

Surface Mount Uni/Bi-Directional Automotive TVS Diodes



Description

The 3.0SMCJ-AT automotive series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- For surface mounted applications
- Low profile package
- 3000W Peak pulse power capability at 10/1000 μ s waveform
- Glass passivated junction
- Excellent clamping capability
- Typical IR less than 2 μ A above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- Plastic package has Underwriters Laboratory Flammability 94V-O
- Halogen-Free / RoHS compliant / Matte Tin Lead-free plated
- High temperature soldering: 260°C/40s
- High reliability and automotive grade (AEC-Q101 qualified)

Mechanical Data

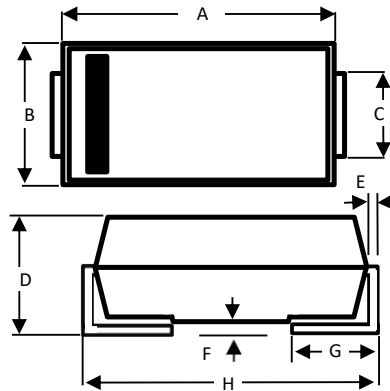
- Case: SMC(DO-214AB) package
 - Terminal: Solderable per MIL-STD-750, Method 2026
 - Polarity : by cathode band denotes uni-directional device, none cathode band denotes bi-directional device
 - Weight: 0.25 grams
- Note: Products with logo  or  are made by HY Electronic (Cayman) Limited

Applications

TVS devices are ideal for the protection of I/O Interfaces, Vcc bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

Peak Pulse Power - 3000 W
Reverse Stand Off Voltage - 5 to 85 V

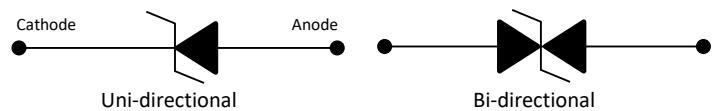
Package Outline Dimensions



SMC Package		
Dim	Min	Max
A	6.60	7.11
B	5.59	6.22
C	2.90	3.20
D	2.00	2.62
E	0.152	0.305
F	-	0.203
G	0.76	1.52
H	7.75	8.13

All Dimensions in mm

Device Schematic



Ordering Information

- Package : SMC(DO-214AB)
- Reel Size : 13 (inches)
- Quantity Per Reel : 3Kpcs
- Quantity Per Box : 6Kpcs
- Quantity Per Carton : 42Kpcs

Maximum Ratings (@TA = +25°C, unless otherwise specified.)

Absolute Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10/1000 μ s Waveform (Note 1)	PPP	3000	W
Power Dissipation on Infinite Heat Sink at TL=50°C	P _{M(AV)}	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2)	I _{FSM}	300	A
Operating Temperature Range	T _j	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	

Note:

1. Non-repetitive current pulse, per Fig.4 and derated above T_j(initial) =25°C per Fig.1
2. For unidirectional units only

Electrical Characteristics (@T_A = 25°C, unless otherwise specified.)

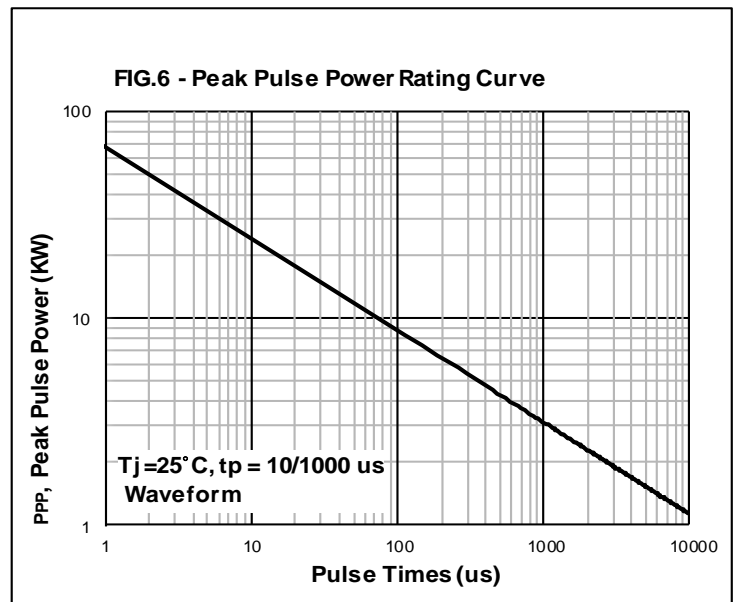
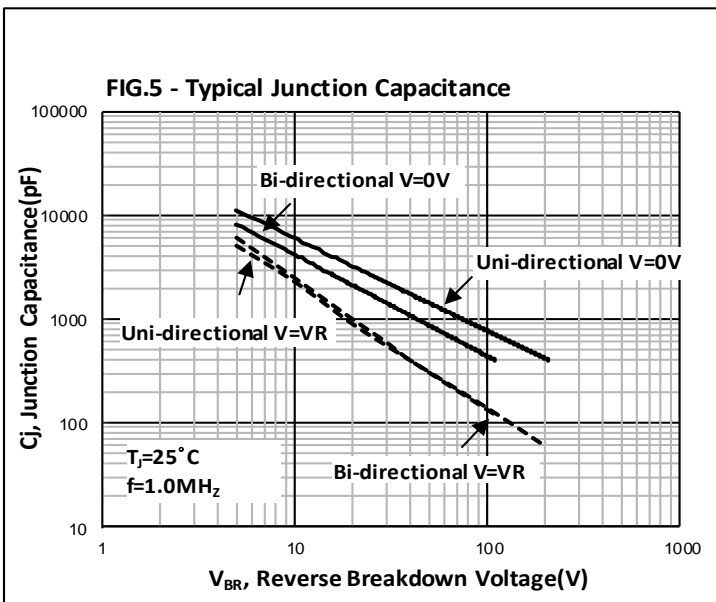
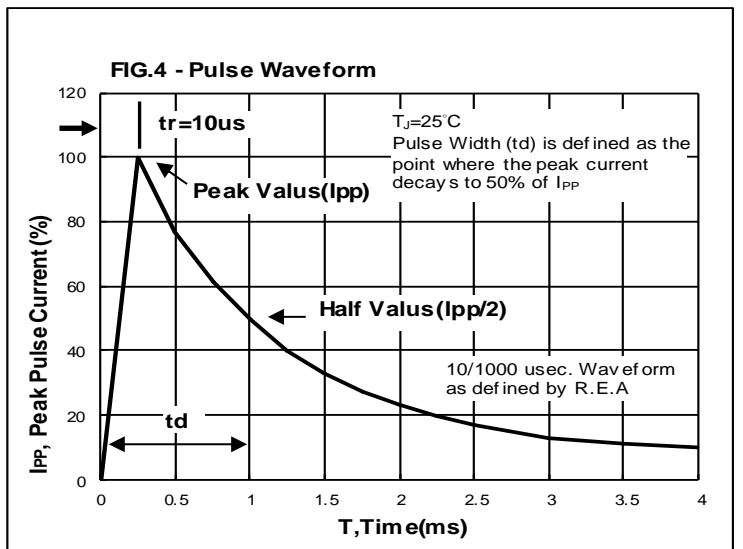
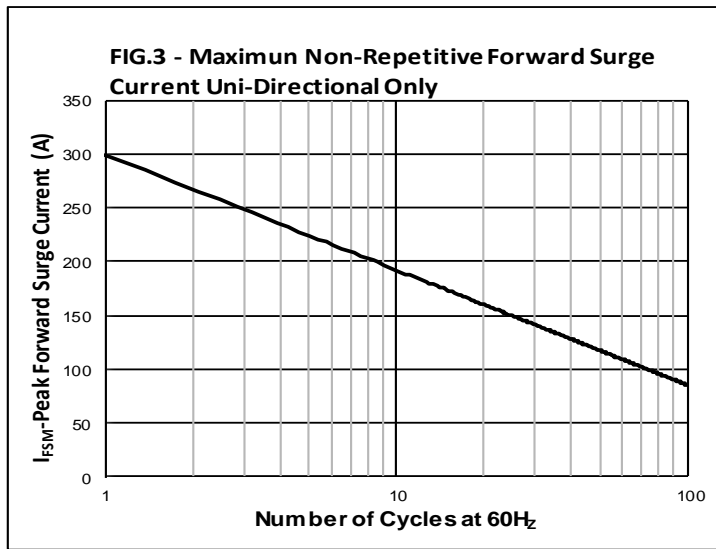
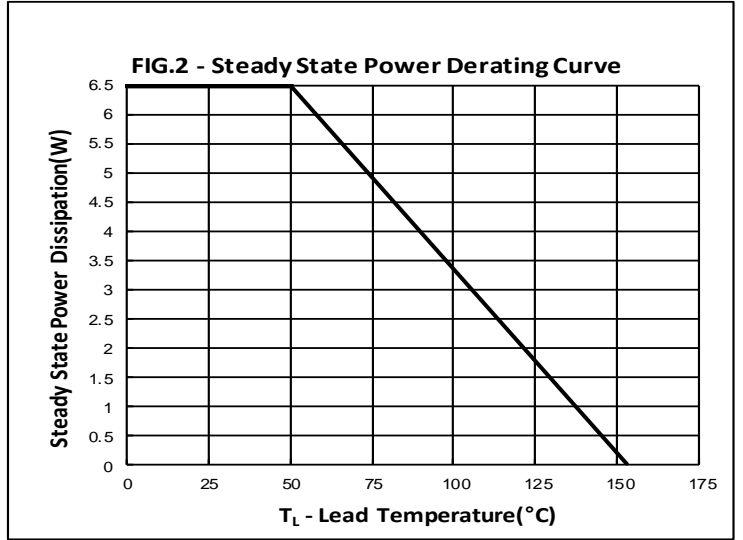
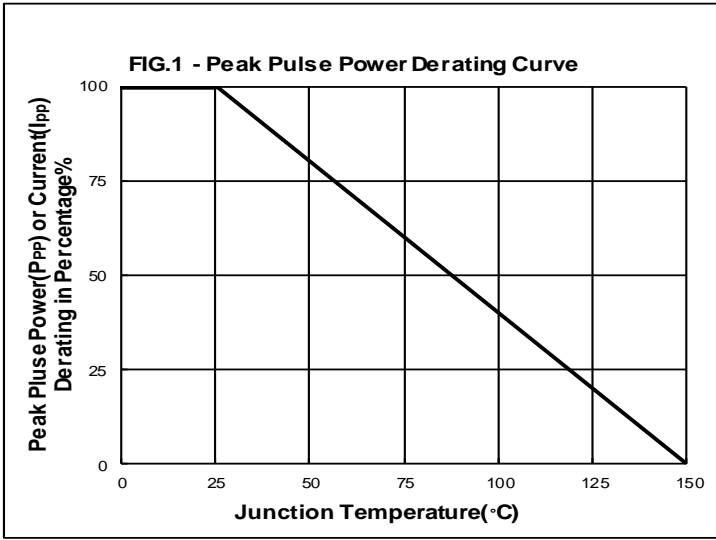
Part Number		Marking Code		Reverse Working Voltage V _{RWM} (V)	Reverse Breakdown Voltage V _B (V)			Reverse Leakage (Max) I _R (μ A) @V _R	Reverse Clamping Voltage (Max) V _C (V) @I _{PP}	Peak Pulse Current (Max) I _{PP} (A)
Uni.	Bi.	Uni.	Bi.		Min.	Max.	@I _T (mA)			
3.0SMCJ5.0A-AT	3.0SMCJ5.0CA-AT	DHR	DJL	5.0	6.40	7.00	10	800	9.2	326.1
3.0SMCJ6.0A-AT	3.0SMCJ6.0CA-AT	DHS	DJM	6.0	6.67	7.37	10	800	10.3	291.3
3.0SMCJ6.5A-AT	3.0SMCJ6.5CA-AT	DHT	DJN	6.5	7.22	7.98	10	500	11.2	267.9
3.0SMCJ7.0A-AT	3.0SMCJ7.0CA-AT	DHU	DJO	7.0	7.78	8.60	10	200	12.0	250.0
3.0SMCJ7.5A-AT	3.0SMCJ7.5CA-AT	DHV	DJP	7.5	8.33	9.21	1	100	12.9	232.6
3.0SMCJ8.0A-AT	3.0SMCJ8.0CA-AT	DHW	DJQ	8.0	8.89	9.83	1	50	13.6	220.6
3.0SMCJ8.5A-AT	3.0SMCJ8.5CA-AT	DHX	DJR	8.5	9.44	10.40	1	20	14.4	208.3
3.0SMCJ9.0A-AT	3.0SMCJ9.0CA-AT	DHY	DJS	9.0	10.00	11.10	1	10	15.4	194.8
3.0SMCJ10A-AT	3.0SMCJ10CA-AT	DHZ	DJT	10	11.10	12.30	1	5	17.0	176.5
3.0SMCJ11A-AT	3.0SMCJ11CA-AT	DIA	DJU	11	12.20	13.50	1	2	18.2	164.8
3.0SMCJ12A-AT	3.0SMCJ12CA-AT	DIB	DJV	12	13.30	14.70	1	2	19.9	150.8
3.0SMCJ13A-AT	3.0SMCJ13CA-AT	DIC	DJW	13	14.40	15.90	1	2	21.5	139.5
3.0SMCJ14A-AT	3.0SMCJ14CA-AT	DID	DJX	14	15.60	17.20	1	2	23.2	129.3
3.0SMCJ15A-AT	3.0SMCJ15CA-AT	DIE	DJY	15	16.70	18.50	1	2	24.4	123.0
3.0SMCJ16A-AT	3.0SMCJ16CA-AT	DIF	DJZ	16	17.80	19.70	1	2	26.0	115.4
3.0SMCJ17A-AT	3.0SMCJ17CA-AT	DIG	DKA	17	18.90	20.90	1	2	27.6	108.7
3.0SMCJ18A-AT	3.0SMCJ18CA-AT	DIH	DKB	18	20.00	22.10	1	2	29.2	102.7
3.0SMCJ20A-AT	3.0SMCJ20CA-AT	DII	DKC	20	22.20	24.50	1	2	32.4	92.6
3.0SMCJ22A-AT	3.0SMCJ22CA-AT	DIJ	DKD	22	24.40	26.90	1	2	35.5	84.5
3.0SMCJ24A-AT	3.0SMCJ24CA-AT	DIK	DKE	24	26.70	29.50	1	2	38.9	77.1
3.0SMCJ26A-AT	3.0SMCJ26CA-AT	DIL	DKF	26	28.90	31.90	1	2	42.1	71.3
3.0SMCJ28A-AT	3.0SMCJ28CA-AT	DIM	DKG	28	31.10	34.40	1	2	45.4	66.1
3.0SMCJ30A-AT	3.0SMCJ30CA-AT	DIN	DKH	30	33.30	36.80	1	2	48.4	62.0
3.0SMCJ33A-AT	3.0SMCJ33CA-AT	DIO	DKI	33	36.70	40.60	1	2	53.3	56.3
3.0SMCJ36A-AT	3.0SMCJ36CA-AT	DIP	DKJ	36	40.00	44.20	1	2	58.1	51.6
3.0SMCJ40A-AT	3.0SMCJ40CA-AT	DIQ	DKK	40	44.40	49.10	1	2	64.5	46.5
3.0SMCJ43A-AT	3.0SMCJ43CA-AT	DIR	DKL	43	47.80	52.80	1	2	69.4	43.2
3.0SMCJ45A-AT	3.0SMCJ45CA-AT	DIS	DKM	45	50.00	55.30	1	2	72.7	41.3
3.0SMCJ48A-AT	3.0SMCJ48CA-AT	DIT	DKN	48	53.30	58.90	1	2	77.4	38.8
3.0SMCJ51A-AT	3.0SMCJ51CA-AT	DIU	DKO	51	56.70	62.70	1	2	82.4	36.4
3.0SMCJ54A-AT	3.0SMCJ54CA-AT	DIV	DKP	54	60.00	66.30	1	2	87.1	34.4
3.0SMCJ58A-AT	3.0SMCJ58CA-AT	DIW	DKQ	58	64.40	71.20	1	2	93.6	32.1
3.0SMCJ60A-AT	3.0SMCJ60CA-AT	DIX	DKR	60	66.70	73.70	1	2	96.8	31.0
3.0SMCJ64A-AT	3.0SMCJ64CA-AT	DIY	DKS	64	71.10	78.60	1	2	103	29.1
3.0SMCJ70A-AT	3.0SMCJ70CA-AT	DIZ	DKT	70	77.80	86.00	1	2	113	26.5
3.0SMCJ75A-AT	3.0SMCJ75CA-AT	DJA	DKU	75	83.30	92.10	1	2	121	24.8
3.0SMCJ78A-AT	3.0SMCJ78CA-AT	DJB	DKV	78	86.70	95.80	1	2	126	23.8
3.0SMCJ85A-AT	3.0SMCJ85CA-AT	DJC	DKW	85	94.40	104	1	2	137	21.9
3.0SMCJ90A-AT	-	DJD	-	90	100	111	1	2	146	20.5
3.0SMCJ100A-AT	-	DJE	-	100	111	123	1	2	162	18.5
3.0SMCJ110A-AT	-	DJF	-	110	122	135	1	2	177	16.9
3.0SMCJ120A-AT	-	DJG	-	120	133	147	1	2	193	15.5
3.0SMCJ130A-AT	-	DJH	-	130	144	159	1	2	209	14.4
3.0SMCJ150A-AT	-	DJI	-	150	167	185	1	2	243	12.3
3.0SMCJ160A-AT	-	DJJ	-	160	178	197	1	2	259	11.6
3.0SMCJ170A-AT	-	DJK	-	170	189	209	1	2	275	10.9

Note:

1. Suffix "A" denotes 5% tolerance device.
2. Add suffix "CA" after part number to specify bi-directional devices.
3. The IR limit is double for bi-directional devices.



Rating and Characteristic Curves





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