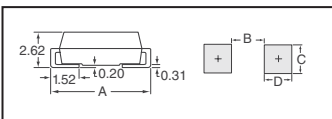


BOURNS® Transient Voltage Suppressor Diode



Bourns offers Transient Voltage Suppressor Diodes for surge and ESD protection applications, in compact chip package DO-214AA (SMB) size format. The Transient Voltage Suppressor series offers a choice of Working Peak Reverse Voltage from 5V up to 170V and Breakdown Voltage up to 200V. Typical fast response times are less than 1.0ns for unidirectional devices and less than 5.0ns for bidirectional devices from 0V to Minimum Breakdown Voltage. Polarity: Cathode band indicates unidirectional device, no cathode band indicates bidirectional device. Unidirectional and bidirectional devices have a 5% tolerance.



Series	Dimensions			
	A	B	C	D
SMAJ	5.59	2.70	2.10	1.27
SMBJ	5.59	2.69	2.10	1.27
SMCJ	8.13	4.69	3.07	1.52
SMLJ	8.13	4.69	3.07	1.52

400 Watt – SMAJ Series

600 Watt – SMBJ Series

1500 Watt – SMCJ Series

3000 Watt – SMLJ Series

(Value) Working Peak Reverse Voltage V _{VRWM} (Volts)	Breakdown Voltage (V _{BR})		Maximum Reverse Leakage @ V _{VRWM} IR(μA)
	Min.	Max.	
5.0	6.40	7.00	800/1600
6.0	6.67	7.37	800/1600
6.5	7.22	7.98	500/1000
7.0	7.78	8.60	200/400
7.5	8.33	9.21	100/200
8.0	8.89	9.83	50/100
8.5	9.44	10.4	10/20
9.0	10.0	11.1	5/10
10	11.1	12.3	5/10
11	12.2	13.2	5.0
12	13.3	14.7	5.0
13	14.4	15.9	5.0
14	15.6	17.2	5.0
15	16.7	18.5	5.0
16	17.8	19.7	5.0
17	18.9	20.9	5.0
18	20.0	22.1	5.0
20	22.2	24.5	5.0
22	24.4	26.9	5.0
24	26.7	29.5	5.0
26	28.9	31.9	5.0
28	31.1	34.4	5.0
30	33.3	36.8	5.0
33	36.7	40.6	5.0
36	40	44.2	5.0
40	44.4	49.1	5.0
43	47.8	52.8	5.0
45	50	55.3	5.0
48	53.3	58.9	5.0
51	56.7	62.7	5.0
54	60	66.3	5.0
58	64.4	71.2	5.0
60	66.7	73.7	5.0
64	71.1	78.6	5.0
70	77.8	86.0	5.0
75	83.3	92.1	5.0
78	86.7	95.8	5.0
85	94.4	104	5.0
90	100	111	5.0
100	111	123	5.0
110	122	135	5.0
120	133	147	5.0
130	144	159	5.0
150	167	185	5.0
160	178	197	5.0
170	189	209	5.0

(Value) Working Peak Reverse Voltage V _{VRWM} (Volts)	Breakdown Voltage (V _{BR})		Maximum Reverse Leakage @ V _{VRWM} IR(μA)
	Min.	Max.	
5.0	6.40	7.25	800
6.0	6.67	7.67	800
6.5	7.22	8.30	500
7.0	7.78	8.95	200
7.5	8.33	9.58	100
8.0	8.89	10.2	50
8.5	9.44	10.8	20
9.0	10.0	11.5	10
10	11.1	12.8	5.0
11	12.2	14.4	5.0
12	13.3	15.3	5.0
13	14.4	16.5	5.0
14	15.6	17.9	5.0
15	16.7	19.2	5.0
16	17.8	20.5	5.0
17	18.9	21.7	5.0
18	20.0	23.3	5.0
20	22.2	25.5	5.0
22	24.4	28.0	5.0
24	26.7	30.7	5.0
26	28.9	32.2	5.0
28	31.1	35.8	5.0
30	33.3	38.3	5.0
33	36.7	42.2	5.0
36	40	46.0	5.0
40	44.4	51.1	5.0
43	47.8	54.9	5.0
45	50	57.5	5.0
48	53.3	61.3	5.0
51	56.7	65.2	5.0
54	60	69	5.0
58	64.4	74.6	5.0
60	66.7	76.7	5.0
64	71.1	81.8	5.0
70	77.8	89.5	5.0
75	83.3	95.8	5.0
78	86.7	99.7	5.0
85	94.4	109	5.0
90	100	116	5.0
100	111	128	5.0
110	122	140	5.0
120	133	153	5.0
130	144	165	5.0
150	167	192	5.0
160	178	205	5.0
170	189	218	5.0

(Value) Working Peak Reverse Voltage V _{VRWM} (Volts)	Breakdown Voltage (V _{BR})		Maximum Reverse Leakage @ V _{VRWM} IR(μA)
	Min.	Max.	
5.0	6.4	7.23	1000
6.0	6.67	7.67	1000
6.5	7.22	8.3	500
7.0	7.78	8.95	200
7.5	8.33	9.58	100
8.0	8.89	10.2	50
8.5	9.44	10.8	20
9.0	10	11.5	10
10	11.1	12.8	5
11	12.2	14.4	5
12	13.3	15.3	5
13	14.4	16.5	5
14	15.6	17.9	5
15	16.7	19.2	5
16	17.8	20.5	5
17	18.9	21.7	5
18	20	23.3	5
20	22.2	25.5	5
22	24.4	28	5
24	26.7	30.7	5
26	28.9	32.2	5
28	31.1	35.8	5
30	33.3	38.3	5
33	36.7	42.2	5
36	40	46	5
40	44.4	51.1	5
43	47.8	54.9	5
45	50	57.5	5
48	53.3	61.3	5
51	56.7	65.2	5
54	60	69	5
58	64.4	74.6	5
60	66.7	76.7	5
64	71.1	81.8	5
70	77.8	89.5	5
75	83.3	95.8	5
78	86.7	99.7	5
85	94.4	108.2	5
90	100	115.5	5
100	111	128	5
110	122	140	5
120	133	153	5
130	144	165	5
150	167	192	5
160	178	205	5
170	189	217.5	5

(Value) Working Peak Reverse Voltage V _{VRWM} (Volts)	Breakdown Voltage (V _{BR})		Maximum Reverse Leakage @ V _{VRWM} IR(μA)
	Min.	Max.	
5.0	6.40	7.82	1000
6.0	6.67	8.15	1000
6.5	7.22	7.98	500
7.0	7.78	8.6	200
7.5	8.33	9.21	100
8.0	8.89	9.83	50
8.5	9.44	10.43	25
9.0	10.00	11.05	10
10	11.10	12.27	5
11	12.20	13.50	5
12	13.30	14.70	5
13	14.40	15.90	5
14	15.60	17.20	5
15	16.70	18.50	5
16	17.80	19.70	5
17	18.90	20.90	5
18	20.00	22.10	5
20	22.20	24.50	5
22	24.40	27.00	5
24	26.70	29.50	5
26	28.90	31.90	5
28	31.10	34.40	5
30	33.30	36.80	5
33	36.70	40.60	5
36	40.00	44.20	5
40	44.40	49.10	5
43	47.80	52.80	5
45	50.00	55.30	5
48	53.30	58.90	5
51	56.70	62.70	5
54	60.00	66.30	5
58	64.40	71.20	5
60	66.70	73.70	5
64	71.10	78.60	5
70	77.80	86.00	5
75	83.30	92.10	5
78	86.70	95.80	5
85	94.40	104.30	5
90	100.00	110.50	5
100	111.00	122.70	5
110	122.00	134.80	5
120	133.00	147.00	5
130	144.00	159.20	5
150	167.00	184.60	5
160	178.00	196.70	5
170	189.00	208.90	5

Series	Watt	Description	Voltage Range (Value)	Digi-Key Part No. †	Price Each		Digi-Key Part No. †	Tape and Reel	
					1	100		Qty.	Pricing
SMAJ	400	Unidirectional	5.0 – 170	SMAJ(Value)ABCT-ND	.27	.15	SMAJ(Value)ABTR-ND	5,000	59.48/M
SMAJ	400	Bidirectional	5.0 – 170	SMAJ(Value)CABCT-ND	.31	.18	SMAJ(Value)CABTR-ND	5,000	70.22/M
SMBJ	600	Unidirectional	5.0 – 170	SMBJ(Value)ABCT-ND	.27	.15	SMBJ(Value)ABTR-ND	3,000	63.61/M
SMBJ	600	Bidirectional	5.0 – 170	SMBJ(Value)CABCT-ND	.31	.18	SMBJ(Value)CABTR-ND	3,000	75.18/M
SMCJ	1,500	Unidirectional	5.0 – 170	SMCJ(Value)ABCT-ND	.54	.32	SMCJ(Value)ABTR-ND	3,000	156.14/M
SMCJ	1,500	Bidirectional	5.0 – 170	SMCJ(Value)CABCT-ND	.59	.35	SMCJ(Value)CABTR-ND	3,000	173.48/M
SMLJ	3,000	Unidirectional	5.0 – 170	SMLJ(Value)ABCT-ND	1.03	.67	SMLJ(Value)ABTR-ND	3,000	363.31/M
SMLJ	3,000	Bidirectional	5.0 – 170	SMLJ(Value)CABCT-ND	1.13	.72	SMLJ(Value)CABTR-ND	3,000	431.23/M

† For complete part number, substitute (Value) from the Series Charts.

PortNote™ Solutions Kits



Bourns offers a variety of PortNote solutions and design kits for Datacom, Audio/Video and Telecom. Each PortNote design kit contains enough Bourns products to build five of the PortNote Solution circuits.

Description	Contents (Five Sets of Each)	Digi-Key Part No.	Price Each	Description	Contents (Five Sets of Each)	Digi-Key Part No.	Price Each
Ethernet – ESD Protection	2 TVS Diode Arrays (CDSOT236-0504C) 1 Quad Transformer (PT61020L)	PN-DESIGNKIT-1-ND	13.88	RJ11 Fax/Modem (FXO)	1 Thyristors (TISP4250T3BJR-S) 1 Telecom Fuse (B2350T) 1 Diode Bridge (CD2320-B1600)	PN-DESIGNKIT-8-ND	13.88
Ethernet – Power Over Ethernet (PoE)	2 TVS Diode Arrays (CDNB08-PLC03-3.3) 2 Rectifier Diode Arrays (CDNB04-B08200) 1 Discrete TVS Diode (SMBJ58A) 1 Multifuse® PTC (MF-SMDFO50)	PN-DESIGNKIT-2-ND	13.88	VDSL – Driver Side Protection	1 GDT (2038-110-SM) 1 Thyristor (TISP4P015L1N) 1 Diode Bridge (CD143A-SR70)	PN-DESIGNKIT-9-ND	13.88
USB 2.0 – ESD and Overcurrent Protections	1 Multifuse PTC (MF-NSMF075) 3 ChipGuard® ESD Suppressors (CG0603MLC-05LE)	PN-DESIGNKIT-3-ND	13.88	ISDN	2 Thyristors (TISP3145T3BJR-S) 4 Multifuse PTCs (MF-RX018/250)	PN-DESIGNKIT-10-ND	13.88
USB 3.0 – ESD and Overcurrent Protection	1 Multifuse PTC (MF-NSMF200) 6 ChipGuard ESD Suppressors (CG0402MLU-05)	PN-DESIGNKIT-4-ND	13.88	HDMI 1.3 – ESD and Overcurrent Protection	2 TVS Diode Arrays (CDDFN10-0524P) 1 TVS Diode Arrays (CDSOT236-0504LC) 1 Multifuse PTC (MF-FSMF020X)	PN-DESIGNKIT-11-ND	13.88
VHF/UHF – Coaxial Port - ESD Protection	1 ChipGuard (CG0402MLU-12) 1 Multilayer Chip Inductor (CS160808-68NK)	PN-DESIGNKIT-5-ND	13.88	HDMI 1.4 – ESD and Overcurrent Protection	9 ChipGuard ESD Suppressors (CG0402MLU-05x) 1 Multifuse PTC (MF-NSMF020)	PN-DESIGNKIT-12-ND	13.88
RJ11 SLIC Protection – ITU-T Dual Supply Voltage	1 Thyristor (TISP9110LDMR-S) 1 PTC (CMF-SDP35A)	PN-DESIGNKIT-6-ND	13.88	T1/E1 – ITU-T	2 Thyristors (TISP7015L1) 2 Fuses (B1250T)	PN-DESIGNKIT-13-ND	13.88
RJ11 SLIC Protection – GR-1089-CORE Dual Supply Voltage	1 Thyristor (TISP200HDMR-S) 1 Thyristor (TISP8201HDMR-S) 2 Telecom Fuses (B1250T)	PN-DESIGNKIT-7-ND	13.88				

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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