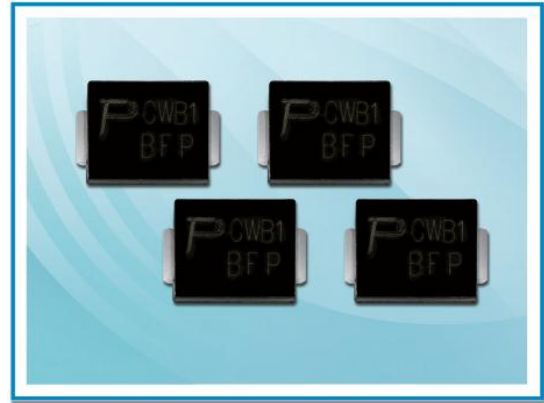


TVS Diode – ASMCJ Series

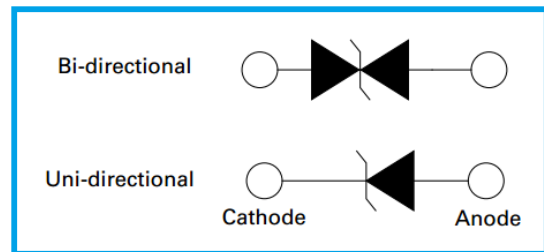
Features

- 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 10/1000μs waveform.
- Typical leakage current less than 1μA 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.



Mechanical and Physical Data

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

Maximum Ratings and Thermal Characteristics

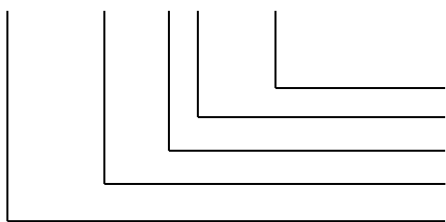
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000μs waveform (Note 1, Fig.1).	P _{PPM}	Min 1500	Watt
Peak Pulse Current of 10/1000μs waveform (Note 1, Fig.3).	I _{PPM}	See Table	Amp
Steady State Power Dissipation at T _L = 75°C, Lead lengths 0.375", (9.5mm) (Fig.5).	P _{M(AV)}	6.5	Watt
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	°C

Note:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 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_{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
Uni	Bi	Uni	Bi		Min.	Max.				
ASMCJ5.0A	ASMCJ5.0CA	GDEA	BDEA	5.0	6.40	7.00	10	9.2	163.04	800
ASMCJ6.0A	ASMCJ6.0CA	GDGA	BDGA	6.0	6.67	7.37	10	10.3	145.63	800
ASMCJ6.5A	ASMCJ6.5CA	GDKA	BDKA	6.5	7.22	7.98	10	11.2	133.93	500
ASMCJ7.0A	ASMCJ7.0CA	GDMA	BDMA	7.0	7.78	8.60	10	12.0	125.00	200
ASMCJ7.5A	ASMCJ7.5CA	GDPA	BDPA	7.5	8.33	9.21	1	12.9	116.28	100
ASMCJ8.0A	ASMCJ8.0CA	GDRA	BDRA	8.0	8.89	9.83	1	13.6	110.29	50
ASMCJ8.5A	ASMCJ8.5CA	GDTA	BDTA	8.5	9.44	10.40	1	14.4	104.17	20
ASMCJ9.0A	ASMCJ9.0CA	GDVA	BDVA	9.0	10.00	11.10	1	15.4	97.40	10
ASMCJ10A	ASMCJ10CA	GDXA	BDXA	10.0	11.10	12.30	1	17.0	88.24	5
ASMCJ11A	ASMCJ11CA	GDZA	BDZA	11.0	12.20	13.50	1	18.2	82.42	1
ASMCJ12A	ASMCJ12CA	GEEA	BEEA	12.0	13.30	14.70	1	19.9	75.38	1
ASMCJ13A	ASMCJ13CA	GEGA	BEGA	13.0	14.40	15.90	1	21.5	69.77	1
ASMCJ14A	ASMCJ14CA	GEKA	BEKA	14.0	15.60	17.20	1	23.2	64.66	1
ASMCJ15A	ASMCJ15CA	GEMA	BEMA	15.0	16.70	18.50	1	24.4	61.48	1
ASMCJ16A	ASMCJ16CA	GEPA	BEPA	16.0	17.80	19.70	1	26.0	57.69	1
ASMCJ17A	ASMCJ17CA	GERA	BERA	17.0	18.90	20.90	1	27.6	54.35	1
ASMCJ18A	ASMCJ18CA	GETA	BETA	18.0	20.00	22.10	1	29.2	51.37	1

TVS Diode – ASMCJ Series

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
Uni	Bi	Uni	Bi		Min.	Max.				
ASMCJ19A	ASMCJ19CA	GEBA	BEBA	19.0	21.10	23.30	1	30.8	48.73	1
ASMCJ20A	ASMCJ20CA	GEVA	BEVA	20.0	22.20	24.50	1	32.4	46.30	1
ASMCJ22A	ASMCJ22CA	GEXA	BEXA	22.0	24.40	26.90	1	35.5	42.25	1
ASMCJ24A	ASMCJ24CA	GEZA	BEZA	24.0	26.70	29.50	1	38.9	38.56	1
ASMCJ26A	ASMCJ26CA	GFEA	BFEA	26.0	28.90	31.90	1	42.1	35.63	1
ASMCJ28A	ASMCJ28CA	GFGA	BFGA	28.0	31.10	34.40	1	45.4	33.04	1
ASMCJ30A	ASMCJ30CA	GFKA	BFKA	30.0	33.30	36.80	1	48.4	30.99	1
ASMCJ33A	ASMCJ33CA	GFMA	BFMA	33.0	36.70	40.60	1	53.3	28.14	1
ASMCJ36A	ASMCJ36CA	GFPA	BFPA	36.0	40.00	44.20	1	58.1	25.82	1
ASMCJ40A	ASMCJ40CA	GFRA	BFRA	40.0	44.40	49.10	1	64.5	23.15	1
ASMCJ43A	ASMCJ43CA	GFTA	BFTA	43.0	47.80	52.80	1	69.4	21.61	1
ASMCJ45A	ASMCJ45CA	GFVA	BFVA	45.0	50.00	55.30	1	72.7	20.63	1
ASMCJ48A	ASMCJ48CA	GFXA	BFXA	48.0	53.30	58.90	1	77.4	19.38	1
ASMCJ51A	ASMCJ51CA	GFZA	BFZA	51.0	56.70	62.70	1	82.4	18.20	1
ASMCJ54A	ASMCJ54CA	GGEA	BGEA	54.0	60.00	66.30	1	87.1	17.22	1
ASMCJ58A	ASMCJ58CA	GGGA	BGGA	58.0	64.40	71.20	1	93.6	16.03	1
ASMCJ60A	ASMCJ60CA	GGKA	BGKA	60.0	66.70	73.70	1	96.8	15.50	1
ASMCJ64A	ASMCJ64CA	GGMA	BGMA	64.0	71.10	78.60	1	103.0	14.56	1
ASMCJ70A	ASMCJ70CA	GGPA	BGPA	70.0	77.80	86.00	1	113.0	13.27	1
ASMCJ75A	ASMCJ75CA	GGRA	BGRA	75.0	83.30	92.10	1	121.0	12.40	1
ASMCJ78A	ASMCJ78CA	GGTA	BGTA	78.0	86.70	95.80	1	126.0	11.90	1
ASMCJ80A	ASMCJ80CA	GGBA	BGBA	80.0	88.80	97.60	1	129.6	11.57	1
ASMCJ85A	ASMCJ85CA	GGVA	BGVA	85.0	94.40	104.0	1	137.0	10.95	1
ASMCJ90A	ASMCJ90CA	GGXA	BGXA	90.0	100.00	111.00	1	146.0	10.27	1
ASMCJ100A	ASMCJ100CA	GGZA	BGZA	100.0	111.00	123.00	1	162.0	9.26	1

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

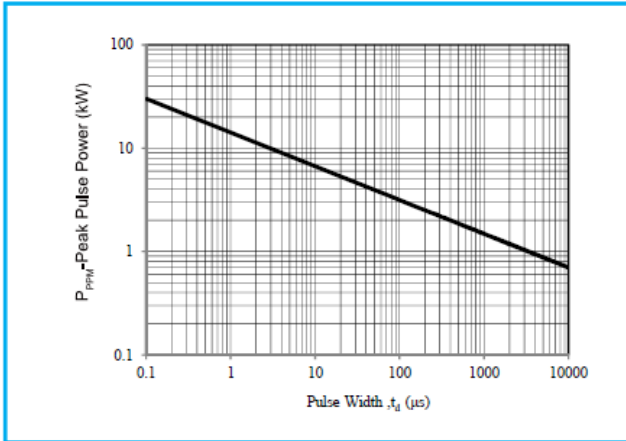


Fig 2 - Pulse Derating Curve

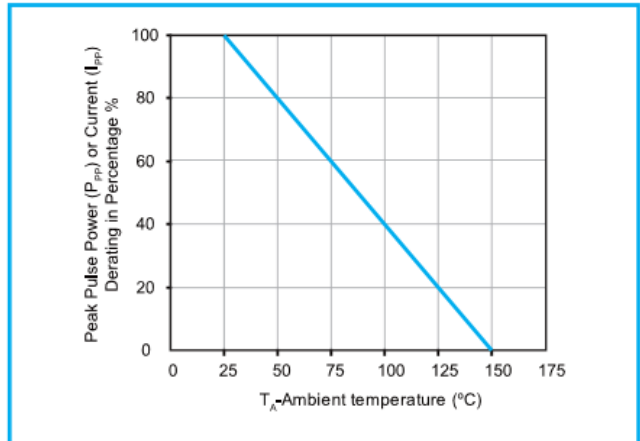


Fig 3 - Pulse Waveform

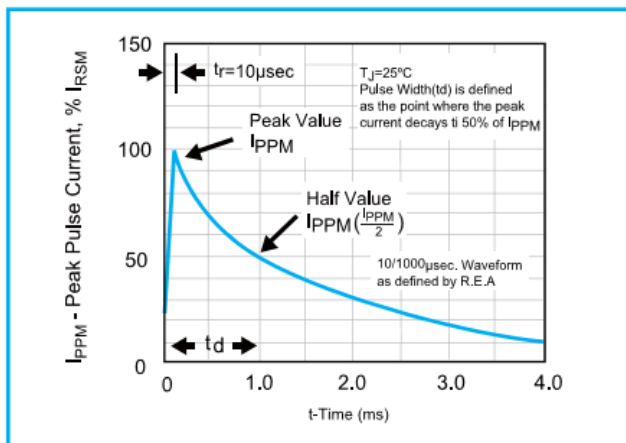


Fig 4 - Typical Junction Capacitance Uni-directional

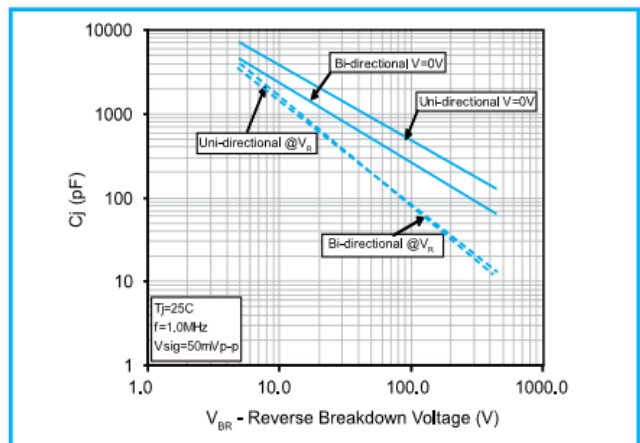


Fig 5 - Steady State Power Dissipation Derating Curve

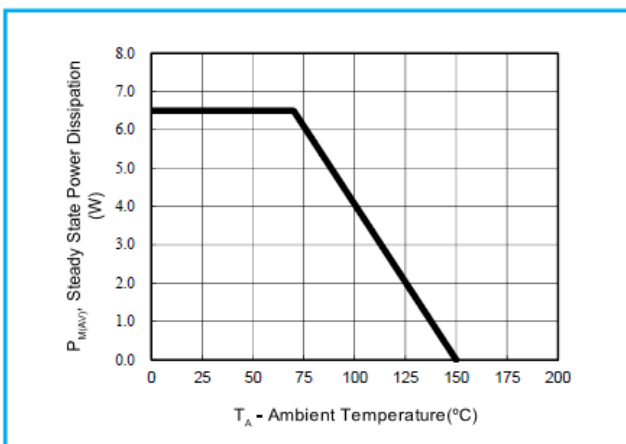
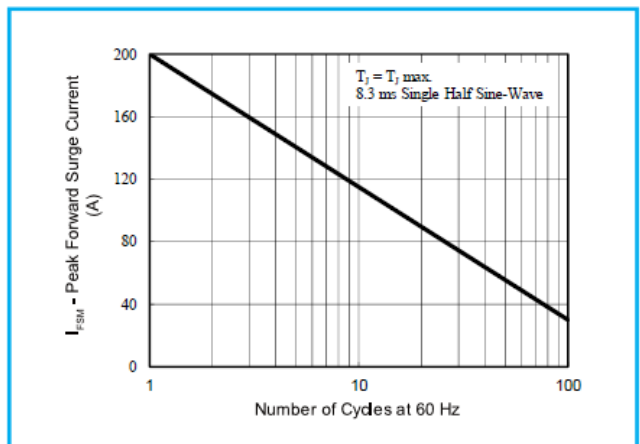
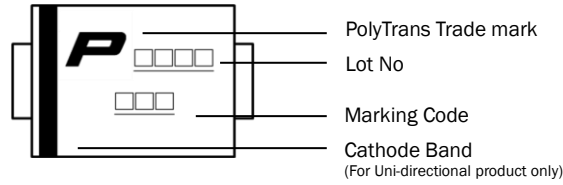


Fig 6 - Maximum Non-Repetitive Forward Surge Current (Uni-directional Only)

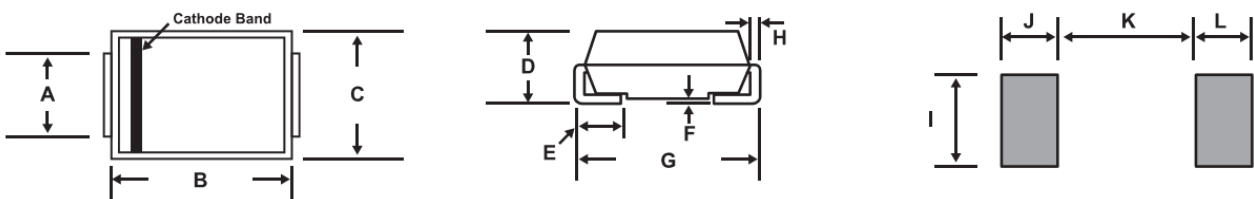


TVS Diode – ASMCJ Series

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	DO-214AB	3000	Tape & Reel - 16mm tape/13" reel	EIA STD RS-481
ASMCJ Series	T7	DO-214AB	500	Tape & Reel - 16mm tape/7" reel	EIA STD RS-481

Tape and Reel Specifications

