

Power TVS in DO-214AA/SMB

Features

- Glass passivated chip
- 1500W peak pulse power(10/1000us)
- High accuracy, 5% tolerance
- Uni and Bidirectional unit
- Low clamping voltage
- Low Leakage current
- Very fast response time
- JESD22-A114-B ESD Voltage:HBM 15KV
- JEDEC EIA/JESD22-C101F ESD Voltage:CDM 500V
- JEDEC EIA/JESD22-A115 ESD Voltage:MM 400V
- ESD-immunity acc. IEC 61000-4-2 ±30KV contact ±30KV air

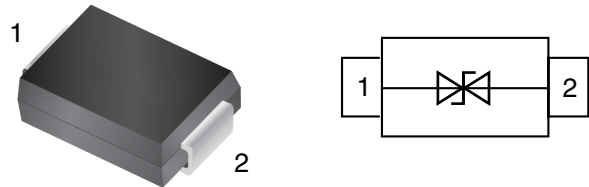
Mechanical Data

- **Case:** DO-214AA/SMB (plastic package).
RoHS compliant
- **Molding Compound Flammability Rating:**
UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
260 °C/10 sec. at terminals

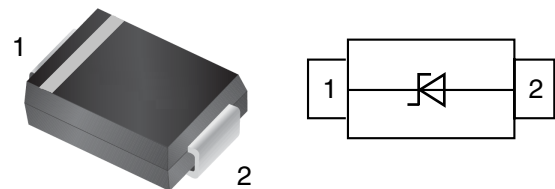


RoHS
COMPLIANT
HALOGEN
FREE

Bidirectional



Unidirectional



Applications

- Computers
- Telecom system
- Industrial equipments
- Consumer electronic applications
- Other VCC bus and I/O interfaces

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000us waveform ⁽¹⁾	P _{PP}	1500	W
Maximum peak reverse pulse current a 10/1000us waveform ⁽¹⁾	I _{PP}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave ⁽²⁾	I _{FSM}	200	A
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C

Notes:

- 1.Non-repetitive current pulse,per Fig.5 and detated above TA=25°C per Fig.1
- 2.Measured on 8.3ms single half sine-wave,or equivalent square wave,duty cycle=4 pulses per minute maximum

Electrical Characteristics

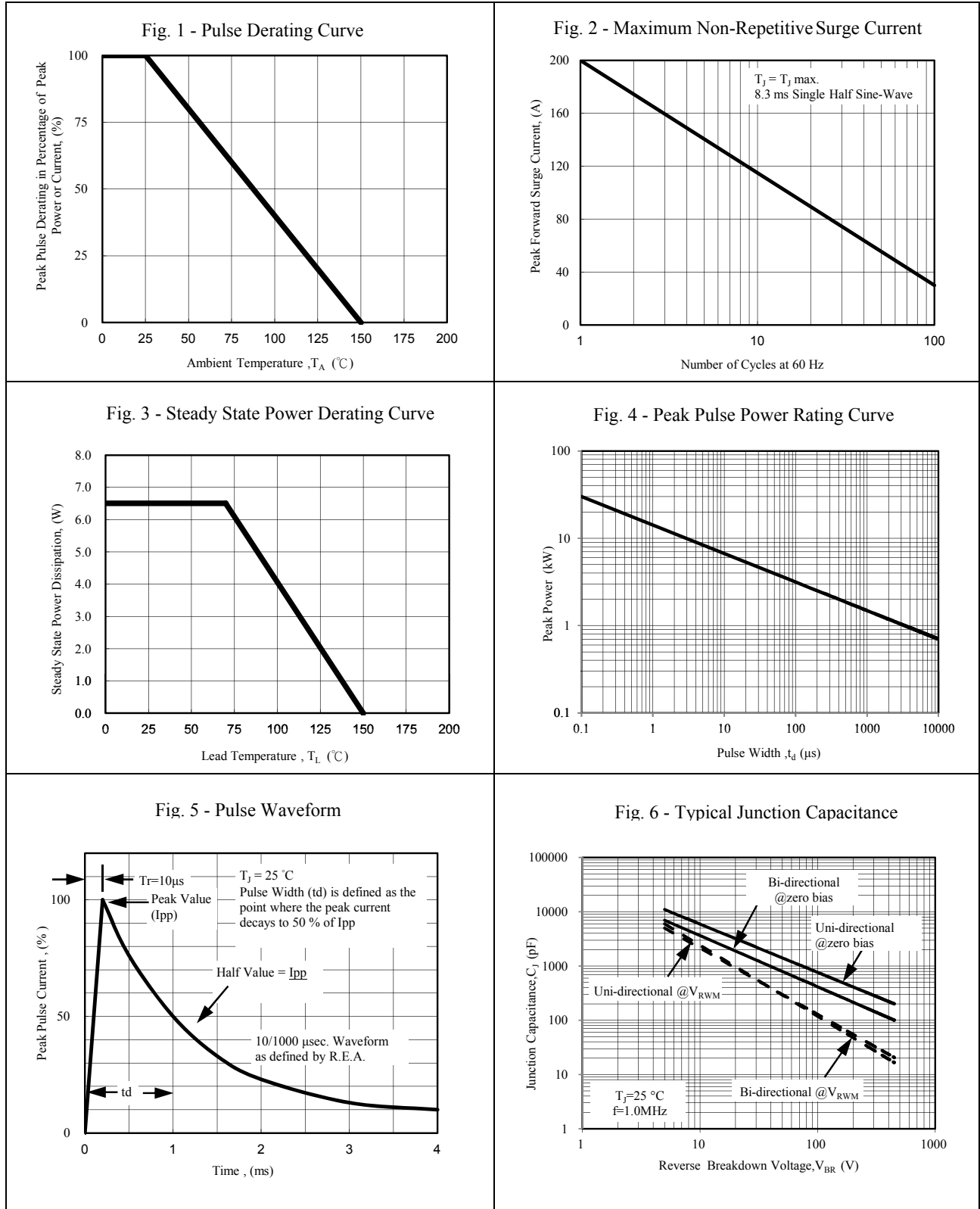
(T_A = 25 °C unless otherwise specified)

Part Number	Marking	Direction	Maximum Working Voltage V _{RWM} (V)	Maximum Reverse Current@V _{RWM} I _R max(μA)	Breakdown Voltage@I _T			Peak Surge Current I _{PP} (A)	Maximum Clamping Voltage@I _{PP} V _C (V)
					V _{BR} min(V)	V _{BR} max(V)	I _T (mA)		
1.5SMBJ5.0A	GDE	Uni-Dir	5.0	800	6.4	7.00	10	163.04	9.2
1.5SMBJ5.0CA	BDE	Bi-Dir	5.0	1600	6.4	7.00	10	163.04	9.2
1.5SMBJ6.0A	GDG	Uni-Dir	6.0	800	6.7	7.37	10	145.63	10.3
1.5SMBJ6.0CA	BDG	Bi-Dir	6.0	1600	6.7	7.37	10	145.63	10.3
1.5SMBJ6.5A	GDK	Uni-Dir	6.5	500	7.2	7.98	10	133.93	11.2
1.5SMBJ6.5CA	BDK	Bi-Dir	6.5	1000	7.2	7.98	10	133.93	11.2
1.5SMBJ7.0A	GDM	Uni-Dir	7.0	200	7.8	8.60	10	125.00	12.0
1.5SMBJ7.0CA	BDM	Bi-Dir	7.0	400	7.8	8.60	10	125.00	12.0
1.5SMBJ7.5A	GDP	Uni-Dir	7.5	100	8.3	9.21	1	116.28	12.9
1.5SMBJ7.5CA	BDP	Bi-Dir	7.5	200	8.3	9.21	1	116.28	12.9
1.5SMBJ8.0A	GDR	Uni-Dir	8.0	50	8.9	9.83	1	110.29	13.6
1.5SMBJ8.0CA	BDR	Bi-Dir	8.0	100	8.9	9.83	1	110.29	13.6
1.5SMBJ8.5A	GDT	Uni-Dir	8.5	20	9.4	10.40	1	104.17	14.4
1.5SMBJ8.5CA	BDT	Bi-Dir	8.5	40	9.4	10.40	1	104.17	14.4
1.5SMBJ9.0A	GDV	Uni-Dir	9.0	10	10.0	11.10	1	97.40	15.4
1.5SMBJ9.0CA	BDV	Bi-Dir	9.0	20	10.0	11.10	1	97.40	15.4
1.5SMBJ10A	GDX	Uni-Dir	10.0	5	11.1	12.30	1	88.24	17.0
1.5SMBJ10CA	BDX	Bi-Dir	10.0	10	11.1	12.30	1	88.24	17.0
1.5SMBJ11A	GDZ	Uni-Dir	11.0	1	12.2	13.50	1	82.42	18.2
1.5SMBJ11CA	BDZ	Bi-Dir	11.0	1	12.2	13.50	1	82.42	18.2
1.5SMBJ12A	GEE	Uni-Dir	12.0	1	13.3	14.70	1	75.38	19.9
1.5SMBJ12CA	BEE	Bi-Dir	12.0	1	13.3	14.70	1	75.38	19.9
1.5SMBJ13A	GEG	Uni-Dir	13.0	1	14.4	15.90	1	69.77	21.5
1.5SMBJ13CA	BEG	Bi-Dir	13.0	1	14.4	15.90	1	69.77	21.5
1.5SMBJ14A	GEK	Uni-Dir	14.0	1	15.6	17.20	1	64.66	23.2
1.5SMBJ14CA	BEK	Bi-Dir	14.0	1	15.6	17.20	1	64.66	23.2
1.5SMBJ15A	GEM	Uni-Dir	15.0	1	16.7	18.50	1	61.48	24.4
1.5SMBJ15CA	BEM	Bi-Dir	15.0	1	16.7	18.50	1	61.48	24.4
1.5SMBJ16A	GEP	Uni-Dir	16.0	1	17.8	19.70	1	57.69	26.0
1.5SMBJ16CA	BEP	Bi-Dir	16.0	1	17.8	19.70	1	57.69	26.0
1.5SMBJ17A	GER	Uni-Dir	17.0	1	18.9	20.90	1	54.35	27.6
1.5SMBJ17CA	BER	Bi-Dir	17.0	1	18.9	20.90	1	54.35	27.6
1.5SMBJ18A	GET	Uni-Dir	18.0	1	20.0	22.10	1	51.37	29.2
1.5SMBJ18CA	BET	Bi-Dir	18.0	1	20.0	22.10	1	51.37	29.2
1.5SMBJ19A	GEW	Uni-Dir	19.0	1	21.1	23.30	1	48.73	30.8
1.5SMBJ19CA	BEW	Bi-Dir	19.0	1	21.1	23.30	1	48.73	30.8
1.5SMBJ20A	GEV	Uni-Dir	20.0	1	22.2	24.50	1	46.30	32.4
1.5SMBJ20CA	BEV	Bi-Dir	20.0	1	22.2	24.50	1	46.30	32.4

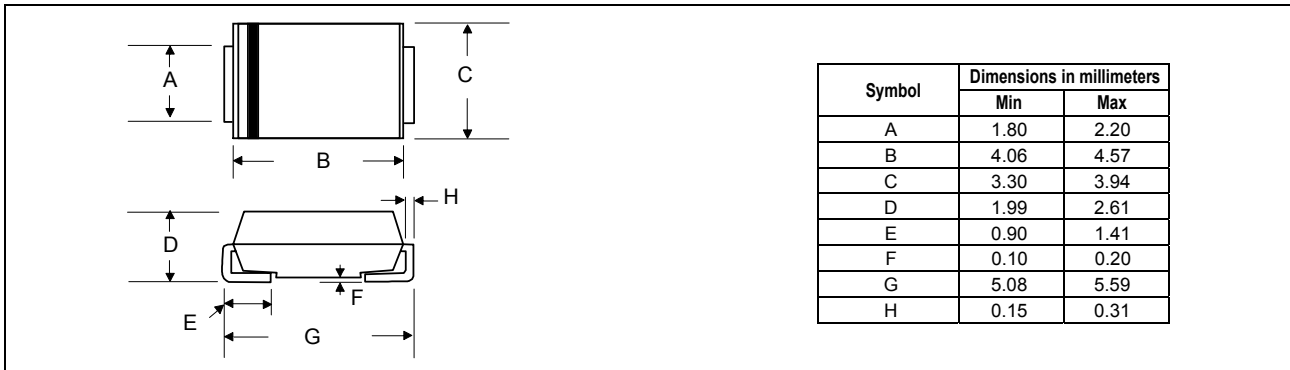
Part Number	Marking	Direction	Maximum Working Voltage V_{RWM} (V)	Maximum Reverse Current@ V_{RWM} I_R max(uA)	Breakdown Voltage@ I_T			Peak Surge Current I_{PP} (A)	Maximum Clamping Voltage@ I_{PP} V_C (V)
					V_{BR} min(V)	V_{BR} max(V)	I_T (mA)		
1.5SMBJ22A	GEX	Uni-Dir	22.0	1	24.4	26.90	1	42.25	35.5
1.5SMBJ22CA	BEX	Bi-Dir	22.0	1	24.4	26.90	1	42.25	35.5
1.5SMBJ24A	GEZ	Uni-Dir	24.0	1	26.7	29.50	1	38.56	38.9
1.5SMBJ24CA	BEZ	Bi-Dir	24.0	1	26.7	29.50	1	38.56	38.9
1.5SMBJ26A	GFE	Uni-Dir	26.0	1	28.9	31.90	1	35.63	42.1
1.5SMBJ26CA	BFE	Bi-Dir	26.0	1	28.9	31.90	1	35.63	42.1
1.5SMBJ28A	GFG	Uni-Dir	28.0	1	31.1	34.40	1	33.04	45.4
1.5SMBJ28CA	BFG	Bi-Dir	28.0	1	31.1	34.40	1	33.04	45.4
1.5SMBJ30A	GFK	Uni-Dir	30.0	1	33.3	36.80	1	30.99	48.4
1.5SMBJ30CA	BFK	Bi-Dir	30.0	1	33.3	36.80	1	30.99	48.4
1.5SMBJ33A	GFM	Uni-Dir	33.0	1	36.7	40.60	1	28.14	53.3
1.5SMBJ33CA	BFM	Bi-Dir	33.0	1	36.7	40.60	1	28.14	53.3
1.5SMBJ36A	GFP	Uni-Dir	36.0	1	40.0	44.20	1	25.82	58.1
1.5SMBJ36CA	BFP	Bi-Dir	36.0	1	40.0	44.20	1	25.82	58.1
1.5SMBJ40A	GFR	Uni-Dir	40.0	1	44.4	49.10	1	23.26	64.5
1.5SMBJ40CA	BFR	Bi-Dir	40.0	1	44.4	49.10	1	23.26	64.5
1.5SMBJ43A	GFT	Uni-Dir	43.0	1	47.8	52.80	1	21.61	69.4
1.5SMBJ43CA	BFT	Bi-Dir	43.0	1	47.8	52.80	1	21.61	69.4
1.5SMBJ45A	GFV	Uni-Dir	45.0	1	50.0	55.30	1	20.63	72.7
1.5SMBJ45CA	BFV	Bi-Dir	45.0	1	50.0	55.30	1	20.63	72.7
1.5SMBJ48A	GFX	Uni-Dir	48.0	1	53.3	58.90	1	19.38	77.4
1.5SMBJ48CA	BFX	Bi-Dir	48.0	1	53.3	58.90	1	19.38	77.4
1.5SMBJ51A	GFZ	Uni-Dir	51.0	1	56.7	62.70	1	18.20	82.4
1.5SMBJ51CA	BFZ	Bi-Dir	51.0	1	56.7	62.70	1	18.20	82.4
1.5SMBJ54A	GGE	Uni-Dir	54.0	1	60.0	66.30	1	17.22	87.1
1.5SMBJ54CA	BGE	Bi-Dir	54.0	1	60.0	66.30	1	17.22	87.1
1.5SMBJ58A	GGG	Uni-Dir	58.0	1	64.4	71.20	1	16.03	93.6
1.5SMBJ58CA	BGG	Bi-Dir	58.0	1	64.4	71.20	1	16.03	93.6
1.5SMBJ60A	GGK	Uni-Dir	60.0	1	66.7	73.70	1	15.50	96.8
1.5SMBJ60CA	BGK	Bi-Dir	60.0	1	66.7	73.70	1	15.50	96.8
1.5SMBJ64A	GGM	Uni-Dir	64.0	1	71.1	78.60	1	14.56	103.0
1.5SMBJ64CA	BGM	Bi-Dir	64.0	1	71.1	78.60	1	14.56	103.0
1.5SMBJ70A	GGP	Uni-Dir	70.0	1	77.8	86.00	1	13.27	113.0
1.5SMBJ70CA	BGP	Bi-Dir	70.0	1	77.8	86.00	1	13.27	113.0
1.5SMBJ75A	GGR	Uni-Dir	75.0	1	83.3	92.10	1	12.40	121.0
1.5SMBJ75CA	BGR	Bi-Dir	75.0	1	83.3	92.10	1	12.40	121.0
1.5SMBJ78A	GGT	Uni-Dir	78.0	1	86.7	95.80	1	11.90	126.0
1.5SMBJ78CA	BGT	Bi-Dir	78.0	1	86.7	95.80	1	11.90	126.0

Part Number	Marking	Direction	Maximum Working Voltage V_{RWM} (V)	Maximum Reverse Current@ V_{RWM} I_R max(μ A)	Breakdown Voltage@ I_T			Peak Surge Current I_{PP} (A)	Maximum Clamping Voltage@ I_{PP} V_C (V)
					V_{BR} min(V)	V_{BR} max(V)	I_T (mA)		
1.5SMBJ80A	GGW	Uni-Dir	80.0	1	88.8	97.60	1	11.57	129.6
1.5SMBJ80CA	BGW	Bi-Dir	80.0	1	88.8	97.60	1	11.57	129.6
1.5SMBJ85A	GGV	Uni-Dir	85.0	1	94.4	104.00	1	10.95	137.0
1.5SMBJ85CA	BGV	Bi-Dir	85.0	1	94.4	104.00	1	10.95	137.0
1.5SMBJ90A	GGX	Uni-Dir	90.0	1	100.0	111.00	1	10.27	146.0
1.5SMBJ90CA	BGX	Bi-Dir	90.0	1	100.0	111.00	1	10.27	146.0
1.5SMBJ100A	GGZ	Uni-Dir	100.0	1	111.0	123.00	1	9.26	162.0
1.5SMBJ100CA	BGZ	Bi-Dir	100.0	1	111.0	123.00	1	9.26	162.0
1.5SMBJ110A	GHE	Uni-Dir	110.0	1	122.0	135.00	1	8.47	177.0
1.5SMBJ110CA	BHE	Bi-Dir	110.0	1	122.0	135.00	1	8.47	177.0
1.5SMBJ120A	GHG	Uni-Dir	120.0	1	133.0	147.00	1	7.77	193.0
1.5SMBJ120CA	BHG	Bi-Dir	120.0	1	133.0	147.00	1	7.77	193.0
1.5SMBJ130A	GHK	Uni-Dir	130.0	1	144.0	159.00	1	7.18	209.0
1.5SMBJ130CA	BHK	Bi-Dir	130.0	1	144.0	159.00	1	7.18	209.0
1.5SMBJ140A	GHL	Uni-Dir	140.0	1	155.0	171.00	1	6.61	226.8
1.5SMBJ140CA	BHL	Bi-Dir	140.0	1	155.0	171.00	1	6.61	226.8
1.5SMBJ150A	GHM	Uni-Dir	150.0	1	167.0	185.00	1	6.17	243.0
1.5SMBJ150CA	BHM	Bi-Dir	150.0	1	167.0	185.00	1	6.17	243.0
1.5SMBJ160A	GHP	Uni-Dir	160.0	1	178.0	197.00	1	5.79	259.0
1.5SMBJ160CA	BHP	Bi-Dir	160.0	1	178.0	197.00	1	5.79	259.0
1.5SMBJ170A	GHR	Uni-Dir	170.0	1	189.0	209.00	1	5.45	275.0
1.5SMBJ170CA	BHR	Bi-Dir	170.0	1	189.0	209.00	1	5.45	275.0
1.5SMBJ180A	GHT	Uni-Dir	180.0	1	200.0	220.00	1	5.14	291.6
1.5SMBJ180CA	BHT	Bi-Dir	180.0	1	200.0	220.00	1	5.14	291.6
1.5SMBJ190A	GHW	Uni-Dir	190.0	1	211.0	232.00	1	4.87	307.8
1.5SMBJ200A	GHV	Uni-Dir	200.0	1	224.0	247.00	1	4.60	324.0
1.5SMBJ210A	BHW	Bi-Dir	210.0	1	231.0	268.00	1	4.40	340.0
1.5SMBJ220A	GHX	Uni-Dir	220.0	1	246.0	272.00	1	4.20	356.0

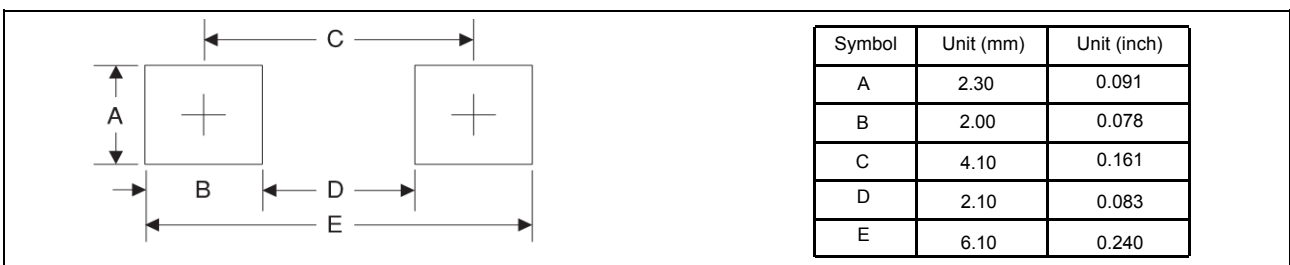
Typical Characteristics ($T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)



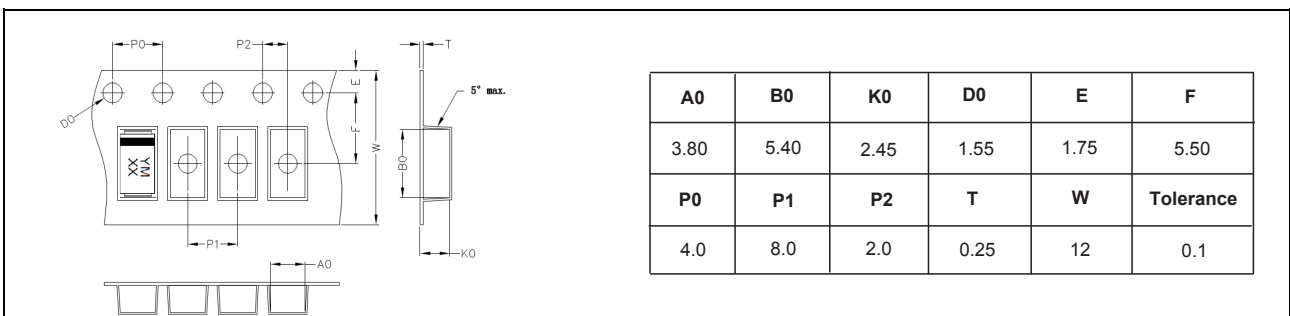
Package Dimensions



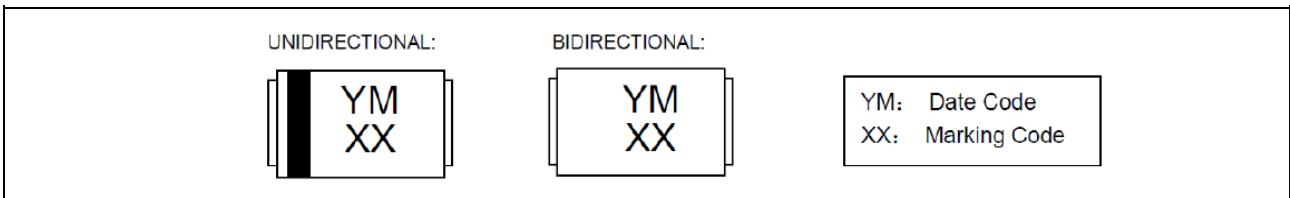
PAD Dimensions



Packing Information



Marking



Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
1.5SMBJ Series	DO-214AA/SMB	Tape and reel	3000pcs / reel	EIA STD RS-481

Revision history

Date	Revision	Changes
23-May-2020	1.0	Initial release

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