

# MDE Semiconductor, Inc.

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## 20KP 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 Id 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 20KP20 thru types 20KP300  
 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 Tl=75 °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 Ta=25 °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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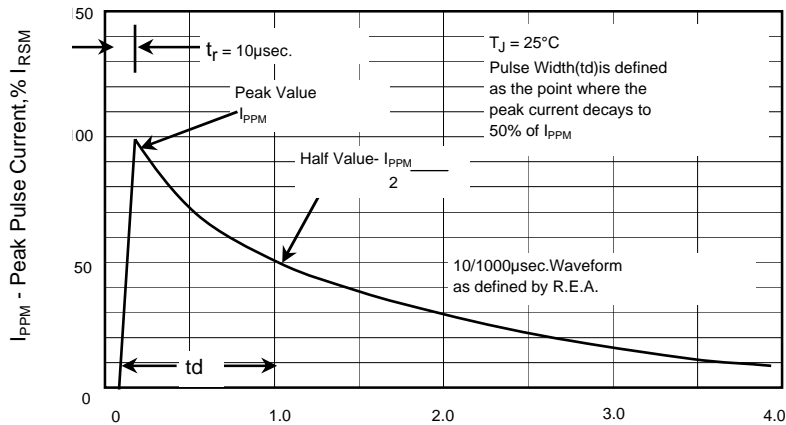
## 20KP Series Rating and Characteristics



**FIG. 1 PEAK PULSE POWER RATING**



**Fig.3 - Pulse Waveform**



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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)
20KP20A	20KP20CA	20.00	22.34	50	36.8	548.9	5000
20KP24A	20KP24CA	24.00	26.81	50	41.2	490.3	5000
20KP26A	20KP26CA	26.00	29.04	50	44.7	451.9	2000
20KP28A	20KP28CA	28.00	31.28	50	48.0	420.8	1000
20KP30A	20KP30CA	30.00	33.51	5	51.5	392.2	250
20KP32A	20KP32CA	32.00	35.74	5	54.3	372.0	150
20KP34A	20KP34CA	34.00	38.00	5	57.5	351.3	50
20KP36A	20KP36CA	36.00	40.20	5	61.5	328.5	20
20KP40A	20KP40CA	40.00	44.70	5	67.8	297.9	15
20KP44A	20KP44CA	44.00	49.10	5	72.7	277.9	10
20KP48A	20KP48CA	48.00	53.60	5	79.4	254.4	10
20KP52A	20KP52CA	52.00	58.10	5	85.8	235.4	10
20KP56A	20KP56CA	56.00	62.60	5	92.6	218.1	10
20KP60A	20KP60CA	60.00	67.00	5	97.6	207.0	10
20KP64A	20KP64CA	64.00	71.50	5	104.0	194.2	10
20KP68A	20KP68CA	68.00	76.00	5	110.0	183.6	10
20KP72A	20KP72CA	72.00	80.40	5	116.0	174.1	10
20KP80A	20KP80CA	80.00	89.40	5	130.0	155.4	10
20KP88A	20KP88CA	88.00	98.30	5	142.0	142.3	10
20KP96A	20KP96CA	96.00	107.20	5	155.0	130.3	10
20KP104A	20KP104CA	104.00	116.20	5	168.0	120.2	10
20KP112A	20KP112CA	112.00	125.10	5	182.0	111.0	10
20KP120A	20KP120CA	120.00	134.00	5	194.0	104.1	10
20KP132A	20KP132CA	132.00	147.40	5	213.0	94.8	10
20KP144A	20KP144CA	144.00	160.80	5	232.0	87.1	10
20KP160A	20KP160CA	160.00	178.70	5	258.0	78.3	10
20KP172A	20KP172CA	172.00	192.10	5	277.0	72.9	10
20KP180A	20KP180CA	180.00	201.10	5	291.0	69.4	10
20KP192A	20KP192CA	192.00	214.50	5	309.0	65.4	10
20KP204A	20KP204CA	204.00	227.90	5	329.0	61.4	10
20KP216A	20KP216CA	216.00	241.30	5	348.0	58.0	10
20KP232A	20KP232CA	232.00	259.10	5	374.0	54.0	10
20KP240A	20KP240CA	240.00	268.10	5	387.0	52.2	10
20KP256A	20KP256CA	256.00	286.00	5	412.0	49.0	10
20KP280A	20KP280CA	280.00	312.80	5	451.0	44.6	10
20KP300A	20KP300CA	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**