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20KPA SERIES GLASS PASSIVATED TRANSIENT VOLTAGE SUPPRESSOR



P-600

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass Passivated Junction
- 20000W Peak Pulse Power Capability on 10/1000 μ s waveform
- Voltage-20.0 to 300 Volts
- Excellent Clamping Capability
- Repetition rate (duty cycle): 0.05%
- Low incremental surge resistance
- Fast Response Time: typically less than 1.0 ps from volts to BV
- High temperature soldering guaranteed: 265°C/10 seconds/.375", (9.5mm) lead length, 5lbs., (2.3kg) tension
- This is a Pb - Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

Mechanical Data

- Case: Molded Plastic over glass passivated junction
- Terminals: Plated Axial leads , Solderable per MIL-STD 750, Method 2026
- Polarity: Color Band denoted positive end (cathode) except Bipolar
- Mounting Position: Any
- Weight:2.1 grams(approx.)

Circuit Diagram



Maximum Ratings and Thermal Characteristics@ $T_A=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10x1000 μ s Waveform(Note 1)	P_{PPM}	20000	W
Peak Pulse Current on 10x1000 μ s Waveform(Note 1)	I_{PPM}	See Table 1	A
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ Lead Lengths .375", (9.5mm)(Note 2)	$P_{M(AV)}$	8.0	W
Peak Forward Surge Current, 8.3ms Sine-Wave Superimposed on Rated Load, (JEDEC Method)(Note 3)	I_{FSM}	400.0	A
Typical Thermal Resistance Junction to Lead	R_{eJL}	8.0	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance Junction to Ambient	R_{eJA}	40	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

Notes: 1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2.

2. Mounted on copper pad area of 0.8" \times 0.8" (20 \times 20mm)

3. 8.3ms single half sine wave, or equivalent square, duty cycle=4 pulses per minute maximum.

Electrical Characteristics @ $T_A=25^\circ C$ unless otherwise specified

UNI-POLAR	BI-POLAR	REVERSE STANOFF VOLTAGE V_{RWM} (V)	BREAKDOWN VOLTAGE V_{BR} (V) MIN. @ I_T	BREAKDOWN VOLTAGE V_{BR} (V) MAX. @ I_T	TEST CURRENT (I_T) mA	PEAK PULSE CURRENT I_{PP} (A)	REVERSE LEAKAGE @ V_{RWM} I_R (μ A)	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_c (V)
20KPA20A	20KPA20CA	20.00	25.60	28.00	50	543.0	5000	36.8
20KPA24A	20KPA24CA	24.00	26.68	29.48	50	485.0	5000	41.2
20KPA26A	20KPA26CA	26.00	28.88	31.92	50	446.0	2000	44.8
20KPA28A	20KPA28CA	28.00	31.12	34.40	50	417.0	1000	48.0
20KPA30A	20KPA30CA	30.00	33.32	36.84	5	388.0	250	51.6
20KPA32A	20KPA32CA	32.00	35.56	39.32	5	368.0	150	54.4
20KPA34A	20KPA34CA	34.00	37.76	41.60	5	347.0	50	57.6
20KPA36A	20KPA36CA	36.00	40.00	44.40	5	325.0	20	61.6
20KPA40A	20KPA40CA	40.00	44.40	49.20	5	294.0	15	68.0
20KPA44A	20KPA44CA	44.00	48.80	54.00	5	275.0	10	72.8
20KPA48A	20KPA48CA	48.00	53.20	58.80	5	251.0	10	79.6
20KPA52A	20KPA52CA	52.00	57.60	63.60	5	233.0	10	86.0
20KPA56A	20KPA56CA	56.00	62.40	68.80	5	216.0	10	92.8
20KPA60A	20KPA60CA	60.00	66.80	74.00	5	205.0	10	97.6
20KPA64A	20KPA64CA	64.00	71.20	78.80	5	192.0	10	104.0
20KPA68A	20KPA68CA	68.00	75.60	83.60	5	181.0	10	110.4
20KPA72A	20KPA72CA	72.00	80.00	88.40	5	171.0	10	116.8
20KPA80A	20KPA80CA	80.00	88.80	98.00	5	154.0	10	129.6
20KPA88A	20KPA88CA	88.00	97.60	107.60	5	141.0	10	142.0
20KPA96A	20KPA96CA	96.00	106.80	118.00	5	129.0	10	155.6
20KPA104A	20KPA104CA	104.00	115.60	127.60	5	119.0	10	168.4
20KPA112A	20KPA112CA	112.00	124.40	137.60	5	110.0	10	181.6
20KPA120A	20KPA120CA	120.00	133.20	147.20	5	103.0	10	193.6
20KPA132A	20KPA132CA	132.00	146.80	162.40	5	93.8	10	213.2
20KPA144A	20KPA144CA	144.00	160.00	176.80	5	86.1	10	232.4
20KPA160A	20KPA160CA	160.00	177.60	196.40	5	77.5	10	258.0
20KPA172A	20KPA172CA	172.00	191.20	211.20	5	72.0	10	277.6
20KPA180A	20KPA180CA	180.00	200.00	221.20	5	68.8	10	290.8
20KPA192A	20KPA192CA	192.00	213.20	235.60	5	64.6	10	309.6
20KPA204A	20KPA204CA	204.00	226.80	250.80	5	60.7	10	329.6
20KPA216A	20KPA216CA	216.00	240.00	265.20	5	57.4	10	348.4
20KPA232A	20KPA232CA	232.00	257.60	284.80	5	53.4	10	374.4
20KPA240A	20KPA240CA	240.00	266.80	294.80	5	51.7	10	387.2
20KPA256A	20KPA256CA	256.00	284.40	314.40	5	48.5	10	412.0
20KPA280A	20KPA280CA	280.00	311.20	344.00	5	44.2	10	452.0
20KPA300A	20KPA300CA	300.00	333.20	368.40	5	41.3	10	484.0

For bidirectional type having V_{RWM} of 40 volts and less, the I_R limit is double.

For parts without A, the V_{BR} is $\pm 10\%$

Ratings and Characteristics Curves

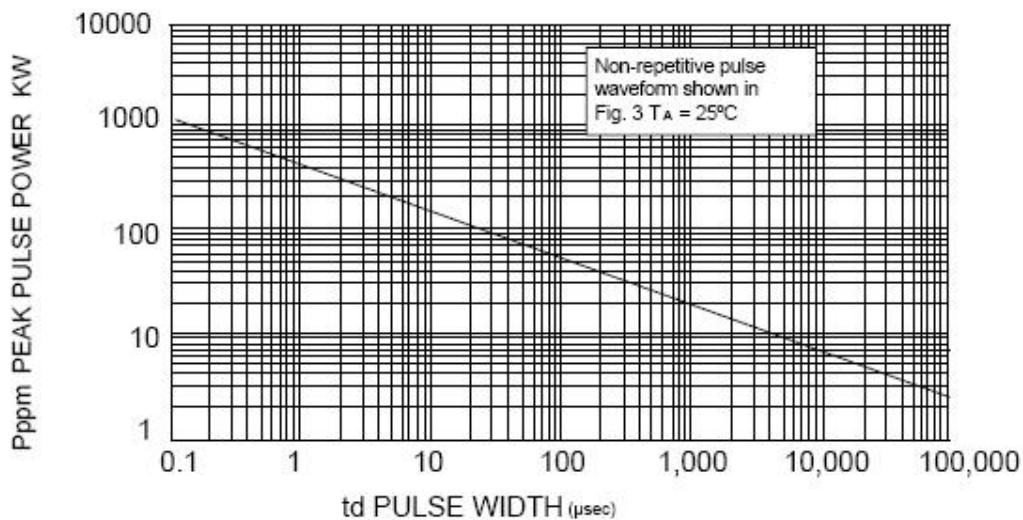


FIG. 1 PEAK PULSE POWER RATING

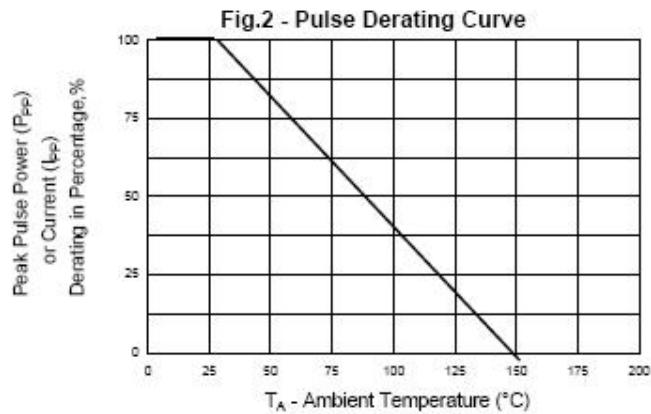
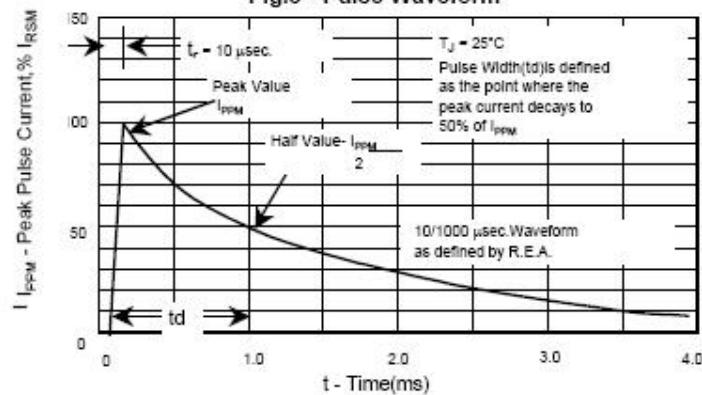
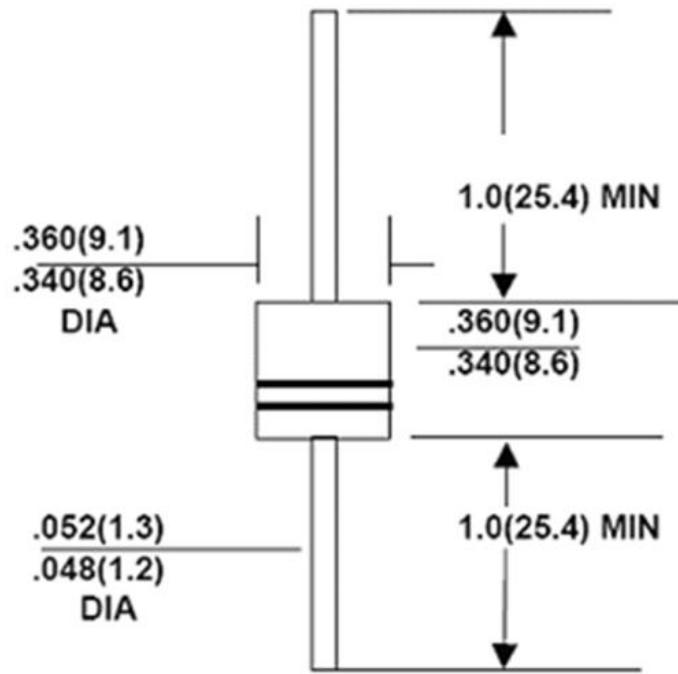


Fig.3 - Pulse Waveform



Mechanical Dimensions P-600(Inches/Millimeters)



Ordering Information

Device	Package	Shipping
20KPAxxxxXX	P-600(Pb-Free)	300pcs /tape
20KPAxxxxXXTR	P-600(Pb-Free)	800pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram

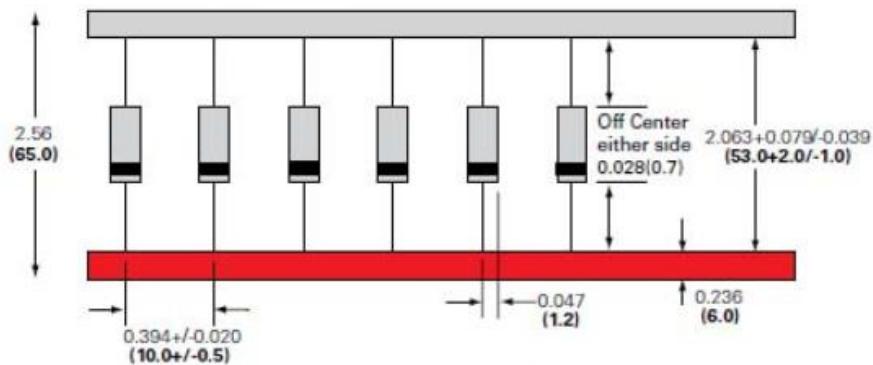


Where XXXXX is YYWWL

20KPA20A = Part Name
 YY = Year
 WW = Week
 L = Lot Number

Cautions: Molding resin
 Epoxy resin UL:94V-0

Carrier Tape Specification P-600



- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@ smc-diodes.com •

Technical Data
Data Sheet N0216, Rev. C



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