

# MDE Semiconductor, Inc.

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## 20KPA SERIES

### GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-20.0 TO 300 Volts 20000 Watt Peak Pulse Power

#### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 20000W Peak Pulse Power capability on 10/1000  $\mu$ s waveform
- Excellent clamping capability
- Repetition rate (duty cycle):0.05%
- Low incremental surge resistance
- Fast response time: typically less than 1.0 ps from 0 volts to BV
- Typical  $I_d$  less than 1 $\mu$ A above 10V
- High temperature soldering guaranteed: 265°C/10 seconds/.375", (9.5mm) lead length, 5lbs., (2.3kg) tension

#### 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: 0.07 ounce, 2.1 gram



Dimensions in inches (millimeters)

#### DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 20KPA20 thru types 20KPA300  
 Electrical characteristics apply in both directions.

#### MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (NOTE 1)	Pppm	Minimum 20000	Watts
Peak Pulse Current of on 10-1000 $\mu$ s waveform (NOTE 1)	Ippm	SEE TABLE 1	Amps
Steady State Power Dissipation at $T_l=75^\circ\text{C}$ Lead Lengths .375", (9.5mm)(NOTE 2)	Pm(AV)	8.0	Watts
Peak Forward Surge Current, 8.3ms Sine-Wave Superimposed on Rated Load, (JEDEC Method) (NOTE 3)	IFSM	400.0	Amps
Operating and Storage Temperature Range	Tj, Tstg	-55 to +175	°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 0.8x0.8" (20x20mm) per Fig.5.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle=4 pulses per minutes maximum

Certified RoHS Compliant

UL File # E223026

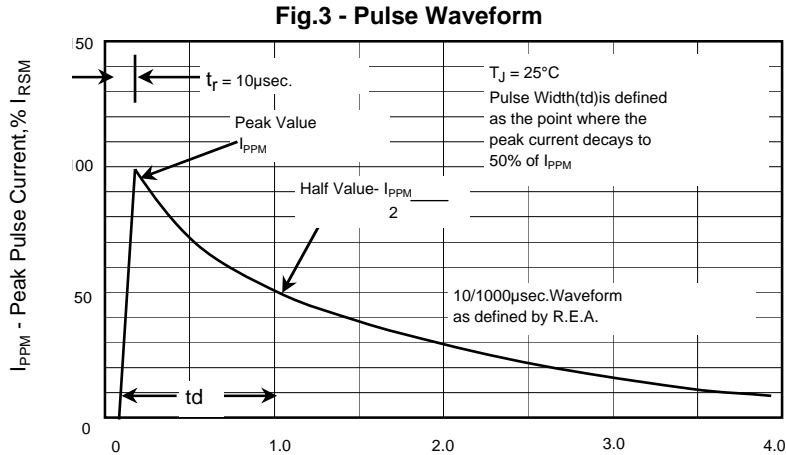
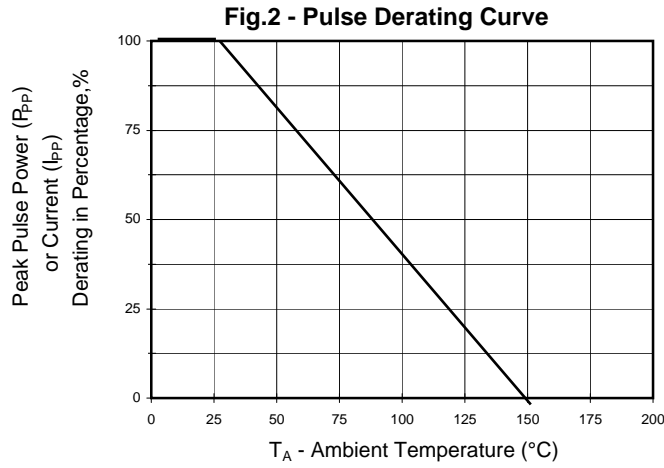
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## 20KPA Series Rating and Characteristics



FIG. 1 PEAK PULSE POWER RATING



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## 20000 Watt TVS

UNI-POLAR	BI-POLAR	REVERSE STANDOFF VOLTAGE $V_{RWM}$ (V)	BREAKDOWN VOLTAGE $V_{BR}$ (V) MIN. @ $I_T$	TEST CURRENT ( $I_T$ ) mA	MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$ $V_c$ (V)	PEAK PULSE CURRENT $I_{PP}$ (A)	REVERSE LEAKAGE @ $V_{RWM}$ $I_R$ ( $\mu$ A)
20KPA20A	20KPA20CA	20.00	22.34	50	36.8	548.9	5000
20KPA24A	20KPA24CA	24.00	26.81	50	41.2	490.3	5000
20KPA26A	20KPA26CA	26.00	29.04	50	44.7	451.9	2000
20KPA28A	20KPA28CA	28.00	31.28	50	48.0	420.8	1000
20KPA30A	20KPA30CA	30.00	33.51	5	51.5	392.2	250
20KPA32A	20KPA32CA	32.00	35.74	5	54.3	372.0	150
20KPA34A	20KPA34CA	34.00	38.00	5	57.5	351.3	50
20KPA36A	20KPA36CA	36.00	40.20	5	61.5	328.5	20
20KPA40A	20KPA40CA	40.00	44.70	5	67.8	297.9	15
20KPA44A	20KPA44CA	44.00	49.10	5	72.7	277.9	10
20KPA48A	20KPA48CA	48.00	53.60	5	79.4	254.4	10
20KPA52A	20KPA52CA	52.00	58.10	5	85.8	235.4	10
20KPA56A	20KPA56CA	56.00	62.60	5	92.6	218.1	10
20KPA60A	20KPA60CA	60.00	67.00	5	97.6	207.0	10
20KPA64A	20KPA64CA	64.00	71.50	5	104.0	194.2	10
20KPA68A	20KPA68CA	68.00	76.00	5	110.0	183.6	10
20KPA72A	20KPA72CA	72.00	80.40	5	116.0	174.1	10
20KPA80A	20KPA80CA	80.00	89.40	5	130.0	155.4	10
20KPA88A	20KPA88CA	88.00	98.30	5	142.0	142.3	10
20KPA96A	20KPA96CA	96.00	107.20	5	155.0	130.3	10
20KPA104A	20KPA104CA	104.00	116.20	5	168.0	120.2	10
20KPA112A	20KPA112CA	112.00	125.10	5	182.0	111.0	10
20KPA120A	20KPA120CA	120.00	134.00	5	194.0	104.1	10
20KPA132A	20KPA132CA	132.00	147.40	5	213.0	94.8	10
20KPA144A	20KPA144CA	144.00	160.80	5	232.0	87.1	10
20KPA160A	20KPA160CA	160.00	178.70	5	258.0	78.3	10
20KPA172A	20KPA172CA	172.00	192.10	5	277.0	72.9	10
20KPA180A	20KPA180CA	180.00	201.10	5	291.0	69.4	10
20KPA192A	20KPA192CA	192.00	214.50	5	309.0	65.4	10
20KPA204A	20KPA204CA	204.00	227.90	5	329.0	61.4	10
20KPA216A	20KPA216CA	216.00	241.30	5	348.0	58.0	10
20KPA232A	20KPA232CA	232.00	259.10	5	374.0	54.0	10
20KPA240A	20KPA240CA	240.00	268.10	5	387.0	52.2	10
20KPA256A	20KPA256CA	256.00	286.00	5	412.0	49.0	10
20KPA280A	20KPA280CA	280.00	312.80	5	451.0	44.6	10
20KPA300A	20KPA300CA	300.00	335.10	5	483.0	41.8	10

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  $\pm 10\%$

**Certified RoHS Compliant**  
**UL File # E223026**