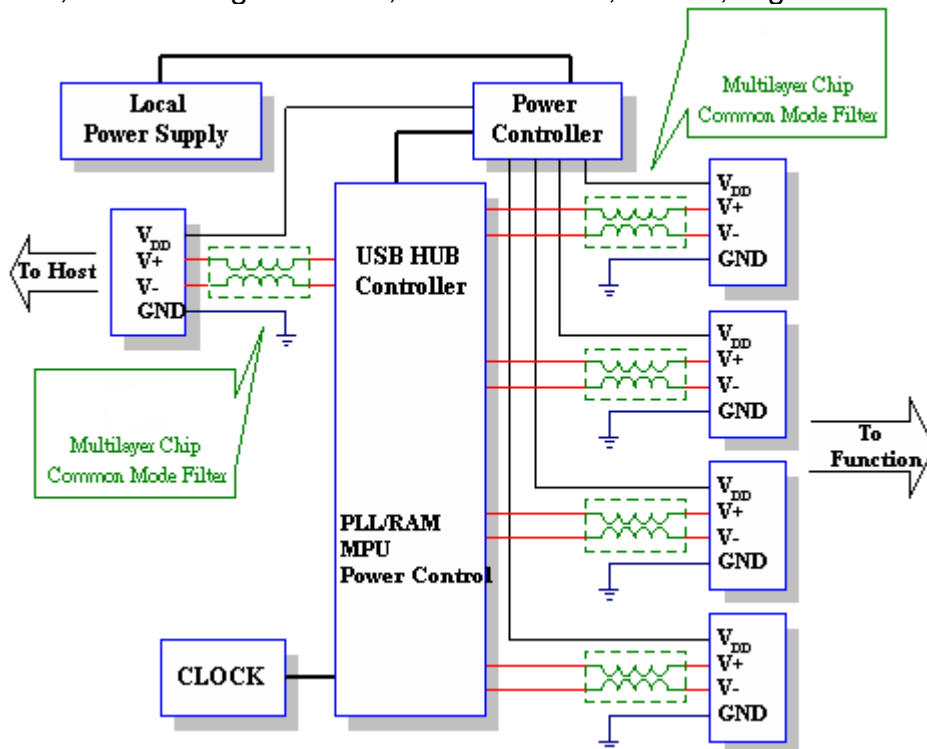


APPLICATION

- High speed digital interfaces: HDMI, Serial-ATA, IEEE1394, LVDS, and USB2.0&3.0
- Notebook and Personal Computers
- Scanners, Data Storage Devices, CD ROM R/W, Printer, Digital Camera



FEATURES

- Excellent common mode noise suppression for differential signal lines.
- Almost no affect on high-speed signals due to excellent characteristic impedance matching.
- High reliability and easy surface mount assembly.
- Lead free construction.

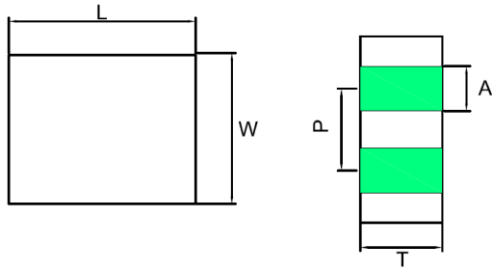
PRODUCT IDENTIFICATION

G M C F - 0 6 0 5 0 3 - 0 0 9 0 - M H A 1

① ② ③ ④

- ① Product Code
- ② Dimension Code
- ③ Series Type (0090 represents impedance at 100 MHz.)
- ④ Design Code

PRODUCT DIMENSION



NOTE : Dimensions in mm

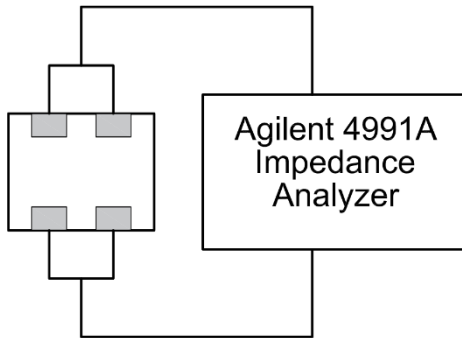
PRODUCT NO.	L	W	T	A	P
GMCF-060503	0.65±0.05	0.50±0.05	0.30±0.05	0.15±0.1	0.4±0.1

ELECTRICAL REQUIREMENTS GMCF-060503

Part Number	Impedance (Ω) at 100 MHz	R _{DC} (Ω)	Rated Current(mA) Max.	Rated Voltage(V)	Cutoff frequency (GHz)Typ.
GMCF-060503-0012-MHA1	12±5	2.5@ Max.	50	5	8
GMCF-060503-0035-MHA1	35±20%	6.5@ Max.	50	5	6.5
GMCF-060503-0060-MHA1	60±25%	2.9±25%	50	5	3.5
GMCF-060503-0090-MHA1	90±20%	3.9@ Max.	50	5	3

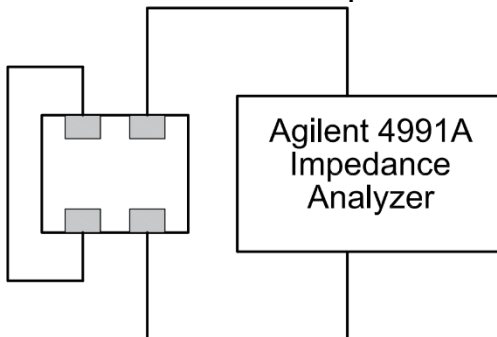
MEASURING DIAGRAM

Common Mode Impedance



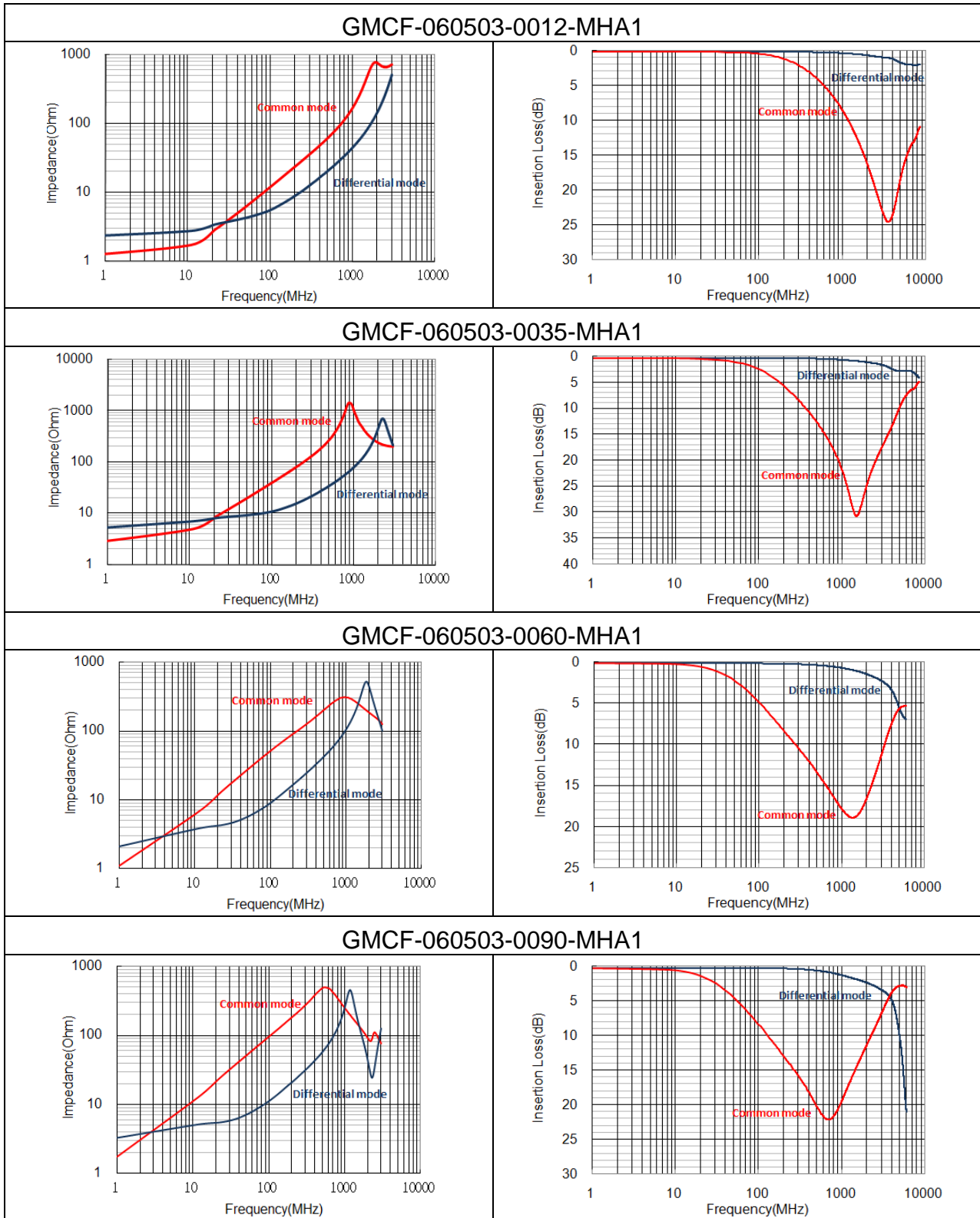
Test Instrument:
Agilent 4991A Impedance Analyzer

Differential mode Impedance



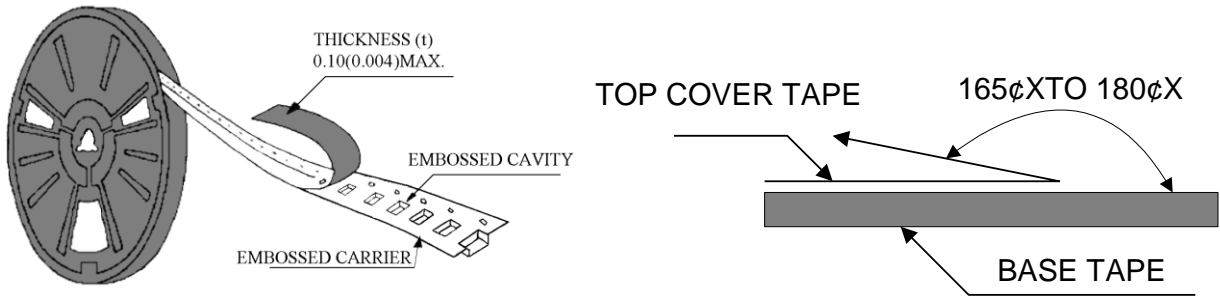
TAPICAL ELECTRICAL CHARACTERISTICS (T=25°C)

GMCF-060503



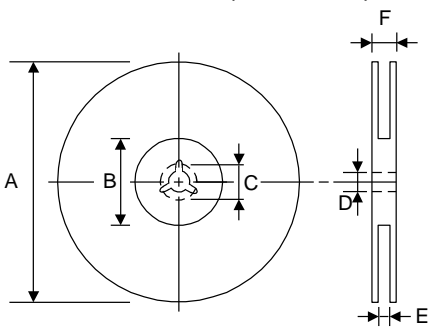
PACKAGING

● Peel-off Force

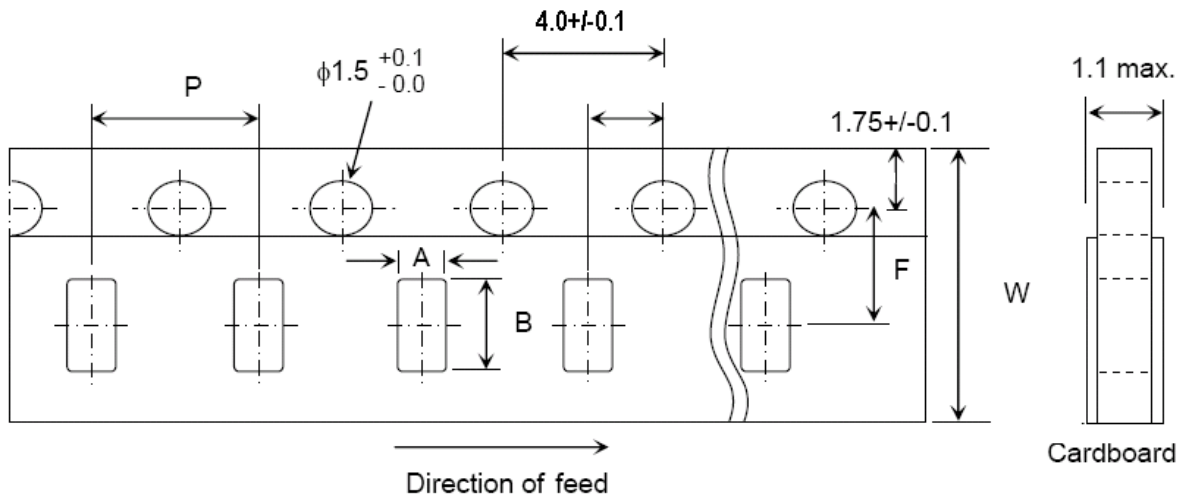


The force for peeling off cover tape is 10 grams in the arrow direction.

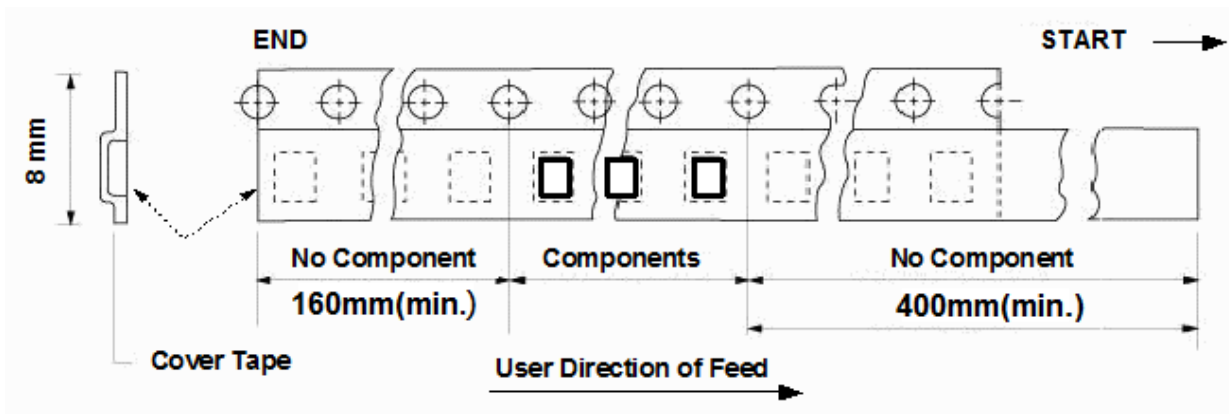
● Dimension (Unit: mm)



TYPE	A	B	C	D	E	F
8 mm	178 ±2.0	50	13±0.2	21 ±0.8	10 ±1.5	8 mm



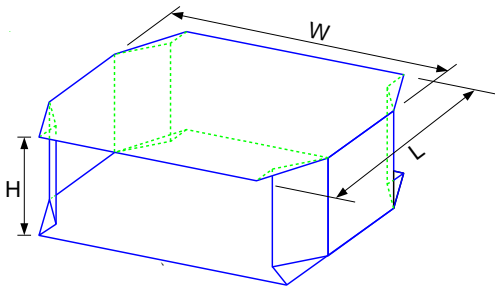
TYPE	SIZE	A	B	W	P	T	CHIPS/REEL
GMCF	060503	0.63±0.03	0.77±0.03	8±0.3	4±0.1	3.5±0.05	15000



● Taping Quantity

SERIES	PCS/Reel
060503	15000

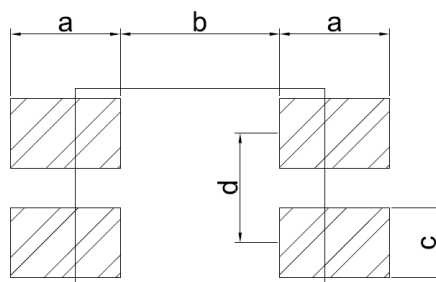
● Tape Packing Case



No. of Reels	W	L	H
2	18±0.5	18±0.5	2.4±0.2
3	18±0.5	18±0.5	3.6±0.2
4	18±0.5	18±0.5	4.8±0.2
5	18±0.5	18±0.5	6.0±0.2

Unit: cm

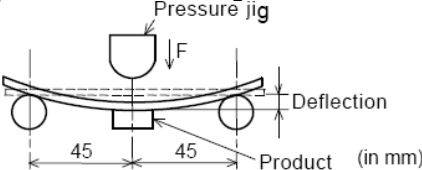
■ **RECOMMENDED PCB LAYOUT**



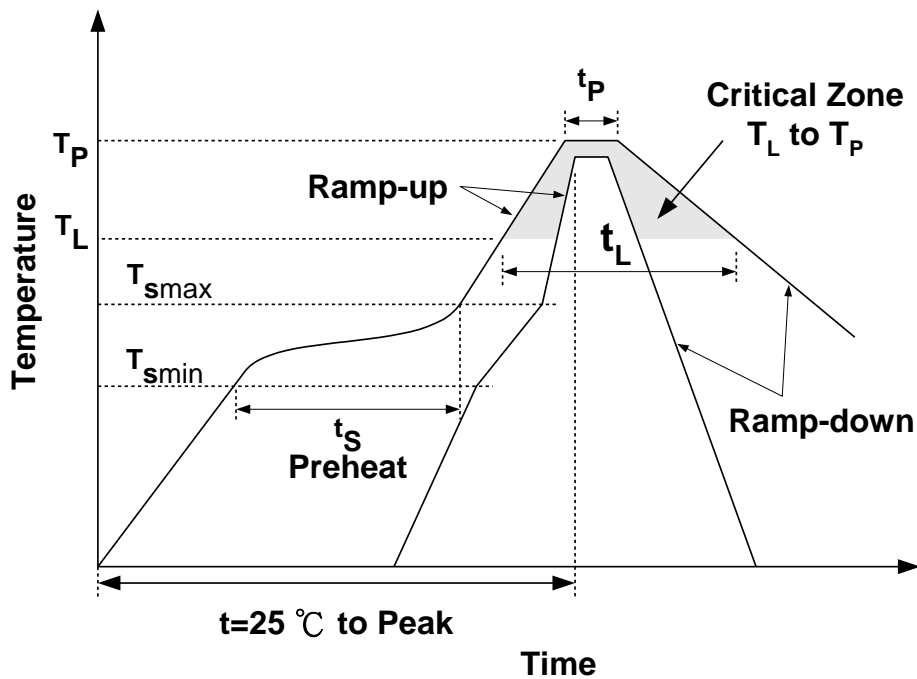
Unit: mm

Type	0605	
Size	L	0.65
	W	0.5
a	0.27~0.33	
b	0.17~0.23	
c	0.20~0.26	
d	0.4	

RELIABILITY TEST

ITEM	SPECIFICATION	TEST CONDITION
SOLDERABILITY	More than 75% of the terminal electrode shall be covered with fresh solder.	Solder: 96.5Sn-3.0Ag-0.5Cu Solder Temperature: 245±5°C Flux: Rosin Dip Time: 3 ± 1 Seconds
SOLDERING HEAT RESISTANCE	The chip shall not crack. Impedance shall be within ± 20% of the initial value.	Solder: 96.5Sn-3.0Ag-0.5Cu Solder temperature : 260 ±5°C Flux: Rosin Dip time: 10 ± 1 seconds
BENDING STRENGTH	Appearance: No damage  Product (in mm)	Substrate: PCB(100mm×40mm×0.8mm) Solder: Reflow Speed of Applying Force: 0.5mm / s Deflection: 1mm(MCF1210 series is 2mm) Hold Duration: 30 s
Vibration	There shall be no mechanical damage. Impedance shall be within ±20% of the initial value.	5g's for 20 minutes, 12 cycles each of 3 orientations. Test from 10-2000 Hz.
● Climatic test		
Thermal Shock (Temperature Cycle)	Impedance shall be within ± 20% of the initial value.	Temperature: -40°C~85°C for 30 minutes each, 100 cycles.
Humidity Resistance		Temperature : 85°C Humidity: 85% RH Time: 1000 ± 12 Hours
High Temperature Resistance		Temperature : 85°C±2°C Time: 1000 ± 12 Hours
Low Temperature Resistance		Temperature : -40°C±2°C Time: 1000 ± 12 Hours
NOTE: 1. Operating Temperature Range: -40°C TO +85°C 2. Storage Condition: The temperature should be within -40°C ~ 85°C and humidity should be less than 75% RH. The product should be used within 6 months from the time of delivery.		

RECOMMENDED REFLOW SOLDERING PROFILE



Profile Feature		Sn-Pb	Pb-Free
Preheat	t_s	60~120 seconds	60~180 seconds
	T_{smin}	100°C	150°C
	T_{smax}	150°C	200°C
Average ramp-up rate (T_{smax} to T_P)		3°C/second max.	3°C/second max.
Time main above	Temperature (T_L)	183°C	217°C
	Time (t_L)	60~150 seconds	60~150 seconds
Peak temperature (T_P)		230°C	250~260°C
Time within 5°C of actual peak temperature (t_p)		10 seconds	10 seconds
Ramp-down rate		6°C/sec max.	6°C/sec max.
Time 25°C to peak temperature		6 minutes max.	8 minutes max.

NOTES

The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.