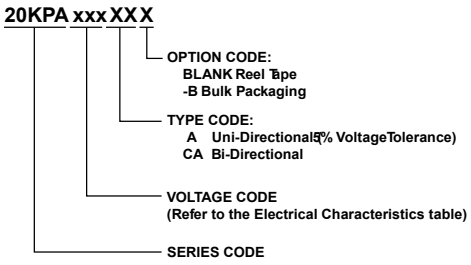
Physical Specifications

Weight	0.045oz., 1.2g
Case	JEDEC DO-201 molded plastic body over passivated junction.
Polarity	Color band denotes the cathode except Bipolar.
Terminal	Matte Tin axial leads, solderable per JESD22-B102D.

Environmental Specifications

Temperature Cycle	JESD22-A104
Pressure Cooker	JESD 22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

Part Numbering System



Part Marking System