

# MDE Semiconductor, Inc.

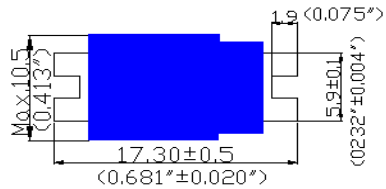
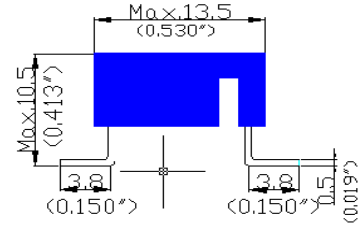
201 Shipyard Way, Unit C, Newport Beach, CA., USA 92663 Tel : 760-564-8656 • Fax : 760-564-2414  
1-800-831-4881 Email: sales@mdesemiconductor.com Web: www.mdesemiconductor.com

## SMD30KPA SERIES

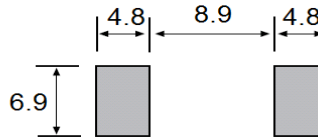
**GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR**  
**VOLTAGE-17.0 TO 280 Volts**  
**30000 Watt Peak Pulse Power**

### FEATURES

- RoHS Compliant E4
- Typical maximum temperature coefficient  
 $\Delta VBR=0.1\% \times VBR @ 25^{\circ}C \times \Delta T$
- 30000W 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  
Bidirectional less than 10 ns
- Silver plated lead



Dimensions in millimeters (inches)



Recommended mounting footprint(mm)

### MECHANICAL DATA

Case: Epoxy powder over glass passivated junction  
Terminals: Solderable per MIL-STD-750, Method 2026  
Polarity: Color band denoted positive end (cathode)  
except Bipolar  
Mounting Position: Any  
Weight: 0.08 ounce, 2.9 gram

### DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types SMD30KPA17A thru types SMD30KPA280A (e.g. SMD30KPA17CA, 30SMD108CA)  
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 $\mu s$	$P_{PPM}$	Minimum 30000	Watts
Peak Pulse Current of on 10/1000 $\mu s$ waveform	$I_{PPM}$	SEE TABLE 1	Amps
Peak Forward Surge Current, 1/20 second / 25°C (JEDEC Method)	$I_{FSM}$	400.0	°C
Operatings and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 150	

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## **30000 Watt TVS**

UNI-POLAR	BI-POLAR	Marking Code		REVERSE	BREAKDOWN	TEST	MAXIMUM	PEAK	REVERSE
				STANDOFF	VOLTAGE	CURREN	CLAMPING	PULSE	LEAKAGE
				V <sub>RWM</sub> (V)	V <sub>BR</sub> (V) MIN. @ I <sub>T</sub>	T (I <sub>T</sub> ) mA	@I <sub>PP</sub> V <sub>c</sub> (V)	CURRENT I <sub>PP</sub> (A)	@ V <sub>RWM</sub> I <sub>R</sub> (µA)
SMD30KPA17A	SMD30KPA17CA	UA	BA	17.00	18.99	50	29.3	1023.9	5000
SMD30KPA18A	SMD30KPA18CA	UB	BB	18.00	20.11	50	30.9	970.9	5000
SMD30KPA20A	SMD30KPA20CA	UC	BC	20.00	22.3	20	34.3	874.6	1500
SMD30KPA22A	SMD30KPA22CA	UD	BD	22.00	24.6	10	37.1	808.6	500
SMD30KPA24A	SMD30KPA24CA	UE	BE	24.00	26.8	5	40.7	737.1	150
SMD30KPA26A	SMD30KPA26CA	UF	BF	26.00	29.0	5	44.0	681.8	50
SMD30KPA28A	SMD30KPA28CA	UG	BG	28.00	31.3	5	50.0	606.0	25
SMD30KPA30A	SMD30KPA30CA	UH	BH	30.00	33.5	5	55.2	548.9	15
SMD30KPA33A	SMD30KPA33CA	UJ	BJ	33.00	36.9	5	58.5	517.9	5
SMD30KPA36A	SMD30KPA36CA	UK	BK	36.00	40.2	5	61.8	490.3	5
SMD30KPA39A	SMD30KPA39CA	UL	BL	39.00	43.6	5	67.2	450.9	5
SMD30KPA42A	SMD30KPA42CA	UM	BM	42.00	46.9	5	72.0	420.8	5
SMD30KPA43A	SMD30KPA43CA	UN	BN	43.00	48.0	5	73.0	416.1	5
SMD30KPA45A	SMD30KPA45CA	UP	BP	45.00	50.3	5	77.4	391.5	5
SMD30KPA48A	SMD30KPA48CA	UQ	BQ	48.00	53.6	5	81.6	371.3	5
SMD30KPA51A	SMD30KPA51CA	UR	BR	51.00	57.0	5	86.4	350.7	5
SMD30KPA54A	SMD30KPA54CA	US	BS	54.00	60.3	5	91.4	331.5	5
SMD30KPA58A	SMD30KPA58CA	UT	BT	58.00	64.8	5	92.4	327.9	5
SMD30KPA60A	SMD30KPA60CA	UU	BU	60.00	67.0	5	102.0	297.1	5
SMD30KPA64A	SMD30KPA64CA	UV	BV	64.00	71.5	5	104.0	291.3	5
SMD30KPA66A	SMD30KPA66CA	UW	BW	66.00	73.7	5	107.0	283.2	2
SMD30KPA70A	SMD30KPA70CA	UX	BX	70.00	78.2	5	109.0	278.0	2
SMD30KPA71A	SMD30KPA71CA	UY	BY	71.00	79.3	5	111.5	271.7	2
SMD30KPA72A	SMD30KPA72CA	UZ	BZ	72.00	80.4	5	114.0	265.8	2
SMD30KPA75A	SMD30KPA75CA	DA	CA	75.00	83.8	5	119.4	253.8	2
SMD30KPA78A	SMD30KPA78CA	DB	CB	78.00	87.1	5	129.0	234.9	2
SMD30KPA84A	SMD30KPA84CA	DC	CC	84.00	93.8	5	139.2	217.7	2
SMD30KPA90A	SMD30KPA90CA	DD	CD	90.00	100.5	5	146.4	207.0	2
SMD30KPA96A	SMD30KPA96CA	DE	CE	96.00	107.2	5	156.0	194.2	2
SMD30KPA102A	SMD30KPA102CA	DF	CF	102.00	113.9	5	165.6	183.0	2
SMD30KPA108A	SMD30KPA108CA	DG	CG	108.00	120.6	5	175.2	172.9	2
SMD30KPA120A		DH		120.00	134.0	5	194.4	155.9	2
SMD30KPA132A		DJ		132.00	147.4	5	213.0	142.3	2
SMD30KPA144A		DK		144.00	160.8	5	223.2	135.8	2
SMD30KPA150A		DL		150.00	167.6	5	233.4	129.8	2
SMD30KPA156A		DM		156.00	174.3	5	245.0	123.7	2
SMD30KPA160A		DN		160.00	178.7	5	252.6	120.0	2
SMD30KPA168A		DP		158.00	187.7	5	272.4	111.2	2
SMD30KPA170A		DQ		170.00	189.9	5	275.0	110.2	2
SMD30KPA180A		DR		180.00	201.1	5	2190.4	104.3	2
SMD30KPA198A		DS		198.00	221.2	5	319.8	94.7	2
SMD30KPA216A		DT		216.00	241.3	5	348.6	86.9	2
SMD30KPA240A		DU		240.00	268.1	5	387.0	78.3	2
SMD30KPA258A		DV		258.00	288.2	5	416.4	72.8	2
SMD30KPA260A		DW		260.00	290.4	5	416.0	72.8	2
SMD30KPA270A		DX		270	301.6	5	436.2	69.50	2
SMD30KPA280A		DY		280	312.8	5	464.0	65.30	2

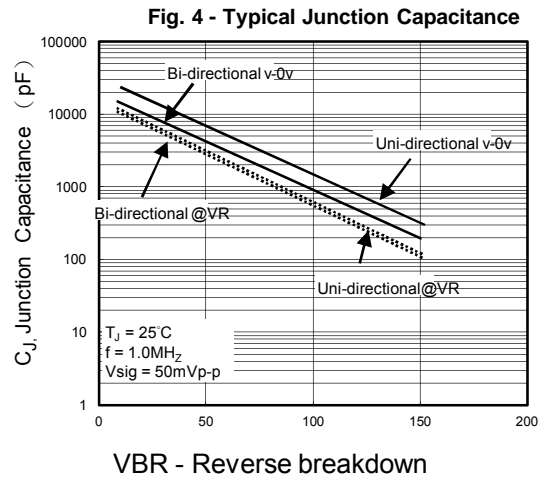
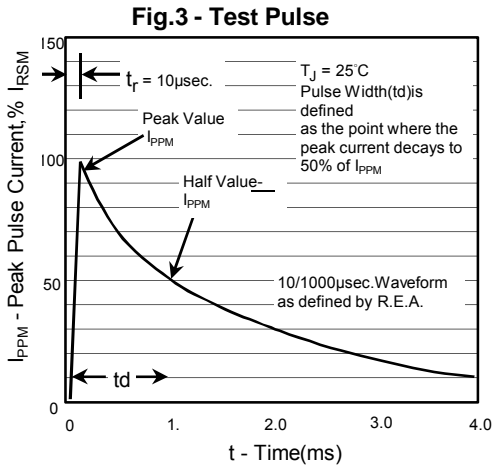
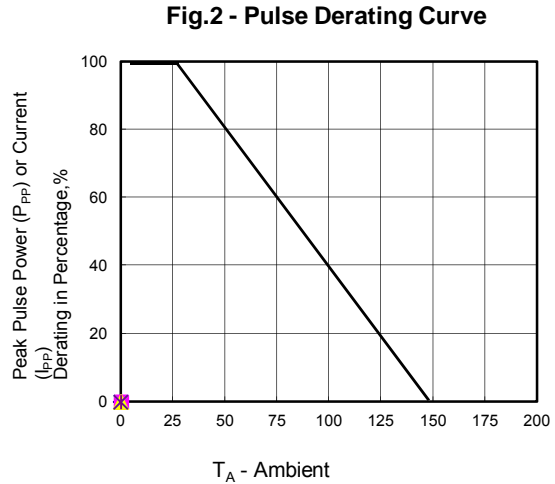
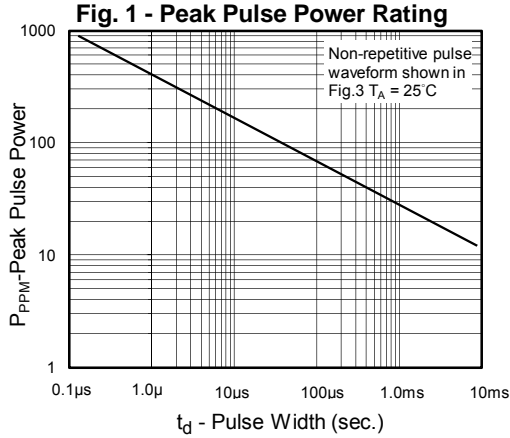
For bidirectional type having Vrwm of 26 volts and less, the IR limit is double.

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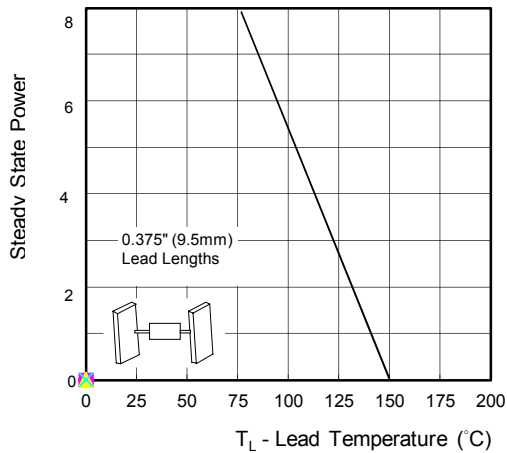
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## SMD30KPA SERIES RATINGS AND CHARACTERISTIC CURVES

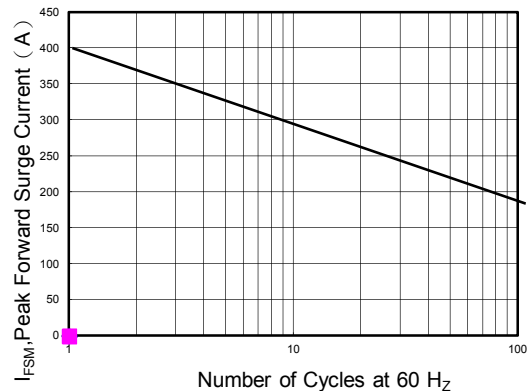
### Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)



**Fig. 5 - Steady State Power Derating Curve**



**Fig. 6 - Maximum Non-repetitive Forward Surge current**



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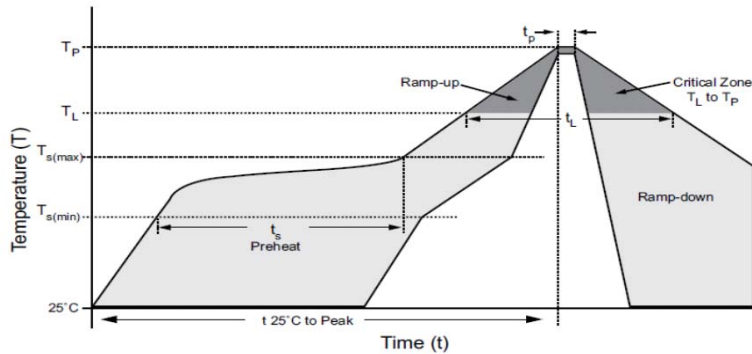
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## SMD30KPA SERIES SOLDERING PROFILE

### 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 - 120 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 Min ( $T_L$ )	217°C
	Time ( $t_L$ ) maintained above $T_L$	60 - 150 seconds
Peak temperature( $T_P$ )		245 <sup>+0/-5</sup> °C
Time within 5°C of actual peak Temperature( $t_p$ )		20 - 40 seconds
Ramp-down Rate		6°C/second max
Time 2 5°C to peak Temperature( $T_p$ )		8 minutes Max.

### Soldering Profile

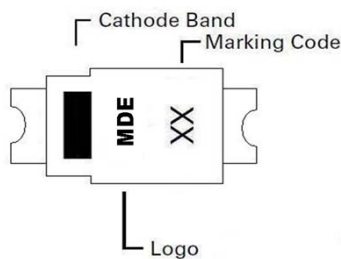


### Physical Specifications

<b>Weight</b>	Contact Manufacturer
<b>Case</b>	Epoxy encapsulated
<b>Terminal</b>	Silver plated leads, solderable per MIL-STD-202 Method 208

### Flow/Wave Soldering (Solder Dipping)

<b>Peak Temperature:</b>		265°C
<b>Dipping Time:</b>		10 seconds
<b>Soldering:</b>		1 time



Part Number	Qty	Remark
SMD30KPAxxx	20	Bulk Packaging