

Protection Devices





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Transient Voltage Suppressors (TVS)

200 to 600W
5.0 to 220V



Package dimensions shown are maximum values in mm.







POWER	200W		400W				600W			
CASE	 3.95 x 1.95 x 1.08 SOD-123F		 4.9 x 2.6 x 1.1 SMAFL		 5.59 x 2.92 x 2.62 SMA		 5.59 x 3.81 x 2.44 SMB			
REVERSE STAND-OFF VOLTAGE V_{RWM}	UNI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)	UNI-POLAR	@ I_T (mA)	BI-POLAR	@ I_T (mA)
5.0	CMF5.0A	10	-	-	P4SMA5.0A	1.0	1SMB5.0A	10	1SMB5.0CA	10
6.0	CMF6.0A	10	-	-	P4SMA6.0A	1.0	1SMB6.0A	10	1SMB6.0CA	10
6.5	CMF6.5A	10	-	-	P4SMA6.5A	1.0	1SMB6.5A	10	1SMB6.5CA	10
7.0	CMF7.0A	10	-	-	P4SMA7.0A	1.0	1SMB7.0A	10	1SMB7.0CA	10
7.5	CMF7.5A	1.0	-	-	P4SMA7.5A	1.0	1SMB7.5A	1.0	1SMB7.5CA	1.0
8.0	CMF8.0A	1.0	-	-	P4SMA8.0A	1.0	1SMB8.0A	1.0	1SMB8.0CA	1.0
8.5	CMF8.5A	1.0	C4SMAFL8.5A	1.0	P4SMA8.5A	1.0	1SMB8.5A	1.0	1SMB8.5CA	1.0
9.0	CMF9.0A	1.0	C4SMAFL9.0A	1.0	P4SMA9.0A	1.0	1SMB9.0A	1.0	1SMB9.0CA	1.0
10	CMF10A	1.0	C4SMAFL10A	1.0	P4SMA10A	1.0	1SMB10A	1.0	1SMB10CA	1.0
11	CMF11A	1.0	C4SMAFL11A	1.0	P4SMA11A	1.0	1SMB11A	1.0	1SMB11CA	1.0
12	CMF12A	1.0	C4SMAFL12A	1.0	P4SMA12A	1.0	1SMB12A	1.0	1SMB12CA	1.0
13	CMF13A	1.0	C4SMAFL13A	1.0	P4SMA13A	1.0	1SMB13A	1.0	1SMB13CA	1.0
14	CMF14A	1.0	C4SMAFL14A	1.0	P4SMA14A	1.0	1SMB14A	1.0	1SMB14CA	1.0
15	CMF15A	1.0	C4SMAFL15A	1.0	P4SMA15A	1.0	1SMB15A	1.0	1SMB15CA	1.0
16	CMF16A	1.0	C4SMAFL16A	1.0	P4SMA16A	1.0	1SMB16A	1.0	1SMB16CA	1.0
17	CMF17A	1.0	C4SMAFL17A	1.0	P4SMA17A	1.0	1SMB17A	1.0	1SMB17CA	1.0
18	CMF18A	1.0	C4SMAFL18A	1.0	P4SMA18A	1.0	1SMB18A	1.0	1SMB18CA	1.0
20	CMF20A	1.0	C4SMAFL20A	1.0	P4SMA20A	1.0	1SMB20A	1.0	1SMB20CA	1.0
22	CMF22A	1.0	C4SMAFL22A	1.0	P4SMA22A	1.0	1SMB22A	1.0	1SMB22CA	1.0
24	CMF24A	1.0	C4SMAFL24A	1.0	P4SMA24A	1.0	1SMB24A	1.0	1SMB24CA	1.0
26	CMF26A	1.0	C4SMAFL26A	1.0	P4SMA26A	1.0	1SMB26A	1.0	1SMB26CA	1.0
28	CMF28A	1.0	C4SMAFL28A	1.0	P4SMA28A	1.0	1SMB28A	1.0	1SMB28CA	1.0
30	CMF30A	1.0	C4SMAFL30A	1.0	P4SMA30A	1.0	1SMB30A	1.0	1SMB30CA	1.0
33	CMF33A	1.0	C4SMAFL33A	1.0	P4SMA33A	1.0	1SMB33A	1.0	1SMB33CA	1.0
36	CMF36A	1.0	C4SMAFL36A	1.0	P4SMA36A	1.0	1SMB36A	1.0	1SMB36CA	1.0
40	CMF40A	1.0	C4SMAFL40A	1.0	P4SMA40A	1.0	1SMB40A	1.0	1SMB40CA	1.0
43	CMF43A	1.0	C4SMAFL43A	1.0	P4SMA43A	1.0	1SMB43A	1.0	1SMB43CA	1.0
45	CMF45A	1.0	C4SMAFL45A	1.0	P4SMA45A	1.0	1SMB45A	1.0	1SMB45CA	1.0
48	CMF48A	1.0	C4SMAFL48A	1.0	P4SMA48A	1.0	1SMB48A	1.0	1SMB48CA	1.0
51	CMF51A	1.0	C4SMAFL51A	1.0	P4SMA51A	1.0	1SMB51A	1.0	1SMB51CA	1.0
54	CMF54A	1.0	C4SMAFL54A	1.0	P4SMA54A	1.0	1SMB54A	1.0	1SMB54CA	1.0
58	CMF58A	1.0	C4SMAFL58A	1.0	P4SMA58A	1.0	1SMB58A	1.0	1SMB58CA	1.0
60	CMF60A	1.0	C4SMAFL60A	1.0	P4SMA60A	1.0	1SMB60A	1.0	1SMB60CA	1.0
64	CMF64A	1.0	C4SMAFL64A	1.0	P4SMA64A	1.0	1SMB64A	1.0	1SMB64CA	1.0
70	CMF70A	1.0	C4SMAFL70A	1.0	P4SMA70A	1.0	1SMB70A	1.0	1SMB70CA	1.0
75	CMF75A	1.0	C4SMAFL75A	1.0	P4SMA75A	1.0	1SMB75A	1.0	1SMB75CA	1.0
78	CMF78A	1.0	C4SMAFL78A	1.0	P4SMA78A	1.0	1SMB78A	1.0	1SMB78CA	1.0
85	CMF85A	1.0	C4SMAFL85A	1.0	P4SMA85A	1.0	1SMB85A	1.0	1SMB85CA	1.0
90	CMF90A	1.0	C4SMAFL90A	1.0	P4SMA90A	1.0	1SMB90A	1.0	1SMB90CA	1.0
100	CMF100A	1.0	C4SMAFL100A	1.0	P4SMA100A	1.0	1SMB100A	1.0	1SMB100CA	1.0
110	CMF110A	1.0	C4SMAFL110A	1.0	P4SMA110A	1.0	1SMB110A	1.0	1SMB110CA	1.0
120	CMF120A	1.0	C4SMAFL120A	1.0	P4SMA120A	1.0	1SMB120A	1.0	1SMB120CA	1.0
130	CMF130A	1.0	C4SMAFL130A	1.0	P4SMA130A	1.0	1SMB130A	1.0	1SMB130CA	1.0
150	CMF150A	1.0	C4SMAFL150A	1.0	P4SMA150A	1.0	1SMB150A	1.0	1SMB150CA	1.0
160	CMF160A	1.0	C4SMAFL160A	1.0	P4SMA160A	1.0	1SMB160A	1.0	1SMB160CA	1.0
170	CMF170A	1.0	C4SMAFL170A	1.0	P4SMA170A	1.0	1SMB170A	1.0	1SMB170CA	1.0
180	-	-	-	-	P4SMA180A	1.0	-	-	-	-
190	-	-	-	-	P4SMA190A	1.0	-	-	-	-
200	-	-	-	-	P4SMA200A	1.0	-	-	-	-
210	-	-	-	-	P4SMA210A	1.0	-	-	-	-
220	-	-	-	-	P4SMA220A	1.0	-	-	-	-

Transient Voltage Suppressors (TVS continued)

1500 to 5000W
5.0 to 170V



Package dimensions shown are maximum values in mm.

POWER	1500W				3000W				5000W	
CASE	 8.13 x 6.22 x 2.62 SMC									
REVERSE STAND-OFF VOLTAGE V_{RWM}	UNI-POLAR 	@ I_T (mA)	BI-POLAR 	@ I_T (mA)	UNI-POLAR 	@ I_T (mA)	BI-POLAR 	@ I_T (mA)	UNI-POLAR 	@ I_T (mA)
5.0	1SMC5.0A	10	1SMC5.0CA	10	3SMC5.0A	10	3SMC5.0CA	10	-	-
6.0	1SMC6.0A	10	1SMC6.0CA	10	3SMC6.0A	10	3SMC6.0CA	10	-	-
6.5	1SMC6.5A	10	1SMC6.5CA	10	3SMC6.5A	10	3SMC6.5CA	10	-	-
7.0	1SMC7.0A	10	1SMC7.0CA	10	3SMC7.0A	10	3SMC7.0CA	10	-	-
7.5	1SMC7.5A	1.0	1SMC7.5CA	1.0	3SMC7.5A	1.0	3SMC7.5CA	1.0	-	-
8.0	1SMC8.0A	1.0	1SMC8.0CA	1.0	3SMC8.0A	1.0	3SMC8.0CA	1.0	-	-
8.5	1SMC8.5A	1.0	1SMC8.5CA	1.0	3SMC8.5A	1.0	3SMC8.5CA	1.0	-	-
9.0	1SMC9.0A	1.0	1SMC9.0CA	1.0	3SMC9.0A	1.0	3SMC9.0CA	1.0	-	-
10	1SMC10A	1.0	1SMC10CA	1.0	3SMC10A	1.0	3SMC10CA	1.0	-	-
11	1SMC11A	1.0	1SMC11CA	1.0	3SMC11A	1.0	3SMC11CA	1.0	-	-
12	1SMC12A	1.0	1SMC12CA	1.0	3SMC12A	1.0	3SMC12CA	1.0	-	-
13	1SMC13A	1.0	1SMC13CA	1.0	3SMC13A	1.0	3SMC13CA	1.0	-	-
14	1SMC14A	1.0	1SMC14CA	1.0	3SMC14A	1.0	3SMC14CA	1.0	-	-
15	1SMC15A	1.0	1SMC15CA	1.0	3SMC15A	1.0	3SMC15CA	1.0	-	-
16	1SMC16A	1.0	1SMC16CA	1.0	3SMC16A	1.0	3SMC16CA	1.0	-	-
17	1SMC17A	1.0	1SMC17CA	1.0	3SMC17A	1.0	3SMC17CA	1.0	-	-
18	1SMC18A	1.0	1SMC18CA	1.0	3SMC18A	1.0	3SMC18CA	1.0	-	-
20	1SMC20A	1.0	1SMC20CA	1.0	3SMC20A	1.0	3SMC20CA	1.0	-	-
22	1SMC22A	1.0	1SMC22CA	1.0	3SMC22A	1.0	3SMC22CA	1.0	-	-
24	1SMC24A	1.0	1SMC24CA	1.0	3SMC24A	1.0	3SMC24CA	1.0	-	-
26	1SMC26A	1.0	1SMC26CA	1.0	3SMC26A	1.0	3SMC26CA	1.0	-	-
28	1SMC28A	1.0	1SMC28CA	1.0	3SMC28A	1.0	3SMC28CA	1.0	-	-
30	1SMC30A	1.0	1SMC30CA	1.0	3SMC30A	1.0	3SMC30CA	1.0	-	-
33	1SMC33A	1.0	1SMC33CA	1.0	3SMC33A	1.0	3SMC33CA	1.0	5SMC33A	1.0
36	1SMC36A	1.0	1SMC36CA	1.0	3SMC36A	1.0	3SMC36CA	1.0	5SMC36A	1.0
40	1SMC40A	1.0	1SMC40CA	1.0	3SMC40A	1.0	3SMC40CA	1.0	5SMC40A	1.0
43	1SMC43A	1.0	1SMC43CA	1.0	3SMC43A	1.0	3SMC43CA	1.0	5SMC43A	1.0
45	1SMC45A	1.0	1SMC45CA	1.0	3SMC45A	1.0	3SMC45CA	1.0	5SMC45A	1.0
48	1SMC48A	1.0	1SMC48CA	1.0	3SMC48A	1.0	3SMC48CA	1.0	5SMC48A	1.0
51	1SMC51A	1.0	1SMC51CA	1.0	3SMC51A	1.0	3SMC51CA	1.0	5SMC51A	1.0
54	1SMC54A	1.0	1SMC54CA	1.0	3SMC54A	1.0	3SMC54CA	1.0	5SMC54A	1.0
58	1SMC58A	1.0	1SMC58CA	1.0	3SMC58A	1.0	3SMC58CA	1.0	5SMC58A	1.0
60	1SMC60A	1.0	1SMC60CA	1.0	3SMC60A	1.0	3SMC60CA	1.0	5SMC60A	1.0
64	1SMC64A	1.0	1SMC64CA	1.0	3SMC64A	1.0	3SMC64CA	1.0	5SMC64A	1.0
70	1SMC70A	1.0	1SMC70CA	1.0	3SMC70A	1.0	3SMC70CA	1.0	5SMC70A	1.0
75	1SMC75A	1.0	1SMC75CA	1.0	3SMC75A	1.0	3SMC75CA	1.0	5SMC75A	1.0
78	1SMC78A	1.0	1SMC78CA	1.0	3SMC78A	1.0	3SMC78CA	1.0	5SMC78A	1.0
85	1SMC85A	1.0	1SMC85CA	1.0	3SMC85A	1.0	3SMC85CA	1.0	5SMC85A	1.0
90	1SMC90A	1.0	1SMC90CA	1.0	3SMC90A	1.0	3SMC90CA	1.0	5SMC90A	1.0
100	1SMC100A	1.0	1SMC100CA	1.0	3SMC100A	1.0	3SMC100CA	1.0	5SMC100A	1.0
110	1SMC110A	1.0	1SMC110CA	1.0	3SMC110A	1.0	3SMC110CA	1.0	5SMC110A	1.0
120	1SMC120A	1.0	1SMC120CA	1.0	3SMC120A	1.0	3SMC120CA	1.0	5SMC120A	1.0
130	1SMC130A	1.0	1SMC130CA	1.0	3SMC130A	1.0	3SMC130CA	1.0	5SMC130A	1.0
150	1SMC150A	1.0	1SMC150CA	1.0	3SMC150A	1.0	3SMC150CA	1.0	5SMC150A	1.0
160	1SMC160A	1.0	1SMC160CA	1.0	3SMC160A	1.0	3SMC160CA	1.0	5SMC160A	1.0
170	1SMC170A	1.0	1SMC170CA	1.0	3SMC170A	1.0	3SMC170CA	1.0	5SMC170A	1.0







Transient Voltage Suppressors (TVS continued)

600 to 1500W

6.8 to 250V



Package dimensions shown are maximum values in mm.

POWER	600W				1500W			
CASE	 5.59 x 3.81 x 2.44 SMB				 8.13 x 6.22 x 2.62 SMC			
BREAKDOWN VOLTAGE V _{BR}	UNI-POLAR 	@ I _T (mA)	BI-POLAR 	@ I _T (mA)	UNI-POLAR 	@ I _T (mA)	BI-POLAR 	@ I _T (mA)
6.8	P6SMB6.8A	10	P6SMB6.8CA	10	1.5SMC6.8A	10	1.5SMC6.8CA	10
7.5	P6SMB7.5A	10	P6SMB7.5CA	10	1.5SMC7.5A	10	1.5SMC7.5CA	10
8.2	P6SMB8.2A	10	P6SMB8.2CA	10	1.5SMC8.2A	10	1.5SMC8.2CA	10
9.1	P6SMB9.1A	1.0	P6SMB9.1CA	1.0	1.5SMC9.1A	1.0	1.5SMC9.1CA	1.0
10	P6SMB10A	1.0	P6SMB10CA	1.0	1.5SMC10A	1.0	1.5SMC10CA	1.0
11	P6SMB11A	1.0	P6SMB11CA	1.0	1.5SMC11A	1.0	1.5SMC11CA	1.0
12	P6SMB12A	1.0	P6SMB12CA	1.0	1.5SMC12A	1.0	1.5SMC12CA	1.0
13	P6SMB13A	1.0	P6SMB13CA	1.0	1.5SMC13A	1.0	1.5SMC13CA	1.0
15	P6SMB15A	1.0	P6SMB15CA	1.0	1.5SMC15A	1.0	1.5SMC15CA	1.0
16	P6SMB16A	1.0	P6SMB16CA	1.0	1.5SMC16A	1.0	1.5SMC16CA	1.0
18	P6SMB18A	1.0	P6SMB18CA	1.0	1.5SMC18A	1.0	1.5SMC18CA	1.0
20	P6SMB20A	1.0	P6SMB20CA	1.0	1.5SMC20A	1.0	1.5SMC20CA	1.0
22	P6SMB22A	1.0	P6SMB22CA	1.0	1.5SMC22A	1.0	1.5SMC22CA	1.0
24	P6SMB24A	1.0	P6SMB24CA	1.0	1.5SMC24A	1.0	1.5SMC24CA	1.0
27	P6SMB27A	1.0	P6SMB27CA	1.0	1.5SMC27A	1.0	1.5SMC27CA	1.0
30	P6SMB30A	1.0	P6SMB30CA	1.0	1.5SMC30A	1.0	1.5SMC30CA	1.0
33	P6SMB33A	1.0	P6SMB33CA	1.0	1.5SMC33A	1.0	1.5SMC33CA	1.0
36	P6SMB36A	1.0	P6SMB36CA	1.0	1.5SMC36A	1.0	1.5SMC36CA	1.0
39	P6SMB39A	1.0	P6SMB39CA	1.0	1.5SMC39A	1.0	1.5SMC39CA	1.0
43	P6SMB43A	1.0	P6SMB43CA	1.0	1.5SMC43A	1.0	1.5SMC43CA	1.0
47	P6SMB47A	1.0	P6SMB47CA	1.0	1.5SMC47A	1.0	1.5SMC47CA	1.0
51	P6SMB51A	1.0	P6SMB51CA	1.0	1.5SMC51A	1.0	1.5SMC51CA	1.0
56	P6SMB56A	1.0	P6SMB56CA	1.0	1.5SMC56A	1.0	1.5SMC56CA	1.0
62	P6SMB62A	1.0	P6SMB62CA	1.0	1.5SMC62A	1.0	1.5SMC62CA	1.0
68	P6SMB68A	1.0	P6SMB68CA	1.0	1.5SMC68A	1.0	1.5SMC68CA	1.0
75	P6SMB75A	1.0	P6SMB75CA	1.0	1.5SMC75A	1.0	1.5SMC75CA	1.0
82	P6SMB82A	1.0	P6SMB82CA	1.0	1.5SMC82A	1.0	1.5SMC82CA	1.0
91	P6SMB91A	1.0	P6SMB91CA	1.0	1.5SMC91A	1.0	1.5SMC91CA	1.0
100	P6SMB100A	1.0	P6SMB100CA	1.0	1.5SMC100A	1.0	1.5SMC100CA	1.0
110	P6SMB110A	1.0	P6SMB110CA	1.0	1.5SMC110A	1.0	1.5SMC110CA	1.0
120	P6SMB120A	1.0	P6SMB120CA	1.0	1.5SMC120A	1.0	1.5SMC120CA	1.0
130	P6SMB130A	1.0	P6SMB130CA	1.0	1.5SMC130A	1.0	1.5SMC130CA	1.0
150	P6SMB150A	1.0	P6SMB150CA	1.0	1.5SMC150A	1.0	1.5SMC150CA	1.0
160	P6SMB160A	1.0	P6SMB160CA	1.0	1.5SMC160A	1.0	1.5SMC160CA	1.0
170	P6SMB170A	1.0	P6SMB170CA	1.0	1.5SMC170A	1.0	1.5SMC170CA	1.0
180	P6SMB180A	1.0	P6SMB180CA	1.0	1.5SMC180A	1.0	1.5SMC180CA	1.0
200	P6SMB200A	1.0	P6SMB200CA	1.0	1.5SMC200A	1.0	1.5SMC200CA	1.0
220	P6SMB220A	1.0	P6SMB220CA	1.0	1.5SMC220A	1.0	1.5SMC220CA	1.0
250	P6SMB250A	1.0	P6SMB250CA	1.0				

Package dimensions shown are maximum values in mm.




ESD Transient Voltage Suppressors

12W to 400W
1.5V to 9.0V





Package dimensions shown are maximum values in mm.

Central Part No.	Case Type	Description	*VESD MAX (kV)	Peak Pulse Power 8X20µs PPK (W)	Max. Reverse Stand-Off Voltage VRWM (V)	Breakdown Voltage VBR @ IT		Max. Clamping Voltage 8X20µs VC @ IPP (V)	Max. Peak Pulse Current 8X20µs IPP (A)	Typical Dynamic Resistance (Note 1) RDYN (Ω)	Max. Junction Capacitance 0V DC, 1MHz CJ (pF)	Max. Off-State Capacitance 0V DC, 1MHz CJ (pF)
						MIN (V)	MAX (V)					




Standard

CMATVS3V3		Single	15	80	3.3	5.0	-	11	7.0	0.5	45 (TYP)	-
CMATVS5V0	1.10 x 0.65 x 0.41 SOD-923	Single	15	80	5.0	6.2	-	12.3	7.0	0.5	40 (TYP)	-
CMOTVS5V7		Single	15	66	4.0	5.7	6.7	12	5.5	0.53	35 (TYP)	-
CTLTVS6V2		Single	15	35	4.0	5.8	6.6	10.7	3.0	0.54	25 (TYP)	-

Low Capacitance

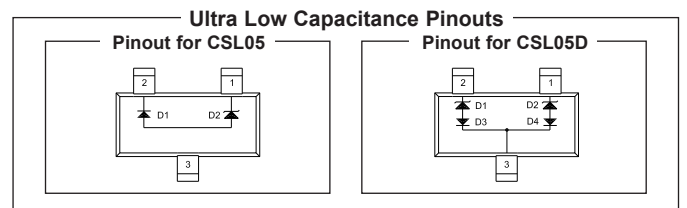
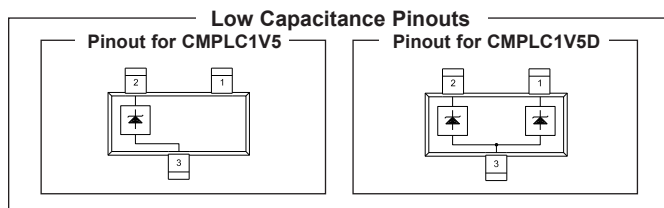
CMPESD24CA		Dual, Bi-directional	20	210	24	25.4	30.3	70	3.0	1.3	9.0 (TYP)	-
CMPLC1V5		Single	>25	50	1.5	-	-	7.0 (@ IPP = 3.0A)	5.0	0.97	-	10
CMPLC1V5D		3.05 x 2.49 x 1.09 SOT-23	Dual	>25	50	1.5	-	-	7.0 (@ IPP = 3.0A)	5.0	0.97	-
CFTVS3V3B		Single, Bi-directional	30	40	3.3	3.5	-	6.5 8.0	1.0 5.0	0.25	10	-
CTLTVS12		Single	30	35	9.0	10	14	18 (@ IPP = 1.8A)	1.8	0.71	-	14
CTLTVS5V0B		Single, Bi-directional	15	30	5.0	5.5	10	12 15	1.0 2.0	0.5	3.5	-

Ultra Low Capacitance

CSL05		Single	>25	400	5.0	-	-	12 (@ IPP = 5.0A)	17	0.57	1.2	-
CSL05D		3.05 x 2.49 x 1.09 SOT-23	Dual	>25	400	5.0	-	-	12 (@ IPP = 5.0A)	17	0.57	1.2
CFTVS5V0BULC		Single, Bi-directional	15	14	5.0	6.0	10	14	1.0	2.94	0.35	-
CFTVS5V0LC		1.05 x 0.65 x 0.4 SOD-882L	Single	15	12	5.0	6.0	-	12	1.0	0.96	0.9
CMO5V0LC		Single	15	12	5.0	6.0	-	12	1.0	0.96	-	0.9


* IEC-61000-4-2 Standard

Note 1: Transmission Line Pulse (TLP) conditions: Z0=50Ω, tp=100ns



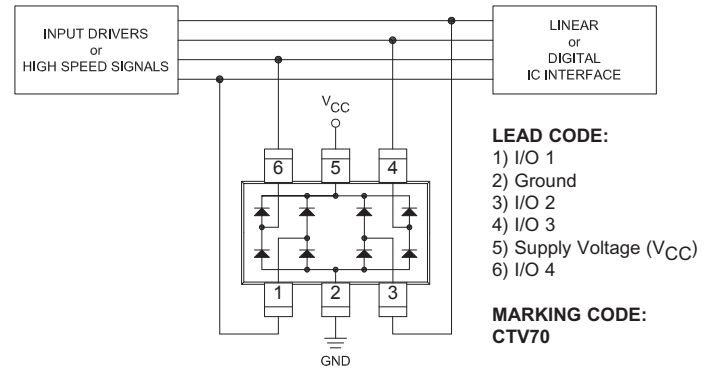
ESD Protection Quad Line Diode Array

ELECTRICAL CHARACTERISTICS PER DIODE: ($T_A=25^\circ\text{C}$)

Central Part No.	Case Type	V_R	V_{ESD}^* (Air)	T_J, T_{stg}	V_F @ I_F			Reverse Leakage Current		Off State Junction Capacitance I/O to GND ($V_R=0, f=1.0\text{MHz}$) C_J	Off State Junction Capacitance I/O to I/O ($V_R=0, f=1.0\text{MHz}$) C_J
		MAX (V)	MAX (kV)	MAX ($^\circ\text{C}$)	TYP (V)	MAX (V)	(mA)	I_R @ V_R	MAX (μA) (V)	MAX (pF)	MAX (pF)
CMXESD70-4	 3.0 x 3.0 x 1.2 SOT-26	70	15	-55 to +150	0.61	0.715	1.0	1.0	70	1.0	0.9
					0.74	0.855	10				
					0.88	1.0	50				
					1.07	1.25	150				



*IEC61000-4-2

Theory of operation: In this configuration, when the transient voltage exceeds the sum of the diode forward voltage drop (V_F), plus the supply voltage (V_{CC}), the diode will direct the surge to the supply, thereby protecting the high speed data line.




TVS/Diode Array

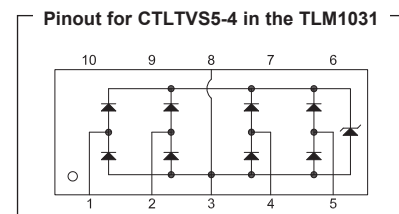
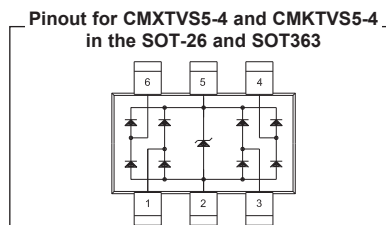
ELECTRICAL CHARACTERISTICS PER DIODE: ($T_A=25^\circ\text{C}$)

Central Part No.	Case Type	V_I	V_{ESD}^* (Air)	Reverse Stand-off Voltage V_{RWM}	Reverse Breakdown Voltage pin 5 to pin 2 V_Z @ I_Z		Reverse Leakage Current pin 5 to pin 2 I_R @ V_{RWM}		Clamping Voltage 8x20 μs I/O to pin 2 V_C @ I_{PP}		Dynamic Resistance (Note 1) R_{DYN}	Off State Junction Capacitance I/O to GND ($V_R=0, f=1.0\text{MHz}$) C_J	Off State Junction Capacitance I/O to I/O ($V_R=0, f=1.0\text{MHz}$) C_J
		MAX (V)	MAX (kV)	MAX (V)	MIN (V)	(mA)	MAX (μA)	(V)	MAX (V)	(A)	TYP (Ω)	MAX (pF)	MAX (pF)
CMXTVS5-4	 3.0 x 3.0 x 1.2 SOT-26	5.5	15	5.0	6.0	1.0	5.0	5.0	12	1.0	0.3	1.2	0.6
CMKTVS5-4	 2.2 x 2.3 x 1.1 SOT-363	5.5	15	5.0	6.0	1.0	3.0	5.0	14 23	1.0 5.0	0.72	3.0	1.5

ELECTRICAL CHARACTERISTICS PER DIODE: ($T_A=25^\circ\text{C}$)


Central Part No.	Case Type	PKK 8x20 μs	V_{ESD}^* (Air)	Reverse Stand-off Voltage V_{RWM}	Reverse Breakdown Voltage I/O to GND V_Z @ 1.0mA		Reverse Leakage Current I/O to GND I_R @ V_R		Clamping Voltage 8x20 μs I/O to GND V_C @ I_{PP}		Dynamic Resistance (Note 1) R_{DYN}	Off State Junction Capacitance I/O to GND ($V_R=0, f=1.0\text{MHz}$) C_J	Off State Junction Capacitance I/O to I/O ($V_R=0, f=1.0\text{MHz}$) C_J
		MAX (W)	MAX (kV)	MAX (V)	MIN (V)	MAX (V)	MAX (μA)	MAX (V)	MAX (V)	MAX (A)	TYP (Ω)	MAX (pF)	MAX (pF)
CTLTVS5-4	 2.55 x 1.05 x 0.55 TLM1031	32.5	15	5.0	6.0	9.0	1.0	5.0	12	1.0	0.5	0.8	0.4
									13	2.5			

Note 1: Transmission Line Pulse (TLP) conditions: $Z_0=50\Omega, t_p=100\text{ns}$



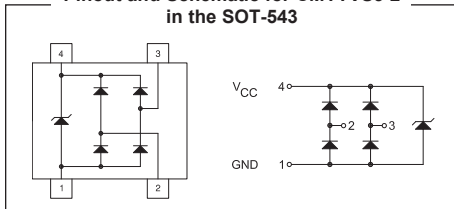
TVS/Diode Array (continued)

ELECTRICAL CHARACTERISTICS PER DIODE: ($T_A=25^\circ\text{C}$)

Central Part No.	Case Type	PPK 8x20 μs	VESD* (Air)	Reverse Stand-off Voltage V_{RWM}	Reverse Breakdown Voltage pin 4 to pin 1 $V_Z @ I_Z$		Reverse Leakage Current pin 4 to pin 1 $I_R @ V_{RWM}$		Clamping Voltage 8x20 μs I/O to pin 1 $V_C @ I_{PP}$		Off State Junction Capacitance I/O to GND ($V_R=0, f=1.0\text{MHz}$) C_J	Off State Junction Capacitance I/O to I/O ($V_R=0, f=1.0\text{MHz}$) C_J
					MAX (W)	MAX (kV)	MAX (V)	MIN (V)	(mA)	MAX (μA)	(V)	MAX (V)
CMYTVS5-2	 1.7 x 1.7 x 0.6 SOT-543	60	15	5.0	6.2	1.0	1.0	5.0	12	5.0	1.2	0.6

*IEC61000-4-2


Pinout and Schematic for CMYTVS5-2 in the SOT-543




TVS/Zener Array

ELECTRICAL CHARACTERISTICS PER DIODE: ($T_A=25^\circ\text{C}$)

Package dimensions shown are maximum values in mm.

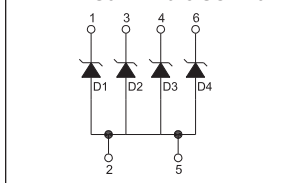
Central Part No.	Case Type	Power (8x20 μs)	Breakdown Voltage $V_{BR} @ 1.0\text{mA}$			Maximum Leakage Current $I_{RWM} @ V_{RWM}$		Maximum Clamping Voltage (10x1000 μs) $V_C @ I_{PP}$		Maximum Clamping Voltage (8x20 μs) $V_C @ I_{PP}$		Dynamic Resistance (Note 1) R_{DYN}	Maximum Capacitance @ 0V Bias	Maximum Capacitance @ 2.8V Bias	Maximum Impedance $Z_{ZT} @ 1.0\text{mA}$
			PPK (W)	MIN (V)	NOM (V)	MAX (V)	(μA)	(V)	(V)	(A)	(V)	(A)	TYP (Ω)	(pF)	(pF)
CMXTVS5V6	 3.0 x 3.0 x 1.2 SOT-26	150	5.32	5.6	5.88	2.0	3.0	8.0	3.0	12	12.5	0.29	275	160	400
CMXTVS6V2			5.89	6.2	6.51	0.7	4.3	9.0	2.66	12.5	12	0.36	260	150	300

ELECTRICAL CHARACTERISTICS PER DIODE: ($T_A=25^\circ\text{C}$)

Central Part No.	Case Type	Power	Breakdown Voltage $V_{BR} @ I_R$				Maximum Leakage Current $I_{RWM} @ V_{RWM}$		Maximum Clamping Voltage $V_C @ I_{PP}$		Dynamic Resistance (Note 1) R_{DYN}	Capacitance @ 0V Bias	Capacitance @ 3V Bias	Capacitance @ 3.3V Bias
			PPK (W)	MIN (V)	NOM (V)	MAX (V)	(mA)	(μA)	(V)	(V)	(A)	TYP (Ω)	(pF)	(pF)
CMNTVS5V0	 1.05 x 1.05 x 0.5 SOT-953	25	6.0	7.1	8.0	1.0	0.25	5.0	12.5	2.0	1.45	10	-	5.5
CMNTVS12V		18	11.4	12.0	12.7	5.0	0.5	9.0	18	1.0	2.56	10	6.0	-

Note 1: Transmission Line Pulse (TLP) conditions: $Z_0=50\Omega, t_p=100\text{ns}$

Pinout for CMXTVS5V6 and CMXTVS6V2 in the SOT-26



Pinout for CMNTVS5V0 and CMNTVS12V in the SOT-953

