

Overvoltage Transient Suppressors

Metal Oxide Varistors (MOV)



ECG Type	Maximum Voltage			Nominal Varistor Voltage V _{NOM} Volts	Energy W _{TM} (Joules)	Peak Current I _{TM} (Amps)	Transient Power Dissipation P _D (Watts)	Figure No.
	RMS V _{ACM} (Volts)	DC V _{DCM} (Volts)	Clamping V _{CL} (Volts)					
ECG1V010	10	14	42	18	.8	250	.25	S11-1
ECG2V010	10	14	39	18	3.5	1000	.6	S11-2
ECG1V014	14	18	47	22	.9	250	.25	S11-1
ECG2V014	14	18	43	22	4.0	1000	.6	S11-2
ECG1V015	15	20	52	24	1.0	250	.25	S11-1
ECG2V015	15	20	48	24	4.5	1000	.6	S11-2
ECG1V017	17	22	57	27	1.0	250	.25	S11-1
ECG2V017	17	22	53	27	5.0	1000	.6	S11-2
ECG1V020	20	26	68	33	1.2	250	.25	S11-1
ECG2V020	20	26	64	33	6.0	1000	.6	S11-2
ECG1V025	25	30	77	39	1.5	250	.25	S11-1
ECG2V025	25	30	77	39	10.0	1000	.6	S11-2
ECG1V030	30	.37	93	47	1.8	250	.25	S11-1
ECG2V030	30	37	93	47	10.0	1000	.6	S11-2
ECG1V035	35	45	107	56	2.2	250	.25	S11-1
ECG2V035	35	45	103	56	10.0	1000	.6	S11-2
ECG1V040	40	55	135	68	2.5	250	.25	S11-1
ECG2V040	40	55	135	68	12.0	1000	.6	S11-2
ECG1V050	50	66	152	82	3.0	250	.25	S11-1
ECG2V050	50	66	147	82	14.0	1000	.6	S11-2
ECG1V060	60	85	165	100	4.0	1200	.25	S11-1
ECG2V060	60	85	165	100	20.0	4500	.6	S11-2
ECG1V075	75	100	195	120	5.0	1200	.25	S11-1
ECG2V075	75	100	195	120	20.0	4500	.6	S11-2
ECG1V095	95	125	245	150	6.0	1200	.25	S11-1
ECG2V095	95	125	245	150	25.0	4500	.6	S11-2
ECG1V115	115	153	295	171	9.0	1200	.25	S11-1
ECG2V115	115	153	300	171	30.0	4500	.6	S11-2
ECG1V130	130	175	340	208	10.0	1200	.25	S11-1
ECG2V130	130	175	340	208	35	4500	.6	S11-2
ECG524V13	130	175	340	208	70	6500	1.0	S11
ECG8V140	140	180	360	220	80	8000	.8	S20
ECG25V140	140	180	360	220	200	25000	1.2	S20-1
ECG1V150	150	200	395	240	11	1200	.25	S11-1
ECG2V150	150	200	395	240	40	4500	.6	S11-2
ECG8V150	150	200	395	240	95	8000	.8	S20
ECG25V150	150	200	395	240	240	25000	1.2	S20-1
ECG524V15	150	200	395	240	80	6500	1.0	S11
ECG1V175	175	225	440	270	12	1200	.2	S11-1
ECG8V175	175	225	445	270	100	8000	.8	S20
ECG25V175	175	225	445	270	260	25000	1.2	S20-1
ECG524V17	175	225	440	270	90	6500	1.0	S11
ECG1V250	250	330	650	390	17	1200	.25	S11-1
ECG2V250	250	330	650	390	70	4500	.6	S11-2
ECG8V250	250	320	650	390	130	8000	.8	S20
ECG25V250	250	320	650	390	350	25000	1.2	S20-1
ECG524V25	250	320	650	390	130	6500	1.0	S11
ECG1V275	275	350	700	430	20.0	1200	.25	S11-1
ECG2V275	275	350	700	430	75.0	4500	.6	S11-2
ECG8V275	275	350	710	430	140	8000	.8	S20
ECG25V275	275	350	710	430	400	25000	1.2	S20-1
ECG524V27	275	350	700	430	140	6500	1.0	S11
ECG1V300	300	385	765	470	20.0	1200	.25	S11-1
ECG2V300	300	385	765	470	80.0	4500	.6	S11-2
ECG524V30	300	385	765	470	150	6500	1.0	S11
ECG8V315	315	420	840	510	160	8000	.8	S20
ECG25V315	315	420	840	510	420	25000	1.2	S20-1

Metal Oxide Varistors (MOV) (cont'd)

ECG Type	Maximum Voltage			Nominal Varistor Voltage V _{NOM} (Volts)	Energy W _{TM} (Joules)	Peak Current I _{TM} (Amps)	Transient Power Dissipation P _D (Watts)	Figure No.
	RMS V _{ACM} (Volts)	DC V _{DCM} (Volts)	Clamping V _{CL} (Volts)					
ECG2V420	420	560	1110	680	90.0	4500	.6	S11-2
ECG8V420	420	560	1120	680	175	8000	.8	S20
ECG25V420	420	560	1120	680	450	25000	1.2	S20-1
ECG524V42	420	560	1110	680	160	6500	1.0	S11
ECG8V460	460	615	1240	750	190	8000	.8	S20
ECG25V460	460	615	1240	750	500	25000	1.2	S20-1
ECG2V480	480	640	1240	750	105	4500	.6	S11-2
ECG524V48	480	640	1240	750	180	6500	1.0	S11
ECG8V510	510	670	1355	820	215	8000	.8	S20
ECG25V510	510	670	1355	820	545	25000	1.2	S20-1

Overvoltage Transient Suppressors (Surge Clamping Diodes) Unidirectional (DC) 1500 Watts

ECG Type	Application	Reverse Standoff Voltage V _R (Volts)	Breakdown Voltage		Maximum Ratings			Peak Pulse Power (1 msec) PP (Watts)	Fig. No.
					Clamping Voltage V _C (Volts)				
			V _{BR} (Volts)	@ I _T (mA)	@ I _{pp} = 120 A	@ I _{pp} = 60 A	@ I _{pp} = 30 A		
ECG4900	Designed to Protect 5.0V, TTL, DTL and MOS Circuitry	5.0	6.0	1.0	8.5	8.0	7.6	1500	S14

ECG Type	Reverse Standoff Voltage VR (Volts)	Breakdown Voltage				Peak Pulse Current Ipp (Amps)	Maximum Ratings		Peak Pulse Power (1 msec) PP (Watts)	Fig. No.
		VBR (Volts)			@ IT (mA)		Clamping Voltage @ Ipp Vc (Volts)	Temperature Coefficient of VBR (%°C)		
		Min.	Nom.	Max.						
ECG4902	5.80	6.45	6.8	7.14	10	143	10.5	.057	1500	S14
ECG4904	6.40	7.13	7.5	7.88	10	132	11.3	.061	1500	
ECG4906	7.02	7.79	8.2	8.61	10	124	12.1	.065	1500	
ECG4910	8.55	9.5	10.0	10.5	1.0	103	14.5	.073	1500	
ECG4914	10.20	11.4	12.0	12.6	1.0	90.0	16.7	.078	1500	
ECG4918	11.10	12.4	13.0	13.7	1.0	82.0	18.2	.081	1500	
ECG4920	12.80	14.3	15.0	15.8	1.0	71.0	21.2	.084	1500	
ECG4922	13.60	15.2	16.0	16.8	1.0	67.0	22.5	.086	1500	
ECG4926	15.30	17.1	18.0	18.9	1.0	59.5	25.2	.088	1500	
ECG4928	17.10	19.0	20.0	21.0	1.0	54.0	27.7	.090	1500	
ECG4932	20.50	22.8	24.0	25.2	1.0	45.0	33.2	.094	1500	
ECG4934	23.10	25.7	27.0	28.4	1.0	40.0	37.5	.096	1500	
ECG4936	25.60	28.5	30.0	31.5	1.0	36.0	41.5	.097	1500	
ECG4938	28.20	31.4	33.0	34.7	1.0	33.0	45.7	.098	1500	
ECG4940	30.80	34.2	36.0	37.8	1.0	30.0	49.9	.099	1500	
ECG4942	33.30	37.1	39.0	41.0	1.0	28	53.9	.100	1500	
ECG4944	36.80	40.9	43.0	45.2	1.0	25.3	59.3	.101	1500	
ECG4946	40.20	42.3	47.0	51.7	1.0	23.2	64.8	.101	1500	
ECG4950	43.60	48.5	51.0	53.6	1.0	21.4	70.1	.102	1500	
ECG4952	47.80	53.2	56.0	58.8	1.0	19.5	77.0	.103	1500	
ECG4954	53.0	58.9	62.0	65.1	1.0	17.7	85.0	.104	1500	
ECG4958	58.10	64.6	68	71.4	1.0	16.3	92.0	.104	1500	
ECG4960	64.10	71.3	75.0	78.8	1.0	14.6	103.0	.105	1500	
ECG4962	70.10	77.9	82.0	86.1	1.0	13.3	113.0	.105	1500	
ECG4964	77.80	86.5	91.0	95.5	1.0	12.0	125.0	.106	1500	
ECG4966	85.50	95.0	100.0	105.0	1.0	11.0	137.0	.106	1500	
ECG4968	94.0	105.0	110.0	116.0	1.0	9.9	152.0	.106	1500	
ECG4970	102.0	114.0	120.0	126.0	1.0	9.1	165.0	.107	1500	
ECG4972	111.0	124.0	130.0	137.0	1.0	8.4	179.0	.107	1500	

1500 Watts (cont'd)

ECG Type	Reverse Standoff Voltage VR (Volts)	Breakdown Voltage				Peak Pulse Current Ipp (Amps)	Maximum Ratings		Peak Pulse Power (1 msec) PP (Watts)	Fig. No.
		VBR (Volts)			@ IT (mA)		Clamping Voltage @ Ipp Vc (Volts)	Temperature Coefficient of VBR (%/°C)		
		Min.	Nom.	Max.						
ECG4974	128.0	143.0	150.0	158.0	1.0	7.2	207.0	.108	1500	S14
ECG4976	136.0	152.0	160.0	168.0	1.0	6.8	219.0	.108	1500	
ECG4978	145.0	162.0	170.0	179.0	1.0	6.4	234.0	.108	1500	
ECG4980	154.0	171.0	180.0	189.0	1.0	6.1	246.0	.108	1500	
ECG4982	185.0	209.0	220.0	231.0	1.0	4.6	328.0	.108	1500	
ECG4984	214.0	237.0	250.0	263.0	1.0	5.0	344.0	.110	1500	
ECG4988	171.0	190.0	200.0	210.0	1.0	5.5	274.0	.108	1500	
ECG4990	256.0	285.0	300.0	315.0	1.0	5.0	414.0	.110	1500	
ECG4992	273.0	304.0	320.0	336.0	1.0	4.5	438.0	.110	1500	
ECG4994	300.0	332.0	350.0	368.0	1.0	4.0	482.0	.110	1500	
ECG4996	342.0	380.0	400.0	420.0	1.0	4.0	548.0	.110	1500	
ECG4998	376.0	418.0	440.0	462.0	1.0	3.5	603.0	.110	1500	

5000 Watts

ECG Type	Reverse Standoff Voltage VR (Volts)	Breakdown Voltage				Peak Pulse Current Ipp (Amps)	Maximum Ratings		Peak Pulse Power (1 msec) PP (Watts)	Fig. No.
		VBR (Volts)			@ IT (mA)		Clamping Voltage @ Ipp Vc (Volts)	Temperature Coefficient of VBR (%/°C)		
		Min.	Nom.	Max.						
ECG4828	15.0	15.0	16.7	18.5	5.0	206.0	24.4	.094	5000	S14-2
ECG4840	24.0	24.0	26.7	29.5	5.0	128.0	38.9	.101	5000	
ECG4846	30.0	30.0	33.3	36.8	5.0	103.0	48.4	.103	5000	
ECG4848	33.0	33.0	36.7	40.6	5.0	94.0	53.3	.104	5000	
ECG4850	36.0	36.0	40.0	44.2	5.0	85.0	58.1	.104	5000	
ECG4858	48.0	48.0	53.3	58.9	5.0	65.0	77.4	.106	5000	
ECG4868	64.0	64.0	71.1	78.6	5.0	49.0	103.0	.108	5000	

15000 Watts

ECG Type	Reverse Standoff Voltage VR (Volts)	Breakdown Voltage			Peak Pulse Current Ipp (Amps)	Maximum Ratings		Peak Pulse Power (1 msec) PP (Watts)	Fig. No.
		VBR (Volts)		@ IT (mA)		Clamping Voltage @ Ipp Vc (Volts)	Temperature Coefficient of VBR (mV/°C)		
		Min.	Max.						
ECG4702	18.0	20.0	22.1	50.0	485.0	30.9	18.0	15000	S14-1
ECG4714	30.0	33.3	36.8	5.0	296.0	50.7	34.0	15000	
ECG4744	85.0	94.4	104.0	5.0	109.0	137.0	102.0	15000	

Note: A Surge Clamping Diode is normally selected according to the reverse "Stand Off Voltage" (VR) which should be equal to or greater than the DC or continuous peak operating level. Typical response time equals 1 pico second.