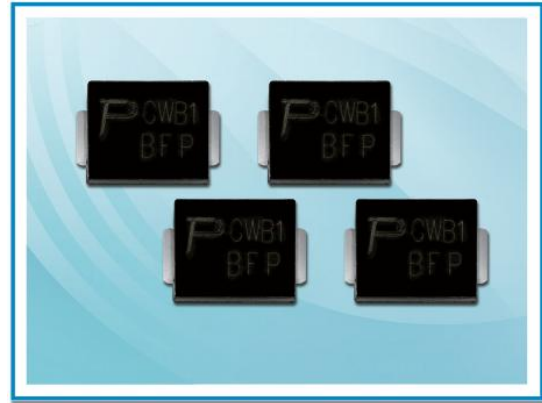


## TVS Diode – ASMCJ Series

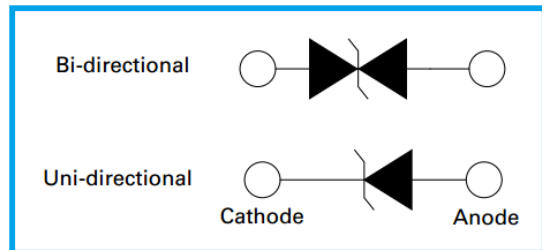
### Features

- Plastic package, excellent insulation strength.
- Glass passivated chip junction in SMC package.
- Excellent voltage clamping capability.
- Automotive grade AEC-Q101 qualified.
- Low Zener impedance.
- 1500W peak pulse power capability on 10/1000 $\mu$ s waveform.
- Typical leakage current less than 1 $\mu$ A above 13V.
- Very fast response time, typically less than 1.0ps from 0 volt to V<sub>BR</sub> minimum.
- High temperature soldering guaranteed: 265°C/10 sec.
- MSL: JEDEC-J-STD-020, Level 1



### Applications

- I/O interface, V<sub>CC</sub> bus
- Telecom / Automotive
- Industrial and consumer electronic applications.
- Relay and electromagnetic valve surge absorption.



### Agency Approval

- UL certification pending

### Mechanical and Physical Data

- Case: JEDEC SMC molded plastic.
- Axial leaded, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denoted cathode except bidirectional.

### Maximum Ratings and Thermal Characteristics

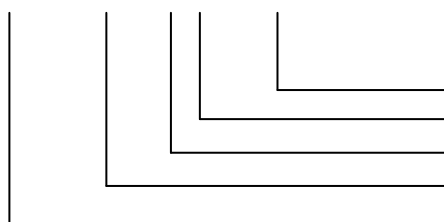
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (Note 1, Fig.1).	P <sub>PPM</sub>	Min 1500	Watt
Peak Pulse Current of 10/1000 $\mu$ s waveform (Note 1, Fig.3).	I <sub>PPM</sub>	See Table	Amp
Steady State Power Dissipation at TL = 75°C, Lead lengths 0.375", (9.5mm) (Fig.5).	P <sub>M(AV)</sub>	6.5	Watt
Peak Forward Surge Current, 8.3 ms Single Half Sine Wave Superimposed on Rated Load (Note 2, Fig.6).	I <sub>FSM</sub>	200	Amp
Operating Junction and Storage Temperature Range.	T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C

Note:

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub> = 25°C per Fig.2.
2. 8.3ms single half sine wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

### Part Number Code

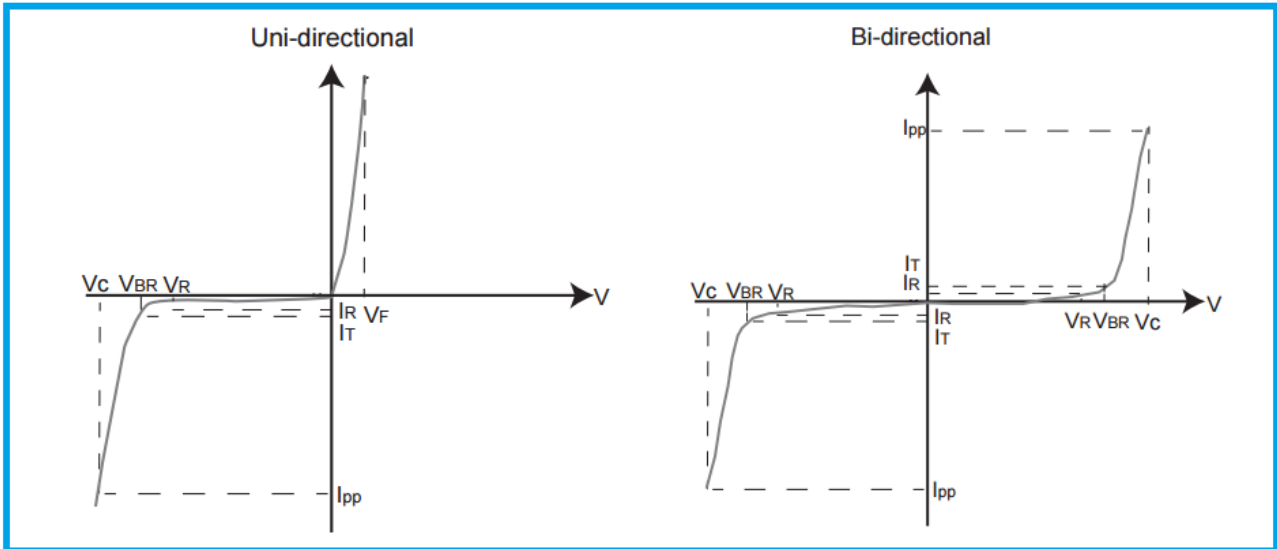
ASMCJ □□□ CA - □□□



- Packaging Code (T13: Tape with 13" Reel; T7: Tape with 7")
- V<sub>BR</sub> Voltage tolerance (A: 5%; Blank: 10%)
- C: Bi-directional; Blank: Uni-directional
- Reverse Stand-Off Voltage or Typical Breakdown Voltage
- Automotive ASMCJ Series (1500W)

## TVS Diode – ASMCJ Series

### I-V Curve Characteristics



- $I_{PPM}$  Peak Pulse Power Dissipation – Maximum power dissipation
- $V_R$  Stand-off Voltage – Maximum voltage that can be applied to the TVS without operation
- $V_{BR}$  Breakdown Voltage – Maximum voltage that flows through the TVS at a specified test current ( $I_T$ )
- $V_C$  Clamping Voltage – Peak voltage measured across the TVS at a specified  $I_{PPM}$  (Peak Impulse Current)
- $I_R$  Reverse Leakage Current – Current measured at  $V_R$
- $V_F$  Forward Voltage Drop for Uni-directional

### Electrical Characteristics

Part Number		Marking		Reverse Stand Off Voltage $V_R$ (V)	Breakdown Voltage $V_{BR}$ (V) @ $I_T$		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_C$ (V) @ $I_{PP}$	Maximum Peak Pulse Current $I_{PP}$ (A)	Maximum Reverse Leakage $I_R$ ( $\mu$ A) @ $V_R$	UL
Uni	Bi	Uni	Bi		Min.	Max.					
ASMCJ10A	ASMCJ10CA	GDXA	BDXA	10.0	11.1	12.3	1	17.0	88.3	5	Pending
ASMCJ11A	ASMCJ11CA	GDZA	BDZA	11.0	12.2	13.5	1	18.2	82.5	1	Pending
ASMCJ12A	ASMCJ12CA	GEEA	BEEA	12.0	13.3	14.7	1	19.9	75.4	1	Pending
ASMCJ13A	ASMCJ13CA	GEGA	BEGA	13.0	14.4	15.9	1	21.5	69.8	1	Pending
ASMCJ14A	ASMCJ14CA	GEKA	BEKA	14.0	15.6	17.2	1	23.2	64.7	1	Pending
ASMCJ15A	ASMCJ15CA	GEMA	BEMA	15.0	16.7	18.5	1	24.4	61.5	1	Pending
ASMCJ16A	ASMCJ16CA	GEPA	BEPA	16.0	17.8	19.7	1	26.0	57.7	1	Pending
ASMCJ17A	ASMCJ17CA	GERA	BERA	17.0	18.9	20.9	1	27.6	54.4	1	Pending
ASMCJ18A	ASMCJ18CA	GETA	BETA	18.0	20.0	22.1	1	29.2	51.4	1	Pending
ASMCJ19A	ASMCJ19CA	GEBA	BEBA	19.0	21.1	23.3	1	30.8	48.7	1	Pending
ASMCJ20A	ASMCJ20CA	GEVA	BEVA	20.0	22.2	24.5	1	32.4	46.3	1	Pending
ASMCJ22A	ASMCJ22CA	GEXA	BEXA	22.0	24.4	26.9	1	35.5	42.3	1	Pending
ASMCJ24A	ASMCJ24CA	GEZA	BEZA	24.0	26.7	29.5	1	38.9	38.6	1	Pending
ASMCJ26A	ASMCJ26CA	GFEA	BFEA	26.0	28.9	31.9	1	42.1	35.7	1	Pending
ASMCJ28A	ASMCJ28CA	GFGA	BFGA	28.0	31.1	34.4	1	45.4	33.1	1	Pending
ASMCJ30A	ASMCJ30CA	GFGA	BFKA	30.0	33.3	36.8	1	48.4	31.0	1	Pending
ASMCJ33A	ASMCJ33CA	GFMA	BFMA	33.0	36.7	40.6	1	53.3	28.2	1	Pending
ASMCJ36A	ASMCJ36CA	GFPA	BFPA	36.0	40.0	44.2	1	58.1	25.9	1	Pending
ASMCJ40A	ASMCJ40CA	GFRA	BFRA	40.0	44.4	49.1	1	64.5	23.3	1	Pending



## TVS Diode – ASMCJ Series

Part Number		Marking		Reverse Stand Off Voltage $V_R$ (V)	Breakdown Voltage $V_{BR}$ (V) @ $I_R$		Test Current $I_R$ (mA)	Maximum Clamping Voltage $V_C$ (V) @ $I_{PP}$	Maximum Peak Pulse Current $I_{PP}$ (A)	Maximum Reverse Leakage $I_R$ ( $\mu$ A) @ $V_R$	UL
Uni	Bi	Uni	Bi		Min.	Max.					
ASMCJ43A	ASMCJ43CA	GFTA	BFTA	43.0	47.8	52.8	1	69.4	21.7	1	Pending
ASMCJ45A	ASMCJ45CA	GFVA	BFVA	45.0	50.0	55.3	1	72.7	20.6	1	Pending
ASMCJ48A	ASMCJ48CA	GFXA	BFXA	48.0	53.3	58.9	1	77.4	19.4	1	Pending
ASMCJ51A	ASMCJ51CA	GFZA	BFZA	51.0	56.7	62.7	1	82.4	18.2	1	Pending
ASMCJ54A	ASMCJ54CA	GGEA	BGEA	54.0	60.0	66.3	1	87.1	17.3	1	Pending
ASMCJ58A	ASMCJ58CA	GGGA	BGGA	58.0	64.4	71.2	1	93.6	16.1	1	Pending
ASMCJ60A	ASMCJ60CA	GGKA	BGKA	60.0	66.7	73.7	1	96.8	15.5	1	Pending
ASMCJ64A	ASMCJ64CA	GGMA	BGMA	64.0	71.1	78.6	1	103.0	14.6	1	Pending
ASMCJ70A	ASMCJ70CA	GGPA	BGPA	70.0	77.8	86.0	1	113.0	13.3	1	Pending
ASMCJ75A	ASMCJ75CA	GGRA	BGRA	75.0	83.3	92.1	1	121.0	12.4	1	Pending
ASMCJ78A	ASMCJ78CA	GGTA	BGTA	78.0	86.7	95.8	1	126.0	11.9	1	Pending

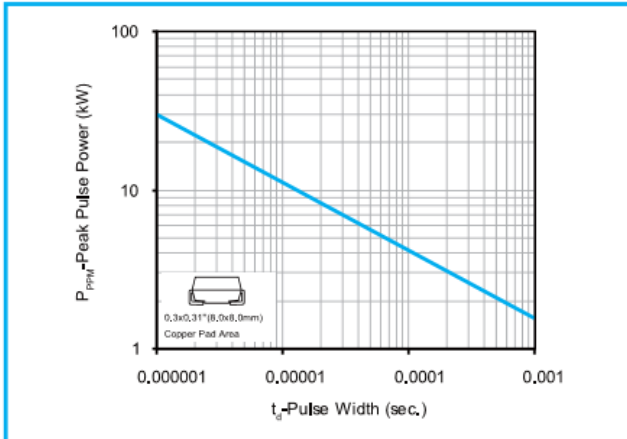
**Note:**

1. For bi-directional type having  $V_R$  of 10 volts and less, the  $I_R$  limit is double.

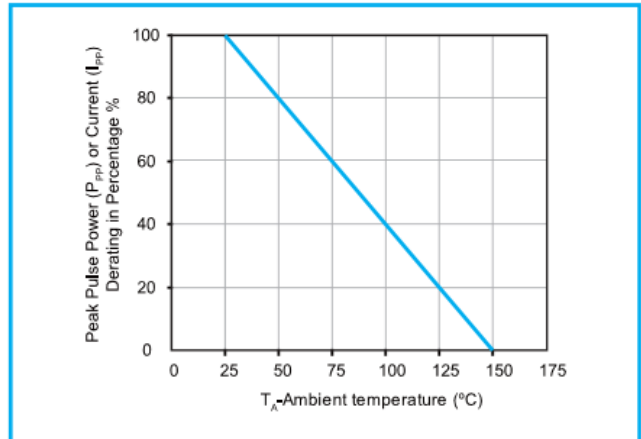
## TVS Diode – ASMCJ Series

### Ratings and Characteristic Curves

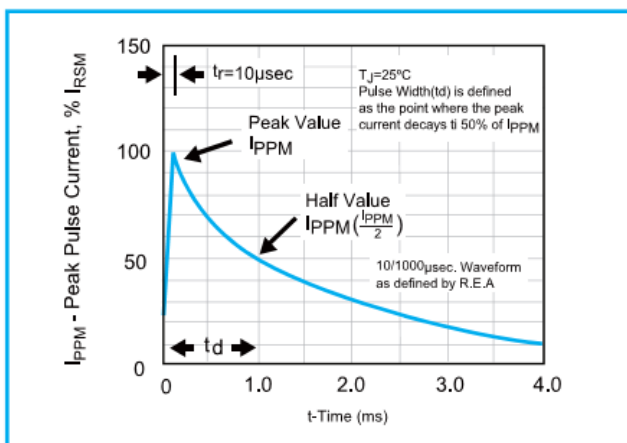
**Fig 1 - Peak Pulse Power Rating Curve**



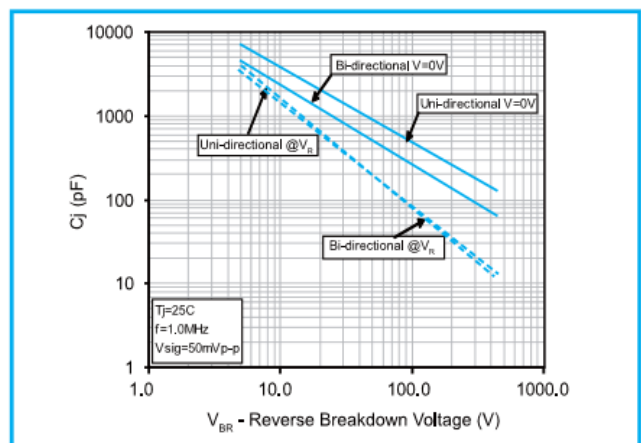
**Fig 2 - Pulse Derating Curve**



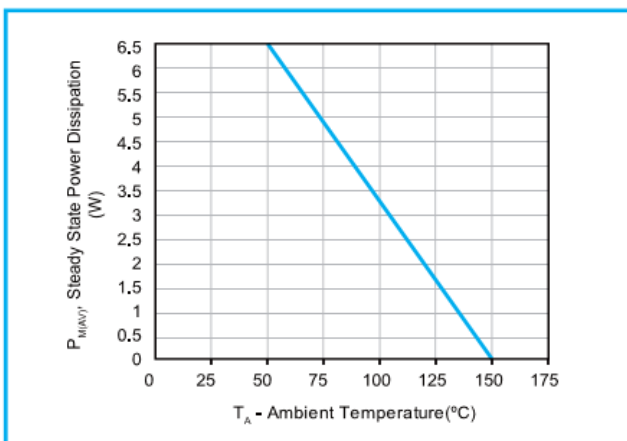
**Fig 3 - Pulse Waveform**



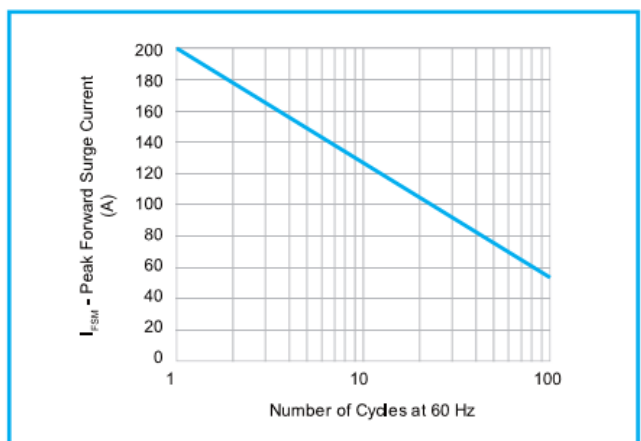
**Fig 4 - Typical Junction Capacitance Uni-directional**



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

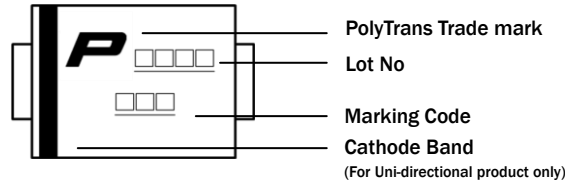


**Fig 6 - Maximum Non-Repetitive Forward Surge Current (Uni-directional Only)**

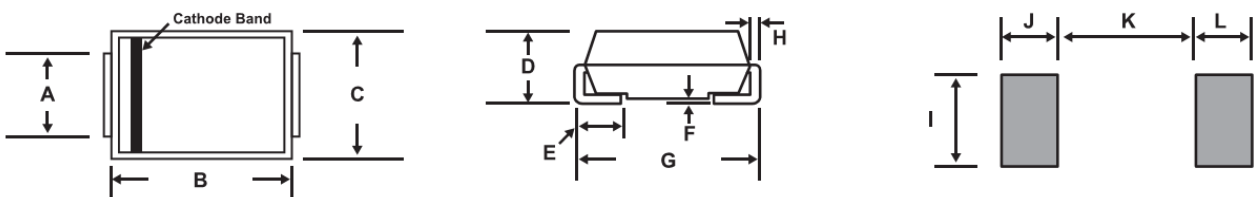


## TVS Diode – ASMCJ Series

### Marking Definitions



### Physical Dimensions



Dimension	Millimeters		Inches	
	Min	Max	Min	Max
A	2.90	3.20	0.114	0.126
B	6.60	7.11	0.260	0.280
C	5.59	6.22	0.220	0.245
D	2.20	2.80	0.087	0.110
E	0.76	1.52	0.030	0.060
F	-	0.20	-	0.008
G	7.75	8.13	0.305	0.320
H	0.15	0.31	0.006	0.012
I	3.30	-	0.129	-
J	2.40	-	0.094	-
K	-	4.20	-	0.165
L	2.40	-	0.094	-

### Lead Free Reflow Soldering Recommendations

Preheat	
- Temperature Min ( $T_{s\_min}$ )	150°C
- Temperature Max ( $T_{s\_max}$ )	200°C
- Time ( $T_{s\_min}$ to $T_{s\_max}$ )	60-180 seconds
- Average Ramp-Up Rate	1~3°C/second
Peak Temperature	260°C max.
Time within 5°C of actual Peak Temperature ( $t_p$ )	40 seconds max.
Ramp-Down Rate	6 °C /second max.



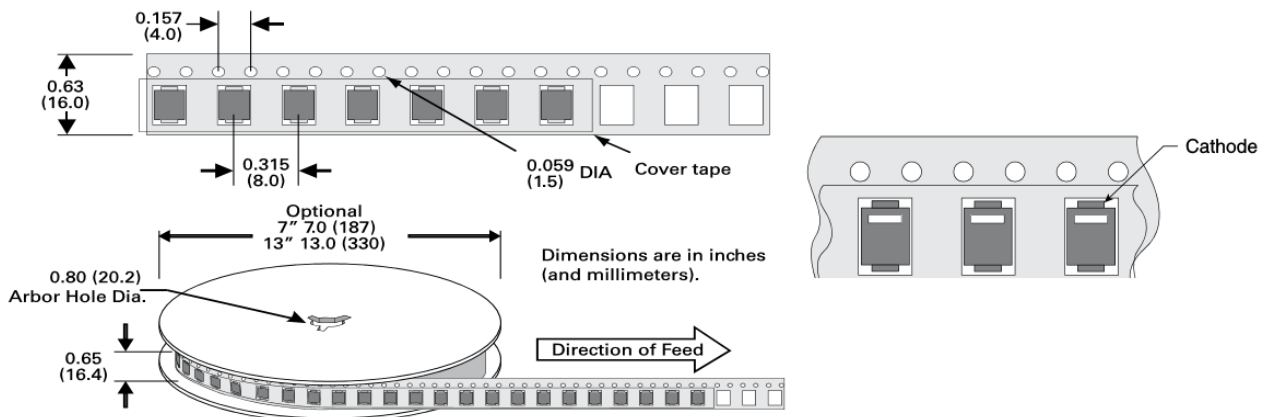
Note: If the soldering temperatures exceed the recommended profile, devices may not meet the performance requirements.

## TVS Diode – ASMCJ Series

### Packaging Information

Part Number	Packaging Code	Component Package	Quantity	Packaging Option	Packaging Specification
ASMCJ Series	T13	D0-214AB	3000	Tape & Reel - 16mm tape/13" reel	EIA STD RS-481
ASMCJ Series	T7	D0-214AB	500	Tape & Reel - 16mm tape/7" reel	EIA STD RS-481

### Tape and Reel Specifications



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[MPLAD30KP43CAE3](#) [SMAJ43A-TP](#) [D5V0F6U8LP33-7](#) [TVS5501V10MUT5G](#) [5.0SMLJ24CA-TP](#) [SMAJ110CA-TP](#) [MPLAD15KP75CAE3](#)  
[MMAD1103e3/TR13](#) [DFLT40AQ-7](#)