VCR

ESD-SMD MULTILAYER CHIP VARISTOR

0603-3220 Series

Applications

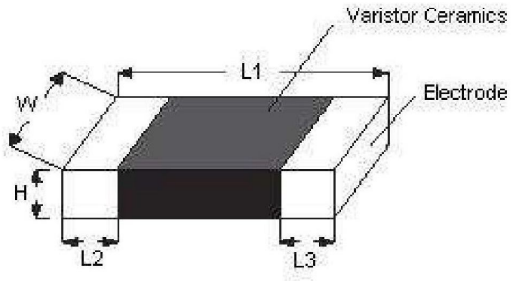
1. CMOS and MOSFET protection from ESD
2. Computer ESD and I/O protection
3. Telecommunication transient protection
   - USD 2.0 port, IEEE-1394, RF module, antenna circuit , high speed protocol etc.

Features

1. Excellent ESD clamping & small insertion loss
2. High transient current capability, fastest response time
3. Capacitance is designed to ultra-low value, which can be efficiently suitable to high speed data line.
4. EU-RoHS Compliance

How to Order:

MVR	0603	–	3R3	G
Series Name	CHIP SIZE 0603 0805 1206 1210 1812 2220 3220		Varistor Breakdown Voltage 3R3→ 3.3VDC 5R0→ 5VDC 270→ 27VDC 471→ 470VDC	General absorption, low clamping voltage



Size: mm

SIZE	L1	W	H	L2 & L3
0603	1.60±0.15	0.80±0.15	0.95	0.35±0.15
0805	2.00±0.15	1.25±0.20	1.20	0.40±0.20
1206	3.20±0.30	1.60±0.20	1.50	0.50±0.20
1210	3.20±0.30	2.50±0.25	1.50	0.50±0.20
1812	4.50±0.40	3.20±0.30	1.50	0.60±0.30
2220	5.70±0.40	5.00±0.30	2.00	0.60±0.30
3220	8.10±0.30	5.00±0.30	3.00	0.80±0.30

Email: f2223834@ms35.hinet.net

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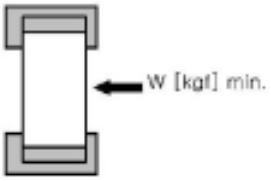
Electrical Characteristics (@TA=25℃ Unless Otherwise Noted)

Size								P/N	Working Voltage		Breakdown Voltage		Peak Current	Clamping Voltage	
									AC	DC	@1mA DC		8/20us	8/20us	
									Vrms	VDC	VB		Ip(Max)	VC	A
0402	0603							MVR****-5R0G	2.4	3.3	5	4.0-6.0		12	1
		0805						MVR****-8R0G	4	5.5	8	6.6-9.9		14	1
								MVR****-120G	7	9	12	10-15.5	0603	24	1
			1206	1210				MVR****-180G	11	14	18	15-20.5	10A-30A	30	1-10
								MVR****-210G	12	16	21	17-24		35	1-10
						2220		MVR****-240G	14	18	24	22-27		38	1-10
					1812		3220	MVR****-270G	17	22	27	24-30		42	1-10
								MVR****-300G	19	24	30	27-33	0805	47	1-10
								MVR****-330G	20	26	33	29-36	60A-100A	54	1-10
								MVR****-370G	21	27	37	33-40.5		60	1-10
								MVR****-390G	24	30	39	35-42		65	1-10
								MVR****-470G	28	36	47	42.52.5	1206	77	1-10
								MVR****-530G	30	42	53	47-58.5	80A-150A	85	1-10
								MVR****-560G	35	45	56	51-62		90	1-10
								MVR****-600G	36	47	60	53-66		98	1-10
								MVR****-680G	40	56	68	61-75	1210	110	1-10
								MVR****-760G	45	60	76	68-84	250A-500A	120	1-10
								MVR****-820G	50	65	82	74-92		135	1-10
								MVR****-900G	52	68	90	80-100		150	1-10
								MVR****-101G	60	85	100	90-110	1812	165	2.5-10
								MVR****-121G	75	100	120	108-132	400A-800A	200	2.5-10
								MVR****-151G	95	125	150	135-165		250	2.5-10
								MVR****-181G	115	150	180	162-198		300	5-10
								MVR****-201G	130	170	205	184-225	2220	340	5-10
								MVR****-221G	140	180	220	198-242	1000A-2000A	360	5-10
								MVR****-241G	150	200	240	216-264		395	5-10
								MVR****-271G	175	225	270	243-297		455	5-10
								MVR****-361G	230	300	360	324-396	3220	595	5-10
								MVR****-391G	250	320	390	351-429	500A-800A	650	5-10
								MVR****-431G	275	350	430	387-473		710	5-10
								MVR****-471G	300	385	470	423-517		775	5-10

Electrical Rating

NO	ITEM	Requirements	Test Method
1	Operation Range	-40℃ - 85℃	
2	Leakage Current	Satisfaction to the specification, under 1uA	Applied voltage: specified working woltage
3	Capacitance	Satisfaction to the specification ,under 1pF	Frequency & OSC level: 1MHz, 1.0 Vrms
4	Solderability	More than 90% of the terminal electrode shall be covered with new solder	1. Type of solder: H63A 2. Soldering Temp & Time: 230 ± 5℃, 5±1 sec
5	Reflow soldering	1. No serious mechanical damage 2. More than 50% of the terminal electrode shall be covered with new solder 3. Leakage current: ≦ 10uA	1. Type of solder: H63A 2. Temp &Time: Max 260±5℃, min 10 sec
6	Humidity Load Test	1. No Serious mechanical damage 2. Leakage Current: ≦ 10uA	Test Temp. & relative humidity & Time: 85±5℃ RH, Vw applied, 500±12hrs
7	Thermal Shock		1. Step 1: -40 ±5℃, Step 2: 85 ±5℃ 2. Cycle: 30min ±3min, each 5 cycles
8	High Temp. Test		Temp. & time: 85 ±5℃, 1000± 24hrs
9	Adhesive strength	No serious mechanical damage under condition of 1005: min 0.5kgf, 1608: min 1.0kgf	
10	ESD	1. No mechanical damage after test 2. Leakage Current: ≦ 10uA * ESD gun(IE61000-4-2 standard) * C=150pF R=330Ω	1. Contact discharge * Voltage: ±8KV(Level 4) * Number: 10 times in 10 sec 2. Air discharge * Voltage: ±15KV(Level 4) * Number: 10 times in 10 sec