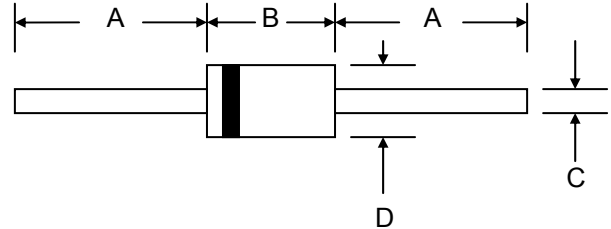


### Features

- Glass Passivated Die Construction
- 500W Peak Pulse Power Dissipation
- 5.0V – 220V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Voltage
- Typical Response Time < 1nS
- Plastic Case Material has UL Flammability Classification Rating 94V-0



### Mechanical Data

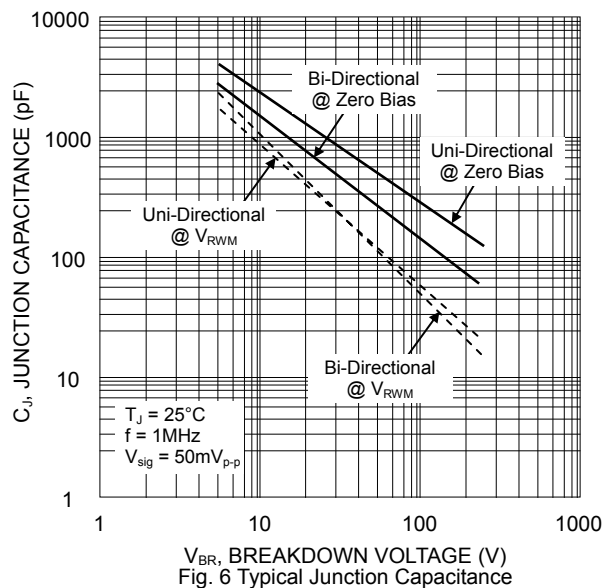
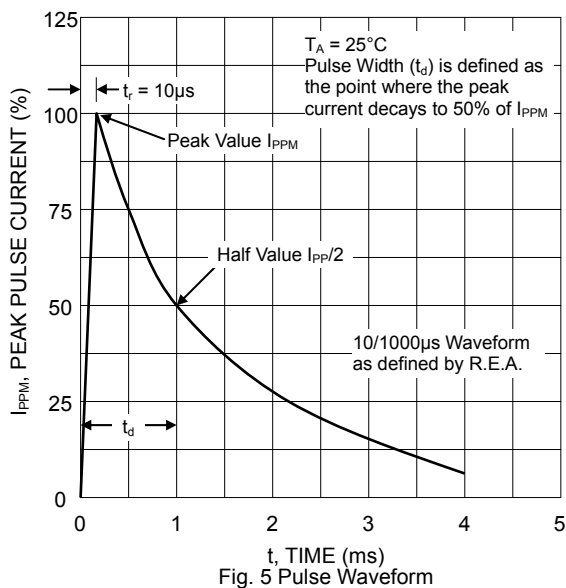
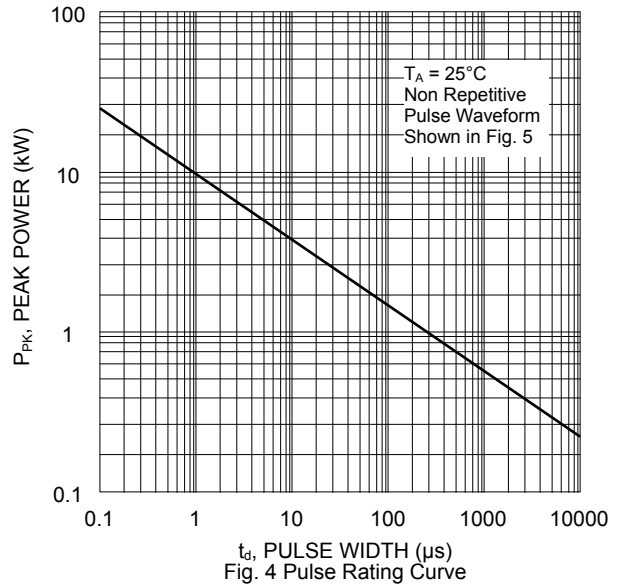
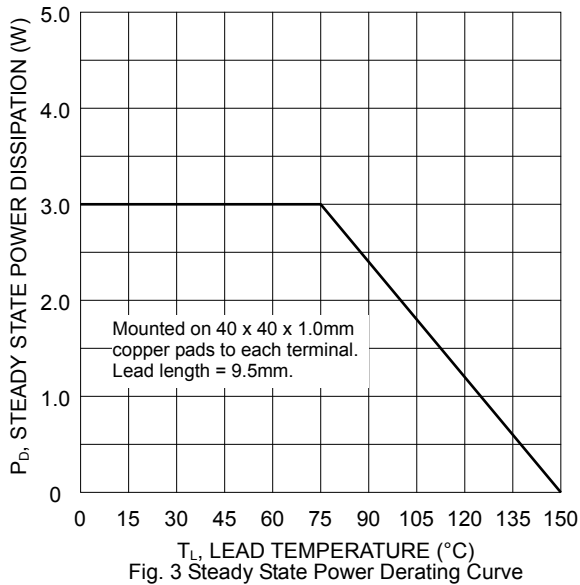
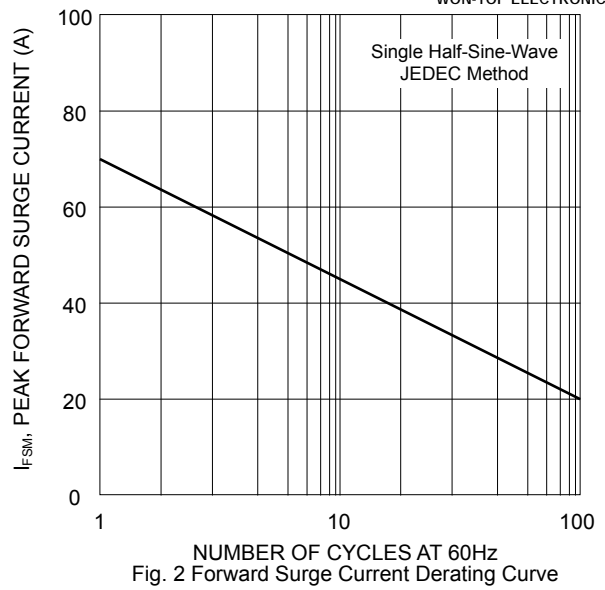
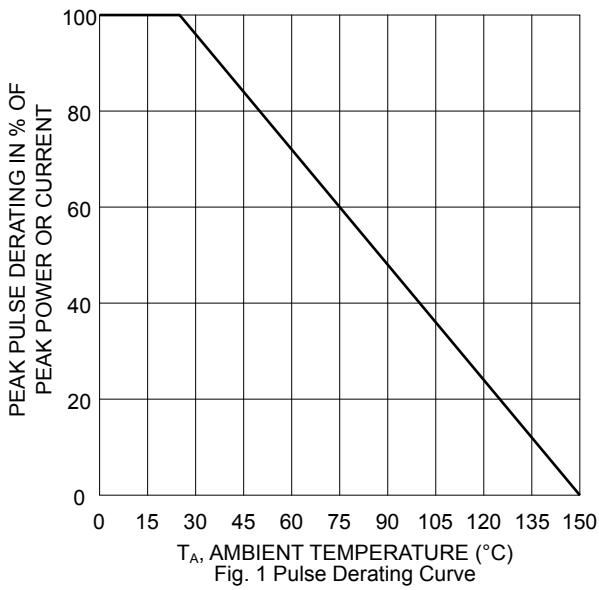
- Case: DO-15, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band Except Bi-Directional
- Weight: 0.40 grams (approx.)
- Mounting Position: Any
- Marking: Type Number
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 6**

DO-15		
Dim	Min	Max
A	25.4	—
B	5.50	7.62
C	0.71	0.864
D	2.60	3.60
All Dimensions in mm		

### Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 $\mu\text{S}$ Waveform (Note 1, 2, 5)	PPPM	500	W
Peak Pulse Current on 10/1000 $\mu\text{S}$ Waveform (Note 1)	IPPM	See Table 1	A
Peak Forward Surge Current (Note 2, 3)	IFSM	70	A
Maximum Instantaneous Forward Voltage at 35A (Note 3, 4)	$V_F$	3.5 / 5.0	V
Power Dissipation at $T_L = 75^\circ\text{C}$ (Note 2)	$P_D$	3.0	W
Typical Thermal Resistance, Junction to Ambient (Note 2)	$R_{JA}$	75	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction to Lead (Note 2)	$R_{JL}$	20	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Note: 1. Non-repetitive current pulse per Figure 5 and derated above  $T_A = 25^\circ\text{C}$  per Figure 1.  
 2. Mounted on 40 x 40 x 1.0mm thick copper pads to each terminal that maintained at a distance of 9.5mm from the case.  
 3. Measured on 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum. For uni-directional devices only.  
 4.  $V_F < 3.5\text{V}$  for  $V_{BR} \leq 200\text{V}$  and  $V_F < 5.0\text{V}$  for  $V_{BR} \geq 201\text{V}$ .  
 5. Peak pulse power waveform is 10/1000 $\mu\text{S}$ .



**Electrical Characteristics (@T<sub>A</sub>=25°C unless otherwise specified) Table 1**

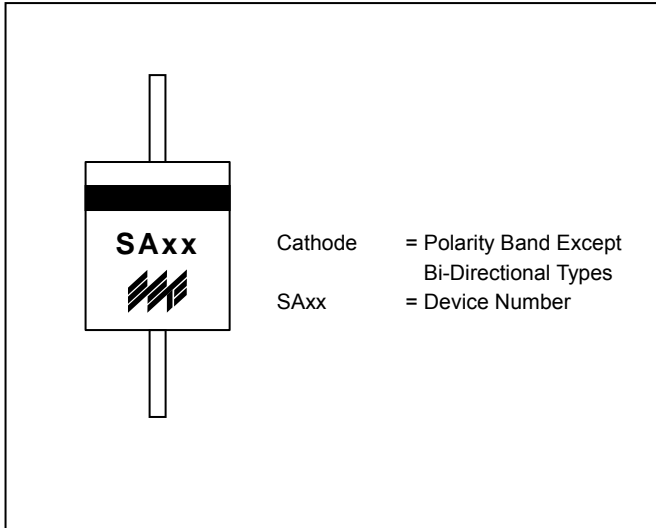
Uni-Directional Part No.	Bi-Directional Part No.	Reverse Stand-Off Voltage V <sub>RWM</sub> (V)	Breakdown Voltage V <sub>BR</sub> (V) @I <sub>T</sub>		Test Current I <sub>T</sub> (mA)	Maximum Clamping Voltage @I <sub>PP</sub> V <sub>C</sub> (V)	Peak Pulse Current I <sub>PP</sub> (A)	Reverse Leakage* @V <sub>RWM</sub> I <sub>R</sub> (μA)
			Min.	Max.				
SA5.0	SA5.0C	5.0	6.40	7.30	10	9.6	52.08	600
SA5.0A	SA5.0CA	5.0	6.40	7.00	10	9.2	54.35	600
SA6.0	SA6.0C	6.0	6.67	8.15	10	11.4	43.86	600
SA6.0A	SA6.0CA	6.0	6.67	7.37	10	10.3	48.54	600
SA6.5	SA6.5C	6.5	7.22	8.82	10	12.3	40.65	400
SA6.5A	SA6.5CA	6.5	7.22	7.98	10	11.2	44.64	400
SA7.0	SA7.0C	7.0	7.78	9.51	10	13.3	37.59	150
SA7.0A	SA7.0CA	7.0	7.78	8.60	10	12.0	41.67	150
SA7.5	SA7.5C	7.5	8.33	10.20	1	14.3	34.97	50
SA7.5A	SA7.5CA	7.5	8.33	9.21	1	12.9	38.76	50
SA8.0	SA8.0C	8.0	8.89	10.90	1	15.0	33.33	25
SA8.0A	SA8.0CA	8.0	8.89	9.83	1	13.6	36.76	25
SA8.5	SA8.5C	8.5	9.44	11.50	1	15.9	31.45	10
SA8.5A	SA8.5CA	8.5	9.44	10.40	1	14.4	34.72	10
SA9.0	SA9.0C	9.0	10.00	12.20	1	16.9	29.59	5
SA9.0A	SA9.0CA	9.0	10.00	11.10	1	15.4	32.47	5
SA10	SA10C	10.0	11.10	13.60	1	18.8	26.60	1
SA10A	SA10CA	10.0	11.10	12.30	1	17.0	29.41	1
SA11	SA11C	11.0	12.20	14.90	1	20.1	24.88	1
SA11A	SA11CA	11.0	12.20	13.50	1	18.2	27.47	1
SA12	SA12C	12.0	13.30	16.30	1	22.0	22.73	1
SA12A	SA12CA	12.0	13.30	14.70	1	19.9	25.13	1
SA13	SA13C	13.0	14.40	17.60	1	23.8	21.01	1
SA13A	SA13CA	13.0	14.40	15.90	1	21.5	23.26	1
SA14	SA14C	14.0	15.60	19.10	1	25.8	19.38	1
SA14A	SA14CA	14.0	15.60	17.20	1	23.2	21.55	1
SA15	SA15C	15.0	16.70	20.40	1	26.9	18.59	1
SA15A	SA15CA	15.0	16.70	18.50	1	24.4	20.49	1
SA16	SA16C	16.0	17.80	21.80	1	28.8	17.36	1
SA16A	SA16CA	16.0	17.80	19.70	1	26.0	19.23	1
SA17	SA17C	17.0	18.90	23.10	1	30.5	16.39	1
SA17A	SA17CA	17.0	18.90	20.90	1	27.6	18.12	1
SA18	SA18C	18.0	20.00	24.40	1	32.2	15.53	1
SA18A	SA18CA	18.0	20.00	22.10	1	29.2	17.12	1
SA20	SA20C	20.0	22.20	27.10	1	35.8	13.97	1
SA20A	SA20CA	20.0	22.20	24.50	1	32.4	15.43	1
SA22	SA22C	22.0	24.40	29.80	1	39.4	12.69	1
SA22A	SA22CA	22.0	24.40	26.90	1	35.5	14.08	1
SA24	SA24C	24.0	26.70	32.60	1	43.0	11.63	1
SA24A	SA24CA	24.0	26.70	29.50	1	38.9	12.85	1
SA26	SA26C	26.0	28.90	35.30	1	46.6	10.73	1
SA26A	SA26CA	26.0	28.90	31.90	1	42.1	11.88	1
SA28	SA28C	28.0	31.10	38.00	1	50.0	10.00	1
SA28A	SA28CA	28.0	31.10	34.40	1	45.4	11.01	1
SA30	SA30C	30.0	33.30	40.70	1	53.5	9.35	1
SA30A	SA30CA	30.0	33.30	36.80	1	48.4	10.33	1
SA33	SA33C	33.0	36.70	44.90	1	59.0	8.47	1
SA33A	SA33CA	33.0	36.70	40.60	1	53.3	9.38	1
SA36	SA36C	36.0	40.00	48.90	1	64.3	7.78	1
SA36A	SA36CA	36.0	40.00	44.20	1	58.1	8.61	1
SA40	SA40C	40.0	44.40	54.30	1	71.4	7.00	1
SA40A	SA40CA	40.0	44.40	49.10	1	64.5	7.75	1
SA43	SA43C	43.0	47.80	58.40	1	76.7	6.52	1
SA43A	SA43CA	43.0	47.80	52.80	1	69.4	7.20	1
SA45	SA45C	45.0	50.00	61.10	1	80.3	6.23	1
SA45A	SA45CA	45.0	50.00	55.30	1	72.7	6.88	1
SA48	SA48C	48.0	53.30	65.10	1	85.5	5.85	1
SA48A	SA48CA	48.0	53.30	58.90	1	77.4	6.46	1
SA51	SA51C	51.0	56.70	69.30	1	91.1	5.49	1
SA51A	SA51CA	51.0	56.70	62.70	1	82.4	6.07	1
SA54	SA54C	54.0	60.00	73.30	1	96.3	5.19	1
SA54A	SA54CA	54.0	60.00	66.30	1	87.1	5.74	1
SA58	SA58C	58.0	64.40	78.70	1	103.0	4.85	1
SA58A	SA58CA	58.0	64.40	71.20	1	93.6	5.34	1

\*For bi-directional devices V<sub>RWM</sub> ≤ 10V, the I<sub>R</sub> limit is double.

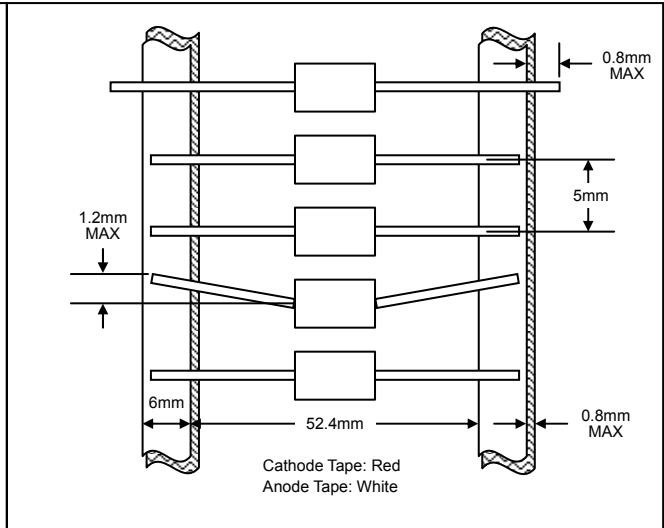
**Electrical Characteristics (@T<sub>A</sub>=25°C unless otherwise specified) Table 1 (Cont'd)**

Uni-Directional Part No.	Bi-Directional Part No.	Reverse Stand-Off Voltage V <sub>RWM</sub> (V)	Breakdown Voltage V <sub>BR</sub> (V) @I <sub>T</sub>		Test Current I <sub>T</sub> (mA)	Maximum Clamping Voltage @I <sub>PP</sub> V <sub>C</sub> (V)	Peak Pulse Current I <sub>PP</sub> (A)	Reverse Leakage* @V <sub>RWM</sub> I <sub>R</sub> (μA)
			Min.	Max.				
SA60	SA60C	60.0	66.70	81.50	1	107.0	4.67	1
SA60A	SA60CA	60.0	66.70	73.70	1	96.8	5.17	1
SA64	SA64C	64.0	71.10	86.90	1	114.0	4.39	1
SA64A	SA64CA	64.0	71.10	78.60	1	103.0	4.85	1
SA70	SA70C	70.0	77.80	95.10	1	125.0	4.00	1
SA70A	SA70CA	70.0	77.80	86.00	1	113.0	4.42	1
SA75	SA75C	75.0	83.30	102.00	1	134.0	3.73	1
SA75A	SA75CA	75.0	83.30	92.10	1	121.0	4.13	1
SA78	SA78C	78.0	86.70	106.00	1	139.0	3.60	1
SA78A	SA78CA	78.0	86.70	95.80	1	126.0	3.97	1
SA85	SA85C	85.0	94.40	115.00	1	151.0	3.31	1
SA85A	SA85CA	85.0	94.40	104.00	1	137.0	3.65	1
SA90	SA90C	90.0	100.00	122.00	1	160.0	3.13	1
SA90A	SA90CA	90.0	100.00	111.00	1	146.0	3.42	1
SA100	SA100C	100.0	111.00	136.00	1	179.0	2.79	1
SA100A	SA100CA	100.0	111.00	123.00	1	162.0	3.09	1
SA110	SA110C	110.0	122.00	149.00	1	196.0	2.55	1
SA110A	SA110CA	110.0	122.00	135.00	1	177.0	2.82	1
SA120	SA120C	120.0	133.00	163.00	1	214.0	2.34	1
SA120A	SA120CA	120.0	133.00	147.00	1	193.0	2.59	1
SA130	SA130C	130.0	144.00	176.00	1	231.0	2.16	1
SA130A	SA130CA	130.0	144.00	159.00	1	209.0	2.39	1
SA150	SA150C	150.0	167.00	204.00	1	268.0	1.87	1
SA150A	SA150CA	150.0	167.00	185.00	1	243.0	2.06	1
SA160	SA160C	160.0	178.00	218.00	1	287.0	1.74	1
SA160A	SA160CA	160.0	178.00	197.00	1	259.0	1.93	1
SA170	SA170C	170.0	189.00	231.00	1	304.0	1.64	1
SA170A	SA170CA	170.0	189.00	209.00	1	275.0	1.82	1
SA180	SA180C	180.0	200.00	244.80	1	322.2	1.55	1
SA180A	SA180CA	180.0	200.00	220.00	1	291.6	1.71	1
SA190	SA190C	190.0	211.00	258.40	1	340.1	1.47	1
SA190A	SA190CA	190.0	211.00	232.00	1	307.8	1.62	1
SA200	SA200C	200.0	220.00	282.00	1	358.0	1.40	1
SA200A	SA200CA	200.0	220.00	256.00	1	324.0	1.54	1
SA210	SA210C	210.0	231.00	296.10	1	376.0	1.33	1
SA210A	SA210CA	210.0	231.00	268.80	1	340.0	1.47	1
SA220	SA220C	220.0	242.00	310.20	1	394.0	1.27	1
SA220A	SA220CA	220.0	242.00	281.60	1	356.0	1.40	1

## MARKING INFORMATION

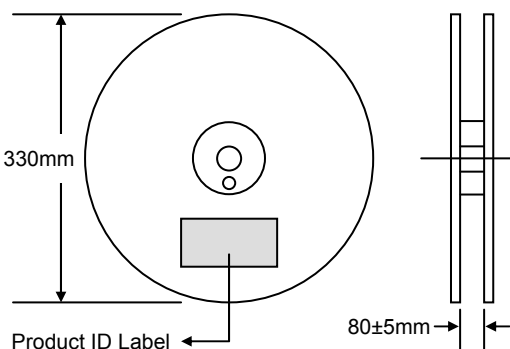


## TAPING SPECIFICATIONS



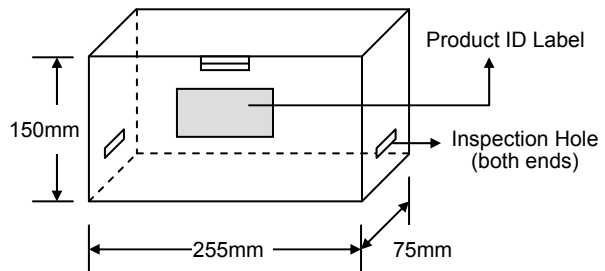
## PACKAGING INFORMATION

### TAPE & REEL



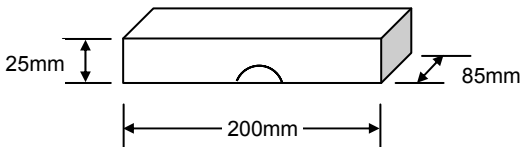
330mm  
Product ID Label  
80±5mm

### TAPE & BOX



150mm  
Product ID Label  
Inspection Hole (both ends)  
255mm  
75mm

### BULK



25mm  
200mm  
85mm


Packaging	Reel Diameter / Box Size (mm)	Quantity (PCS)	Carton Size (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
<b>TAPE &amp; REEL</b>	330	4,000	370 x 370 x 420	20,000	12.0
<b>TAPE &amp; BOX</b>	255 x 75 x 150	3,000	400 x 273 x 415	30,000	15.0
<b>BULK</b>	200 x 85 x 25	1,000	459 x 214 x 256	40,000	17.5

**Note:** 1. Paper reel, white or gray color. Core material: plastic or metal.  
2. Components are packed in accordance with EIA standard RS-296-E.

## ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
SAxx-T3	DO-15	4000/Tape & Reel
<b>SAxx-TB</b>	DO-15	3000/Tape & Box
SAxx	DO-15	1000 Units/Box

1. Products listed in **bold** are WTE **Preferred** Devices.
2. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
3. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, SA5.0-TB-LF.**

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