

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

Applications

1. CMOS and MOSFET protection from ESD
 2. Computer ESD and I/O protection
 3. Telecommunication transient protection
- USB2.0 port, IEEE-1394, RF module, Antenna circuit, high speed Protocol Etc.

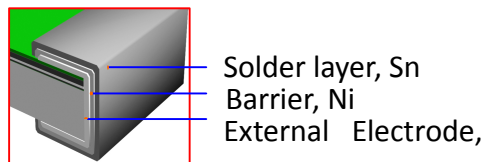
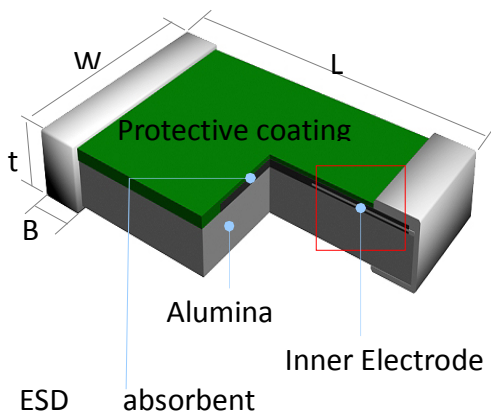
PART NO. MV0603E240C0R2T

Standards

MV 0603 E 240 C 0R2 T
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① production series: ESD/Varistor
- ② size: 0402=1005, 0603=1608
- ③ type: G: general ; E: ESD ; H: high energy
- ④ working voltage (DC): 5R0=5V, 140=14V, 180=18V, 240=24V, 260=26V
- ⑤ Capacitance
- ⑥ typical capacitance value measured : X: 无容值要求;
 0R15=0.15PF, 0R2=0.2PF, 0R5=0.5PF, 3R0=3PF , 361=360pf, 801=800PF
- ⑦ package: T: taping B: bulk

Shape & Dimension



unit : mm

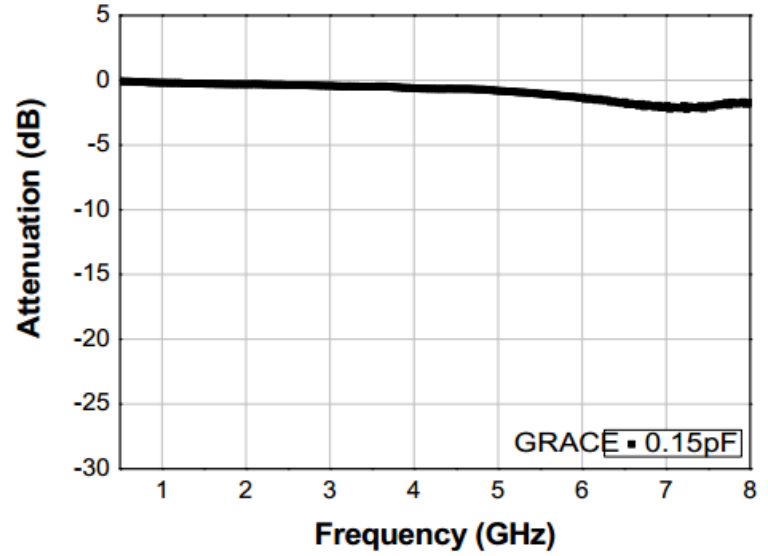
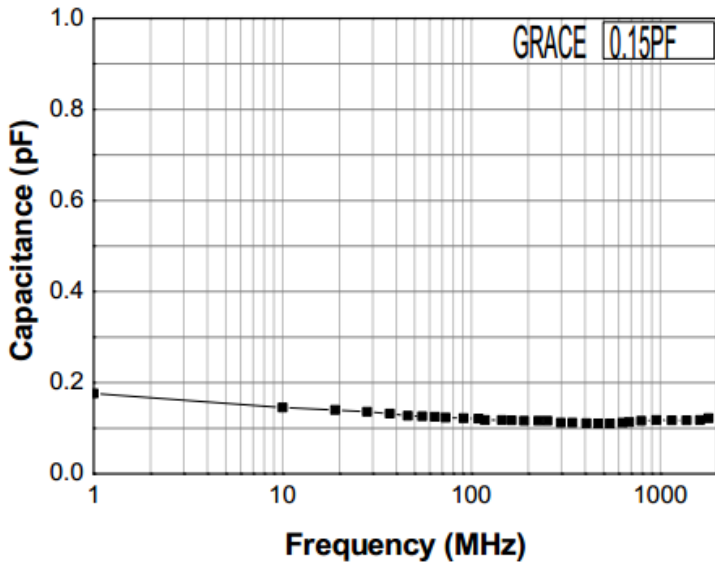
SIZE	L	W	t	B
1608	1.6±0.2	0.8±0.2	0.55±0.1	0.4±0.2

Specifications

Part No.	Cp @1MHz, 1Vrms		Working Voltage, Vw	Clamping voltage	Leakage Current ¹	ESD	
	Typical	Maximum	Typical			Capability	Trigger Voltage ²
MV0603E240C0R2T	0.2pF	0.35pF	24Vdc	45V	< 1uA	IEC61000-4-2 Level 4	300V

1. Leakage current at Max. working Voltage
 2. Max. voltage which is controlled by LopiVa when ESD pulse of 8kV is applied.

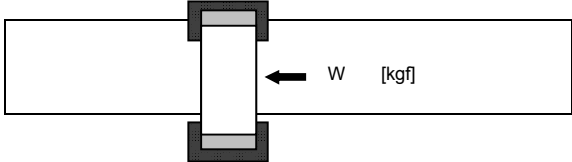
■ Frequency properties ; Cp, Insertion Loss



■ ESD suppressor effect

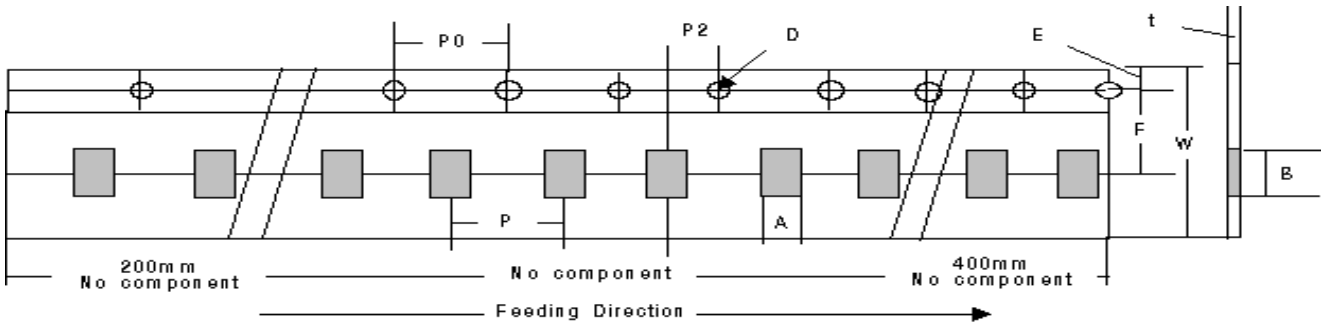
<p>Wave form</p> <p>[IEC61000-4-2 Contact 8kV]</p>	
<p>Test method</p>	<p>ESD Generator [ESS-2000] Attenuator : 60dB [P6015A] Oscilloscope [TDS3034B]</p> <p>DUT GND</p> <p>· Above wave form and suppression peak value may be differently shown as the applied test circuit</p>

Performance specifications

No	Item	Requirements	Test method
1	Operation Range	1. -40°C ~ 85°C	
2	Leakage current	1. Satisfaction to the specification, under 1uA	1. Applied voltage : specified working voltage
3	Capacitance	1. Satisfaction to the specification, under 1pF	1. Frquency & OSC level : 1MHz, 1.0Vrms
4	Solderability	1. More than 90% of the terminal electrode shall be covered with new solder.	1. Type of solder : H63A 2. Soldering Temp & Time : 230+/-5°C, 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°C, min 10sec * Refer to the soldering profile of page 6
6	Humidity Load Test	1. No Serious mechanical damage 2. Leakage Current : ≤ 10uA	1. Test Temp. & Relative Humidity & Time : 85+/-5°C, 85 +/- 5% RH, Vw Applied, 500 +/- 12hrs
7	Thermal Shock		1. Step 1 : -40 +/- 5°C, Step 2 : 85 +/- 5°C 2. Cycle : 30min ± 3min, each 5 cycles
8	High Temp. Test		1. Temp. & time : 85+/-5°C , 1000 +/- 24hrs
9	Adhesive strength	1. 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 (IEC61000-4-2 standard) * C=150pF R=330Ω	1. Contact discharge * Voltage : +/-8kV(Level 4) * Number : 10 times in 10sec
			2. Air discharge * Voltage : +/-15kV(Level 4) * Number : 10 times in 10sec

■ Packing specifications

1. Carrier tape



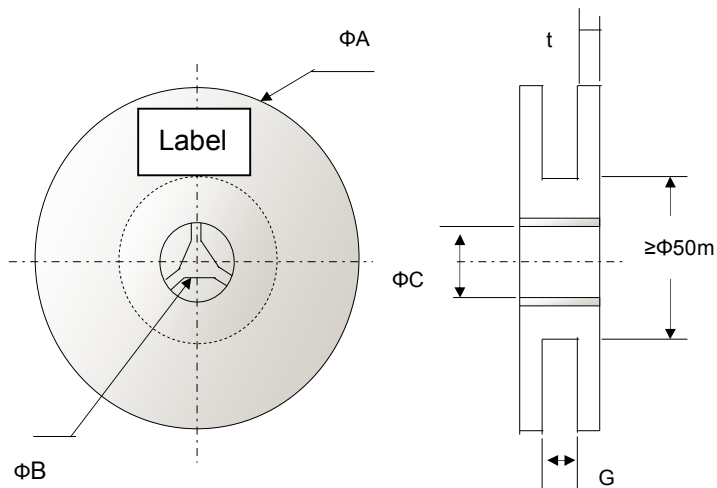
unit :mm

Size	A	B	W	D	E	F	P	P0	P2	t
0402=1005	0.65+/-0.10	1.15+/-0.10	8.00+/-0.20	1.50+/-0.25	1.75+/-0.10	3.50+/-0.50	2.0+/-0.1	4.0+/-0.10	2.0+/-0.10	1.1max
0603=1608	1.10+/-0.10	1.90+/-0.10					4.0+/-0.1			

* paper type

2. Reel & Label

[Plastic Reel]

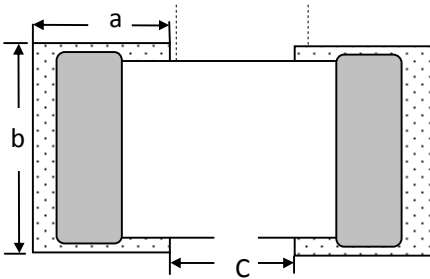


unit :
mm

code	dimension
ΦA	178+/-2.0
ΦB	13.0+/-0.5
ΦC	22.0+/-2.0
G	10.0+/-1.5
t	2.5+/-0.5

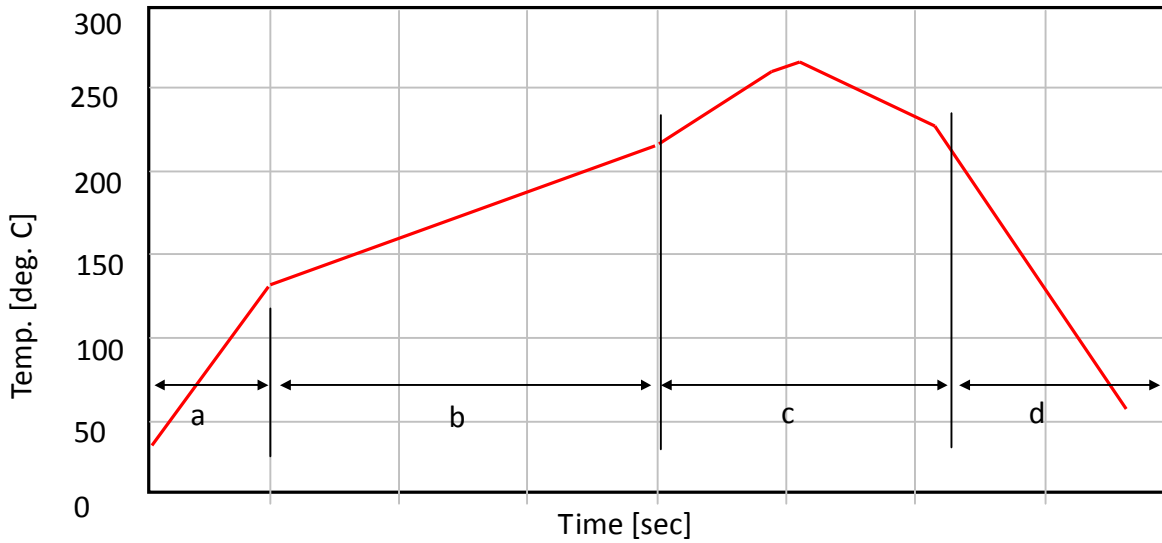
Recommended Soldering condition

1) Land Pattern Design



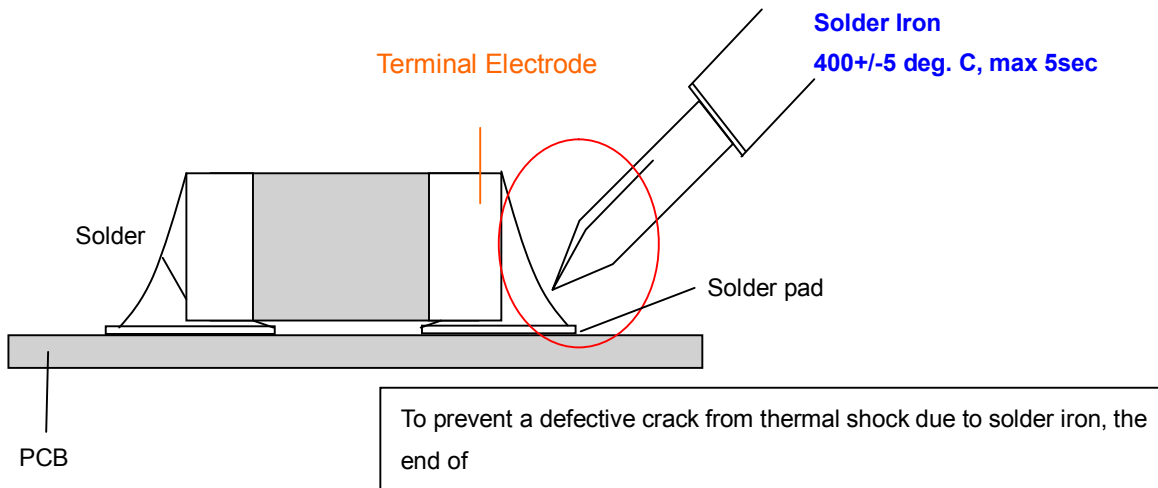
Code	Land Dimension with Chip Size [mm]			
	0201=0603	0402=1005	0603=1608	0805=2012
a	0.20~0.35	0.30~0.50	0.60~0.70	0.60~0.70
b	0.25~0.40	0.40~0.60	0.60~0.80	0.80~1.10
c	0.25~0.40	0.30~0.50	0.60~0.80	1.00~1.20

2) Reflow Soldering



Zone	temp. range [deg. C]	time [sec]	Remark
a	Curing RT ~ 130	60	* Solder : Sn-Ag-Cu * 260deg. C, over 10sec
b	Preheat max 220	90 ~ 150	
c	Soldering 220 ~ 260 [max 270]	90 ~ 150	
d	Cooling 220 ~ RT	min 60	

3) Soldering Iron



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