

## SMAG Plastic-Encapsulate Diodes

### CJSMAJ SERIES Transient Voltage Suppressor Diodes

#### Features

- $P_{PP}$  400W
- $V_{RWM}$  10V- 100V
- Glass passivated chip

#### Applications

- Clamping Voltage



#### Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	$P_{PPM}$	W	with a 10/1000us waveform	400
Peak pulse current(note 1)	$I_{PPM}$	A	with a 10/1000us waveform	See Next Table
Power dissipation	$P_D$	W	On infinite heat sink at $T_L=50^\circ\text{C}$	3.3
Peak forward surge current	$I_{FSM}$	A	8.3 ms single half sine-wave uni-directional only $\left[ \frac{1}{\sqrt{2}} \right]$	60
Operating junction and storage temperature range	$T_J, T_{STG}$	$^\circ\text{C}$		-55 to +150

#### Electrical Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage	$V_F$	V	at 25A for uni-directional only	3.5
Thermal resistance	$R_{\theta JL}$	$^\circ\text{C/W}$	junction to lead $T_L=50^\circ\text{C}$	30
	$R_{\theta JA}$	$^\circ\text{C/W}$	junction to ambient $T_A=25^\circ\text{C}$	120

#### Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig.2
- (2) 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minutes maximum

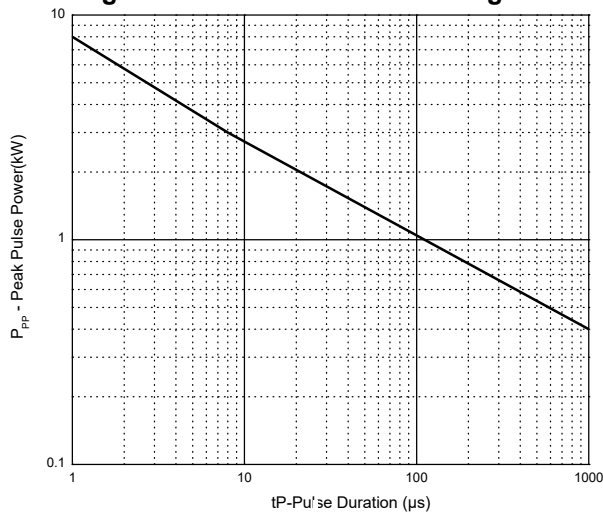
## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Part Number		Device Marking Code		Breakdown Voltage VBR@IT		Test Current	Max Reverse Leakage @VRWM IR(μA)		Reverse Standoff Voltage	Max Peak Pulse Current <sup>(1)</sup>	Max Clamping Voltage @Ipp
UNI	BI	UNI	BI	Min.(V)	Max.(V)	IT(mA)	UNI	BI	V <sub>RWM</sub> (V)	IPP(A)	Vc(V)
CJSMAJ10A	CJSMAJ10CA	A10A XX <sup>(2)</sup>	A10CA XX	11.14	12.29	1	5	5	10	23.5	16.8
CJSMAJ11A	CJSMAJ11CA	A11A XX	A11CA XX	12.25	13.49	1	5	5	11	22	18
CJSMAJ12A	CJSMAJ12CA	A12A XX	A12CA XX	13.35	14.69	1	5	5	12	20.1	19.7
CJSMAJ13A	CJSMAJ13CA	A13A XX	A13CA XX	14.46	15.89	1	5	5	13	18.6	21.3
CJSMAJ14A	CJSMAJ14CA	A14A XX	A14CA XX	15.66	17.19	1	5	5	14	17.2	23
CJSMAJ15A	CJSMAJ15CA	A15A XX	A15CA XX	16.77	18.49	1	5	5	15	16.4	24.2
CJSMAJ16A	CJSMAJ16CA	A16A XX	A16CA XX	17.87	19.69	1	5	5	16	15.4	25.7
CJSMAJ17A	CJSMAJ17CA	A17A XX	A17CA XX	18.98	20.89	1	5	5	17	14.5	27.3
CJSMAJ18A	CJSMAJ18CA	A18A XX	A18CA XX	20.08	22.08	1	5	5	18	13.7	28.9
CJSMAJ20A	CJSMAJ20CA	A20A XX	A20CA XX	22.29	24.48	1	5	5	20	12.3	32.1
CJSMAJ22A	CJSMAJ22CA	A22A XX	A22CA XX	24.5	26.88	1	5	5	22	11.3	35.1
CJSMAJ24A	CJSMAJ24CA	A24A XX	A24CA XX	26.81	29.48	1	5	5	24	10.3	38.5
CJSMAJ26A	CJSMAJ26CA	A26A XX	A26CA XX	29.02	31.88	1	5	5	26	9.5	41.7
CJSMAJ28A	CJSMAJ28CA	A28A XX	A28CA XX	31.22	34.38	1	5	5	28	8.8	44.9
CJSMAJ30A	CJSMAJ30CA	A30A XX	A30CA XX	33.43	36.77	1	5	5	30	8.3	47.9
CJSMAJ33A	CJSMAJ33CA	A33A XX	A33CA XX	36.85	40.57	1	5	5	33	7.5	52.8
CJSMAJ36A	CJSMAJ36CA	A36A XX	A36CA XX	40.16	44.17	1	5	5	36	6.9	57.5
CJSMAJ40A	CJSMAJ40CA	A40A XX	A40CA XX	44.58	49.07	1	5	5	40	6.2	63.9
CJSMAJ43A	CJSMAJ43CA	A43A XX	A43CA XX	47.99	52.76	1	5	5	43	5.8	68.7
CJSMAJ45A	CJSMAJ45CA	A45A XX	A45CA XX	50.2	55.26	1	5	5	45	5.5	72
CJSMAJ48A	CJSMAJ48CA	A48A XX	A48CA XX	53.51	58.86	1	5	5	48	5.2	76.6
CJSMAJ51A	CJSMAJ51CA	A51A XX	A51CA XX	56.93	62.66	1	5	5	51	4.9	81.6
CJSMAJ54A	CJSMAJ54CA	A54A XX	A54CA XX	60.24	66.25	1	5	5	54	4.6	86.2
CJSMAJ58A	CJSMAJ58CA	A58A XX	A58CA XX	64.66	71.15	1	5	5	58	4.3	92.7
CJSMAJ60A	CJSMAJ60CA	A60A XX	A60CA XX	66.97	73.65	1	5	5	60	4.1	95.8
CJSMAJ64A	CJSMAJ64CA	A64A XX	A64CA XX	71.39	78.54	1	5	5	64	3.9	102
CJSMAJ70A	CJSMAJ70CA	A70A XX	A70CA XX	78.11	85.94	1	5	5	70	3.5	111.9
CJSMAJ75A	CJSMAJ75CA	A75A XX	A75CA XX	83.63	92.04	1	5	5	75	3.3	119.8
CJSMAJ78A	CJSMAJ78CA	A78A XX	A78CA XX	87.05	95.73	1	5	5	78	3.2	124.7
CJSMAJ85A	CJSMAJ85CA	A85A XX	A85CA XX	94.78	103.93	1	5	5	85	2.9	135.6
CJSMAJ90A	CJSMAJ90CA	A90A XX	A90CA XX	100.4	110.92	1	5	5	90	2.7	144.5
CJSMAJ100A	CJSMAJ100CA	A100A XX	A100CA XX	111.45	122.91	1	5	5	100	2.5	160.4

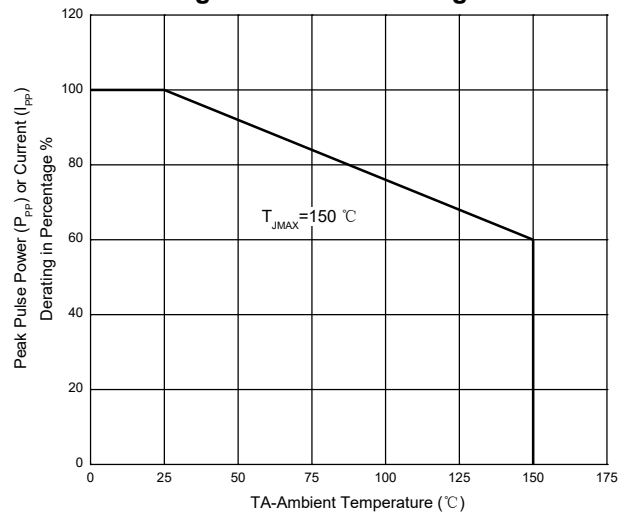
### Notes:

- (1) Waveform of CJSMAJ10A -CJSMAJ100CA are defined as per fig.3
- (2) XX=Code

**Figure 1. Peak Pulse Power Rating Curve**



**Figure 2. Pulse Derating Curve**



**Figure 3. Pulse Waveform**



**Figure 4. Typical Junction Capacitance**



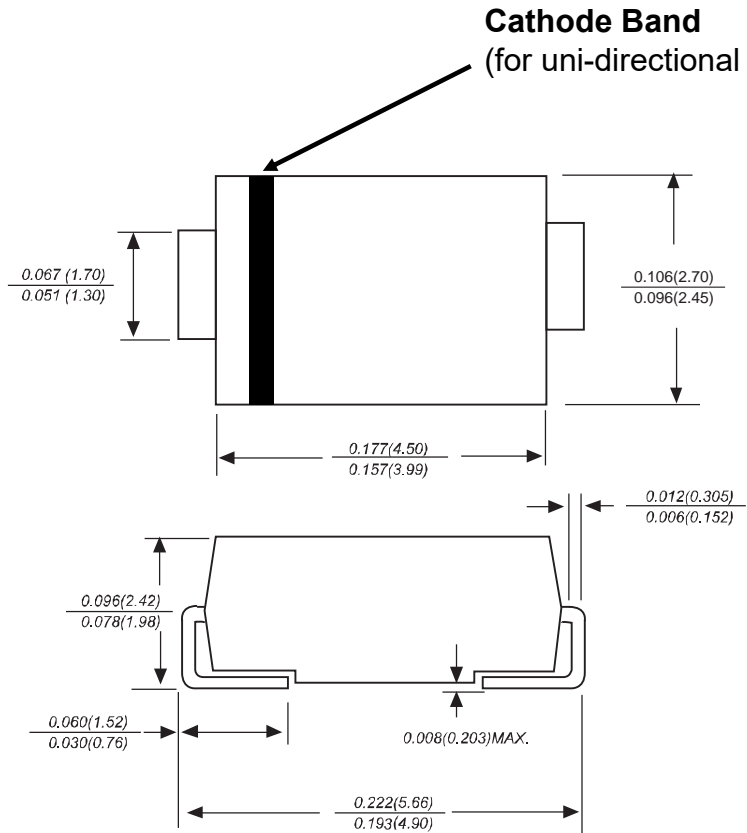
**Figure 5. Steady State Power Dissipation Derating Curve**



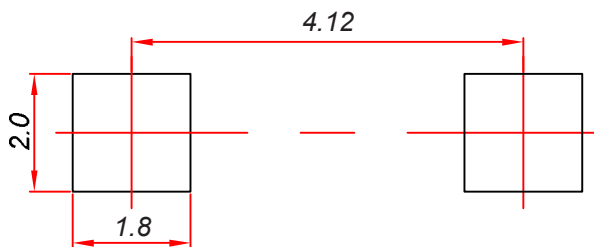
**Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only**



## SMAG Package Outline Dimensions



## SMAG Suggested Pad Layout



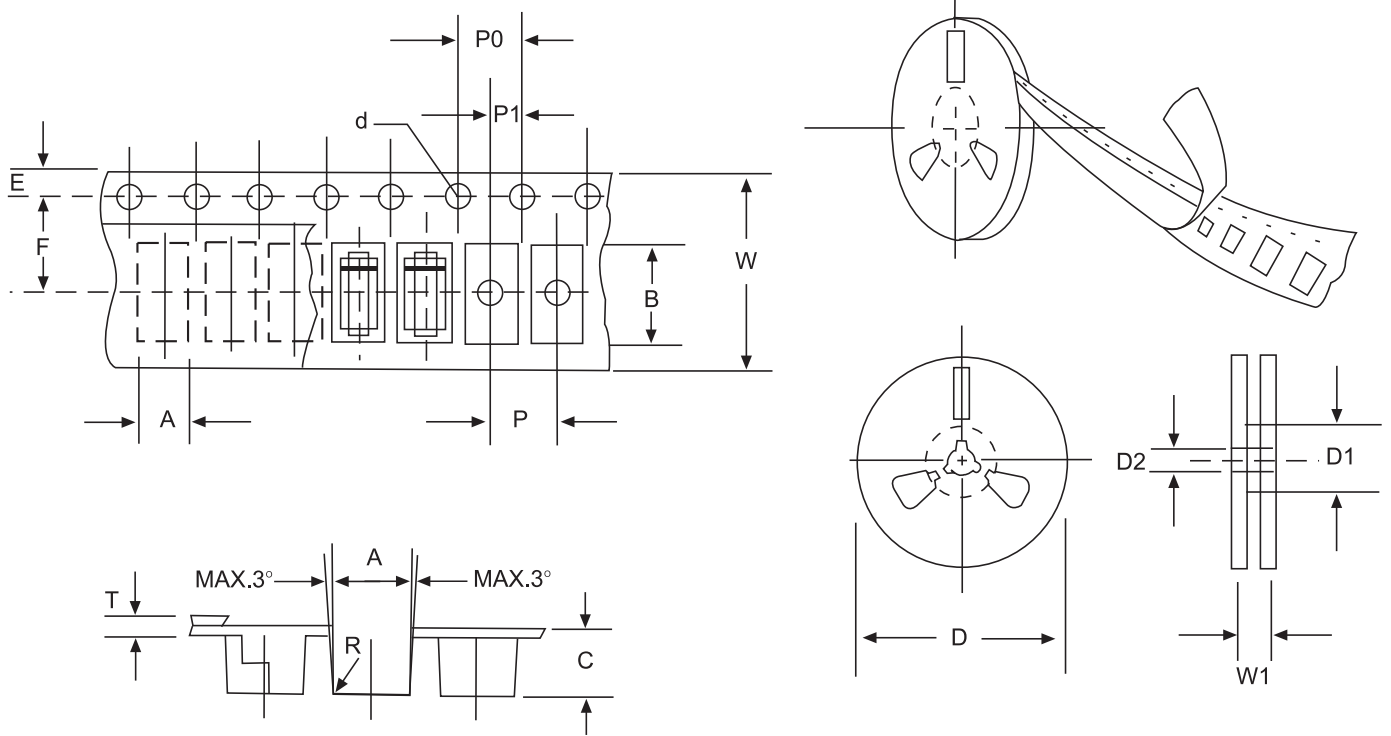
**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

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# Reel Taping Specifications For Surface Mount Devices- SMAG



**FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING**

ITEM	SYMBOL	SMAG mm(inch)
Carrier width	A	2.79±0.1(0.110±0.004)
Carrier length	B	5.33±0.1(0.210±0.004)
Carrier depth	C	2.36±0.1(0.093±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.002)
Reel outside diameter	D	279±2.0 (11± 0.079)
Reel inner diameter	D1	75 ±1.0 ( 2.95 ±0.039)
Feed hole diameter	D2	13±0.5(0.512±0.020)
Sprocket hole position	E	1.75±0.1(0.069±0.004)
Punch hole position	F	5.5±0.05(0.217±0.002)
Punch hole pitch	P	4.0±0.1(0.157±0.004)
Sprocket hole pitch	P0	4.0±0.1(0.157±0.004)
Embossment center	P1	2.0±0.1(0.079±0.004)
Totall tape thickness	T	0.28±0.02(0.011 ±0.0008)
Tape width	W	12.0±0.2(0.472±0.008)
Reel width	W1	16.8±2.0(0.661±0.079)

NOTE: Devices are packed in accordance with EIA standard RS-481-A and specification given above.

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