



Features

- Ceramic multilayer type SMD component
- Non-polarized product
- Effective for suppressing common mode noise and almost no effect for high speed differential data line

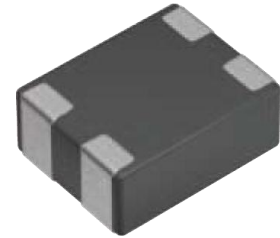
Applications

- MIPI, MHL serial interface in mobile device
- LVDS lines in notebook computers
- USB2.0, IEEE1394, DVI, HDMI lines in PDP, LCD TV, DVD Player, Audio player, DSC

VCM0504R90Y3 ----- Common mode Filter

General Information

VCM Series is a thin film common mode filter designed to suppress common mode noise for high speed differential data lines, such as USB 2.0, IEEE 1394, LVDS, DVI, HDMI, and MIPI. These differential interfaces can be used in personal computers, note books, mobile phone, LCD/PDP/DLP TVs, Blu-ray/DVD players, personal handheld equipments, etc.



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Rated Voltage	V_{DC}	5	V
Rated Current	I_{DC}	100	mA
Maximum Operating temperature	T_{OPER}	-40 to +90	°C
Maximum Storage temperature	T_{STG}	-55 to +125	°C
Maximum lead temperature for soldering during 10s	T_L	260	°C

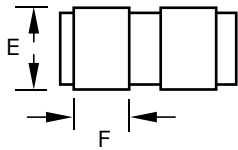
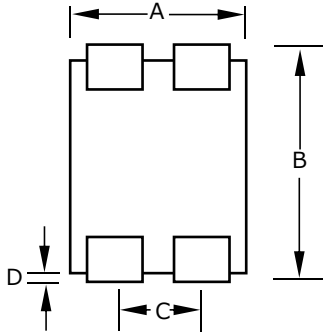
Electrical Characteristics

Parameter	Symbol	Test Conditions	TYP Value	Units
Common Mode Impedance	Z_{CM}	@100MHz	90	Ω
Cut-off Frequency	F_c	25°C±2°C	3	GHz
DC Resistance	R_{DC}	25°C±2°C	6	Ω
Insulation Resistance	R_I	25°C±2°C	6	M Ω



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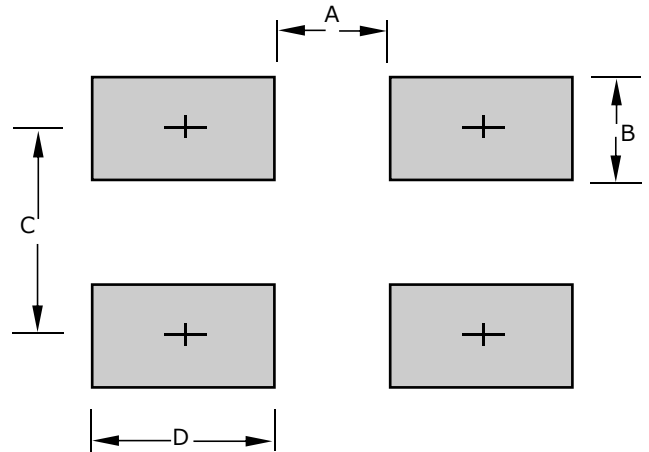
Product Dimensions



Dimension	0504 (1210)
A	$\frac{1.00 \pm 0.10}{(0.0394 \pm 0.004)}$
B	$\frac{1.25 \pm 0.10}{(0.0492 \pm 0.004)}$
C	$\frac{0.50 \pm 0.10}{(0.0197 \pm 0.004)}$
D	$\frac{0.15 \pm 0.05}{(0.0059 \pm 0.002)}$
E	$\frac{0.60 \pm 0.10}{(0.0236 \pm 0.004)}$
F	$\frac{0.30 \pm 0.10}{(0.0118 \pm 0.004)}$

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

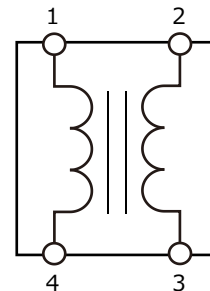
Recommended PCB Footprint



Dimension	0504 (1210)
A	$\frac{0.550}{(0.0217)}$
B	$\frac{0.300}{(0.0118)}$
C	$\frac{0.197}{(0.0078)}$
D	$\frac{0.700}{(0.0276)}$

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Circuit Diagram



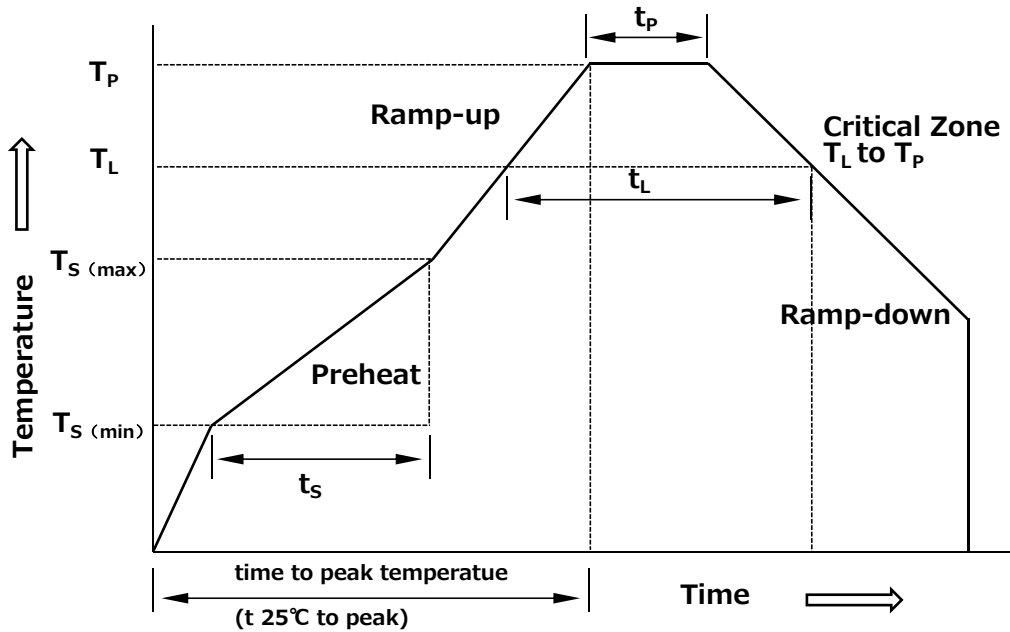
* No polarity



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Recommendable reflow soldering

Profile Feature	Pb-Free Assembly
Average Ramp-UP Rate (T _{smax} to T _p)	3 °C/secondmax.
Preheat	
-Temperature Min(T _{smin})	150 °C
-Temperature Max(T _{smax})	200 °C
-Time(T _{smin} to T _{smax})	60-180seconds
Time maintained above:	
-Temperature(T _L)	217 °C
-Time(t _L)	60-150 seconds
Peak/Classification Temperature(T _p)	260°C
Time within 5°C of actual Peak Temperature(tp)	20-40 seconds
Ramp-Down Rate	6°C/secondmax.
Time 25°C to Peak Temperature	8 minutes max.

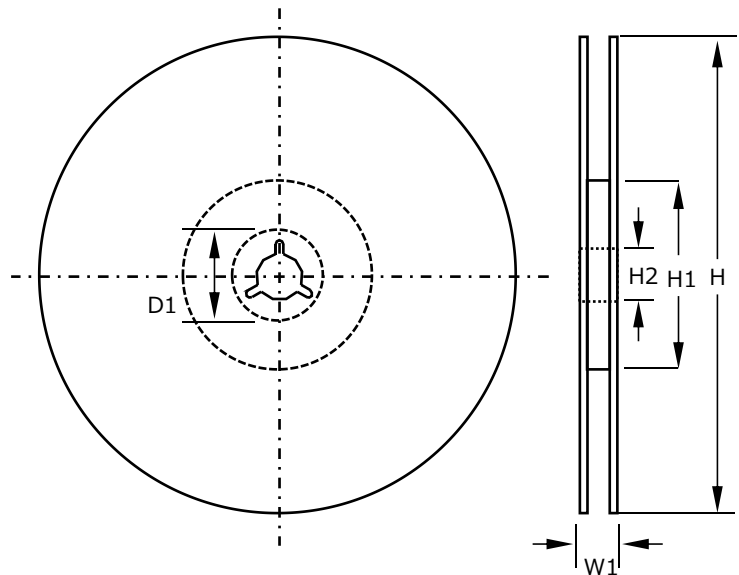
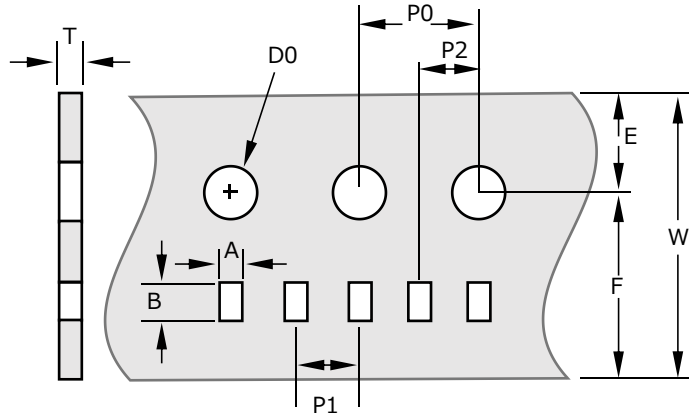




VCM0504R90Y3 ----- Common mode Filter

Packaging Information

Symbol	0504 (1210)
A	1.20 ± 0.05 (0.0472 ± 0.002)
B	1.45 ± 0.05 (0.0571 ± 0.002)
E	1.75 ± 0.10 (0.069 ± 0.004)
F	4.00 ± 0.05 (0.157 ± 0.002)
P0	4.00 ± 0.10 (0.157 ± 0.004)
P1	2.00 ± 0.05 (0.079 ± 0.002)
P2	1.50 ± 0.10 (0.059 ± 0.004)
D0	8.00 ± 0.30 (0.315 ± 0.012)
W	0.75 ± 0.03 (0.0295 ± 0.012)
T	1.20 ± 0.05 (0.0472 ± 0.002)
D1	21.00 ± 0.80 (0.827 ± 0.032)
H	180.00 ± 2.00 (7.087 ± 0.079)
H1	62.0 ± 1.5 (2.44 ± 0.059)
H2	13.00 ± 1.00 (0.512 ± 0.039)
W1	13.0 ± 1.00 (0.512 ± 0.039)



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Quantity of products in the taping package

- (1) Standard quantity : 4,000 pcs/Reel for the Series.
- (2) Shipping quantity is a multiple of standard quantity.
- (3) For additional information, please contact your local Sales Representative.