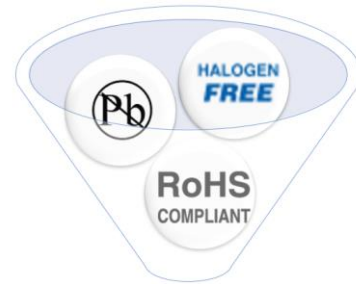


New Bidirectional 3600 W and 6600 W TVS in DO-218AB Package for Automotive Load Dump Protection Applications

Vishay has introduced two new series of transient voltage suppressors (TVS) that offer 3600 W (SM5SXXCAHM3) and 6600 W (SM8SXXCAHM3) peak pulse power capability at 10/1000 μ s in the DO-218AB package.

These bidirectional devices perform over a wide operating temperature range of -55 °C to +175 °C for automotive applications. All part numbers are available in AEC-Q101 qualified versions, which meet ISO 7637-2 and ISO 16750-2 surge specifications (varied by test condition).

Bidirectional Device



Device Specification Table

No	Device Name	Package	Type	V_{RWM} (V)	Maximum Reverse Leakage at V_{WM} I_D (μ A)	Breakdown Voltage V_{BR} at I_T (V)			Maximum V_C at I_{PPM}	
						Min.	Nom.	Max.	10/1000 μ s	
									V_C (V)	I_{PPM} (A)
1	SM5S10CAHM3/I	DO-218AB	AEC-Q101	10	15	11.1	11.7	12.3	17	212
2	SM5S11CAHM3/I			11	10	12.2	12.9	13.5	18.2	198
3	SM5S12CAHM3/I			12	10	13.3	14	14.7	19.9	181
4	SM5S13CAHM3/I			13	10	14.4	15.2	15.9	21.5	167
5	SM5S14CAHM3/I			14	10	15.6	16.4	17.2	23.2	155
6	SM5S15CAHM3/I			15	10	16.7	17.6	18.5	24.4	148
7	SM5S16CAHM3/I			16	10	17.8	18.8	19.7	26	138
8	SM5S17CAHM3/I			17	10	18.9	19.9	20.9	27.6	130
9	SM5S18CAHM3/I			18	10	20	21.1	22.1	29.2	123
10	SM5S20CAHM3/I			20	10	22.2	23.4	24.5	32.4	111
11	SM5S22CAHM3/I			22	10	24.4	25.7	26.9	35.5	101



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12	SM5S24CAHM3/I			24	10	26.7	28.1	29.5	38.9	92.5
13	SM5S26CAHM3/I			26	10	28.9	30.4	31.9	42.1	85.5
14	SM5S28CAHM3/I			28	10	31.1	32.8	34.4	45.4	79.3
15	SM5S30CAHM3/I			30	10	33.3	35.1	36.8	48.4	74.4
16	SM5S33CAHM3/I			33	10	36.7	38.7	40.6	53.3	67.5
17	SM5S36CAHM3/I			36	10	40	42.1	44.2	58.1	62
18	SM5S40CAHM3/I			40	10	44.4	46.8	49.1	64.5	55.8
19	SM5S43CAHM3/I			43	10	47.8	50.3	52.8	69.4	51.9
20	SM5S45CAHM3/I			45	10	50	52.7	55.3	72.7	49.5
21	SM5S48CAHM3/I			48	10	53.3	56.1	58.9	77.4	46.5
22	SM5S51CAHM3/I			51	10	56.7	59.7	62.7	82.4	43.7
23	SM5S54CAHM3/I			54	10	60	63.2	66.3	87.1	41.3
24	SM5S58CAHM3/I			58	10	64.4	67.8	71.2	93.6	38.5
25	SM5S60CAHM3/I			60	10	66.7	70.2	73.7	96.8	37.2
26	SM5S64CAHM3/I			64	10	71.1	74.9	78.6	103	35
27	SM5S70CAHM3/I			70	10	77.8	81.9	86	113	31.9
28	SM5S75CAHM3/I			75	10	83.3	87.7	92.1	121	29.8
29	SM5S78CAHM3/I			78	10	86.7	91.3	95.8	126	28.6
30	SM5S85CAHM3/I			85	10	94.4	99.2	104	137	26.3

No	Device Name	Package	Type	V _{RWM} (V)	Maximum Reverse Leakage at V _{WM} I _D (µA)	Breakdown Voltage V _{BR} at I _T (V)			Maximum V _C at I _{PPM}	
						Min.	Nom.	Max.	10/1000 µs	
									V _C (V)	I _{PPM} (A)
1	SM8S10CAHM3/I	DO-218AB	AEC-Q101	10	15	11.1	11.7	12.3	17	388
2	SM8S11CAHM3/I			11	10	12.2	12.9	13.5	18.2	363
3	SM8S12CAHM3/I			12	10	13.3	14	14.7	19.9	332
4	SM8S13CAHM3/I			13	10	14.4	15.2	15.9	21.5	307
5	SM8S14CAHM3/I			14	10	15.6	16.4	17.2	23.2	284
6	SM8S15CAHM3/I			15	10	16.7	17.6	18.5	24.4	270
7	SM8S16CAHM3/I			16	10	17.8	18.8	19.7	26	254
8	SM8S17CAHM3/I			17	10	18.9	19.9	20.9	27.6	239
9	SM8S18CAHM3/I			18	10	20	21.1	22.1	29.2	226
10	SM8S20CAHM3/I			20	10	22.2	23.4	24.5	32.4	204
11	SM8S22CAHM3/I			22	10	24.4	25.7	26.9	35.5	186
12	SM8S24CAHM3/I			24	10	26.7	28.1	29.5	38.9	170

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13	SM8S26CAHM3/I			26	10	28.9	30.4	31.9	42.1	157
14	SM8S28CAHM3/I			28	10	31.1	32.8	34.4	45.4	145
15	SM8S30CAHM3/I			30	10	33.3	35.1	36.8	48.4	136
16	SM8S33CAHM3/I			33	10	36.7	38.7	40.6	53.3	124
17	SM8S36CAHM3/I			36	10	40	42.1	44.2	58.1	114
18	SM8S40CAHM3/I			40	10	44.4	46.8	49.1	64.5	102
19	SM8S43CAHM3/I			43	10	47.8	50.3	52.8	69.4	95.1
20	SM8S45CAHM3/I			45	10	50	52.7	55.3	72.7	90.8
21	SM8S48CAHM3/I			48	10	53.3	56.1	58.9	77.4	85.3
22	SM8S51CAHM3/I			51	10	56.7	59.7	62.7	82.4	80.1
23	SM8S54CAHM3/I			54	10	60	63.2	66.3	87.1	75.8
24	SM8S58CAHM3/I			58	10	64.4	67.8	71.2	93.6	70.5
25	SM8S60CAHM3/I			60	10	66.7	70.2	73.7	96.8	68.2
26	SM8S64CAHM3/I			64	10	71.1	74.9	78.6	103	64.1
27	SM8S70CAHM3/I			70	10	77.8	81.9	86	113	58.4
28	SM8S75CAHM3/I			75	10	83.3	87.7	92.1	121	54.5
29	SM8S78CAHM3/I			78	10	86.7	91.3	95.8	126	52.4
30	SM8S85CAHM3/I			85	10	94.4	99.2	104	137	48.2

Features

- RoHS-compliant junction passivation
- $T_J = 175\text{ °C}$ capability suitable for high reliability and automotive requirements
- Bidirectional
- 3600 W and 6600 W peak pulse power capability with a 10/1000 μs waveform
- Low leakage current
- High surge capability
- AEC-Q101 qualified
- Meet ISO 7637-2 and ISO 16750-2 surge specifications (varied by test condition)
- Meet MSL level 1, per J-STD-020, LF maximum peak of 245 °C

Applications

- Protect sensitive electronics against voltage transients induced by inductive load switching and lightning, especially during automotive load dump

Samples

- Available at the Vishay Sample Service Center (VSSC)



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