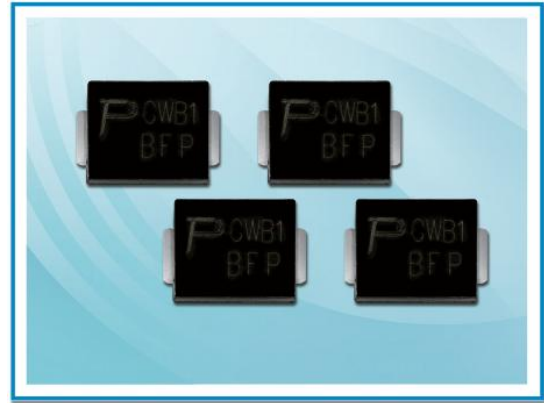


TVS Diode – ASMCJ Series

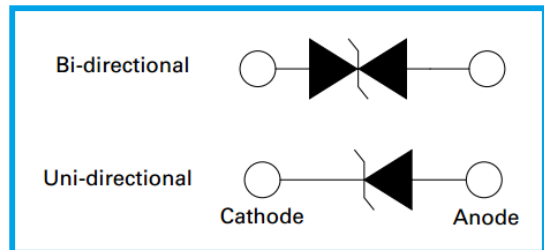
Features

- 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 μ s waveform.
- Typical leakage current less than 1 μ A above 13V.
- Very fast response time, typically less than 1.0ps from 0 volt to V_{BR} minimum.
- High temperature soldering guaranteed: 265°C/10 sec.
- MSL: JEDEC-J-STD-020, Level 1



Applications

- I/O interface, V_{CC} 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

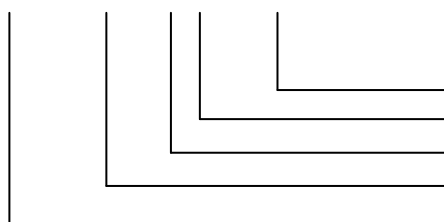
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note 1, Fig.1).	P_{PPM}	Min 1500	Watt
Peak Pulse Current of 10/1000 μ s waveform (Note 1, Fig.3).	I_{PPM}	See Table	Amp
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$, Lead lengths 0.375", (9.5mm) (Fig.5).	$P_{M(AV)}$	6.5	Watt
Peak Forward Surge Current, 8.3 ms Single Half Sine Wave Superimposed on Rated Load (Note 2, Fig.6).	I_{FSM}	200	Amp
Operating Junction and Storage Temperature Range.	T_J, T_{STG}	-55~150	$^\circ\text{C}$

Note:

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.

Part Number Code

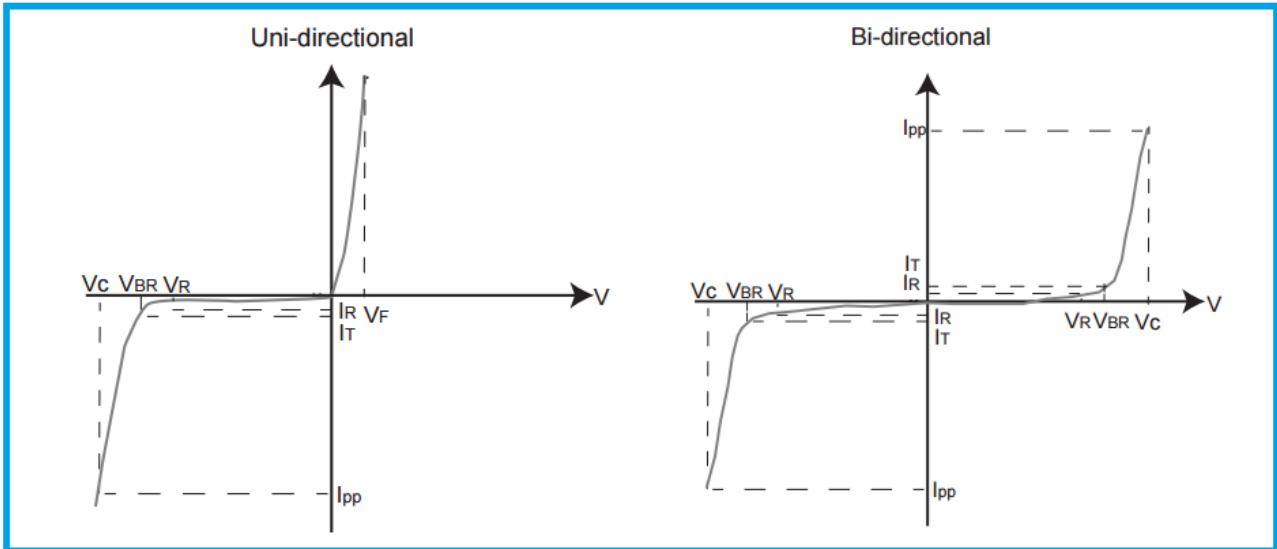
ASMCJ □□□ CA - □□□



- Packaging Code (T13: Tape with 13" Reel; T7: Tape with 7")
- V_{BR} 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 (μ 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 (μ 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

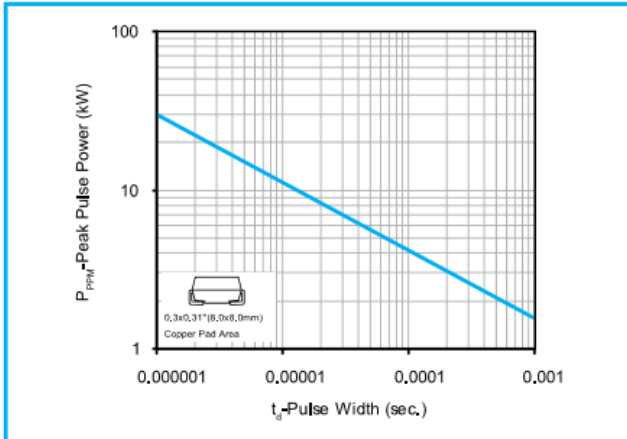


Fig 2 - Pulse Derating Curve

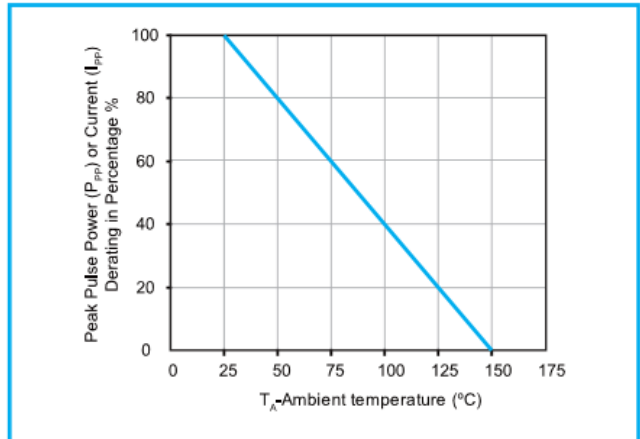


Fig 3 - Pulse Waveform

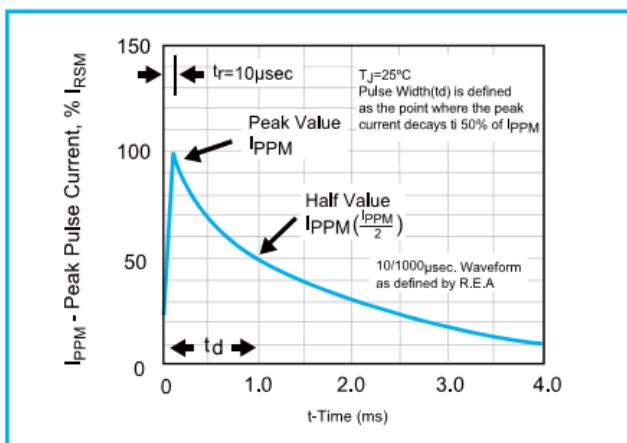


Fig 4 - Typical Junction Capacitance Uni-directional

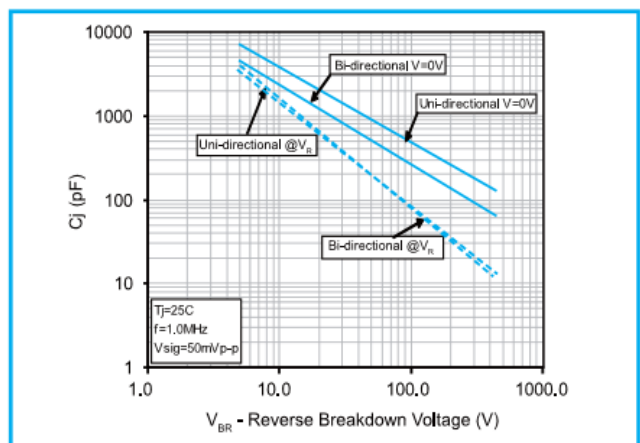


Fig 5 - Steady State Power Dissipation Derating Curve

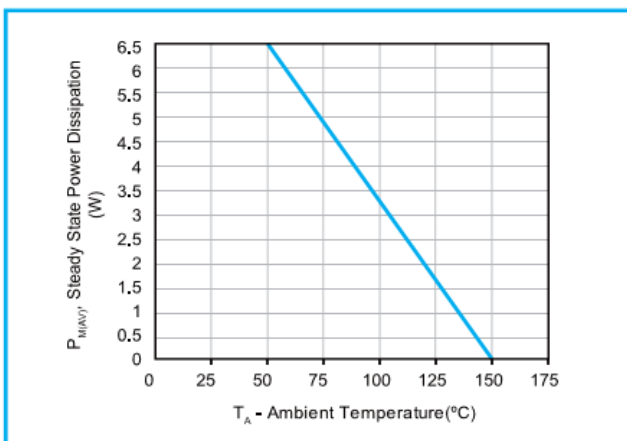
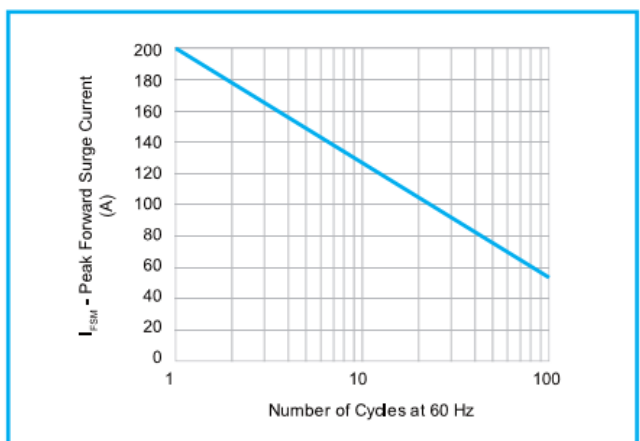
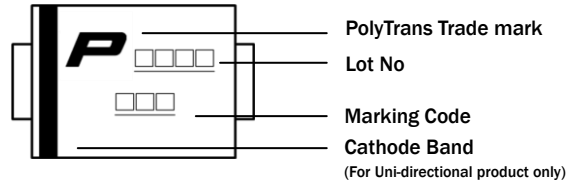


Fig 6 - Maximum Non-Repetitive Forward Surge Current (Uni-directional Only)

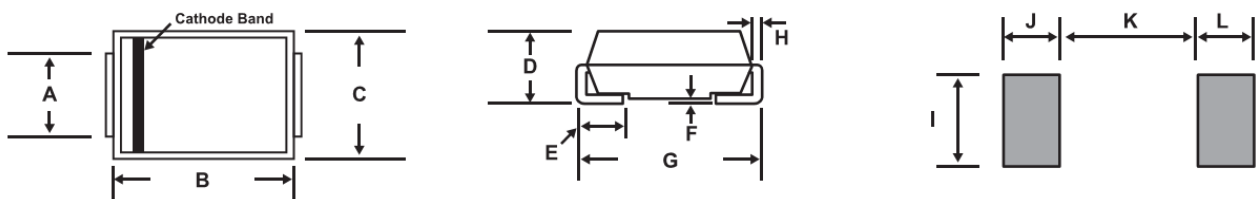


TVS Diode – ASMCJ Series

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

