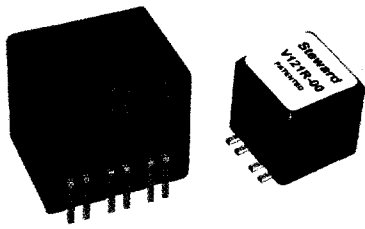


Common Mode Choke Arrays



Steward's multi-line common mode power/data array filters provide the most economical EMI filtering available for common mode noise. These ferrite surface mount filters provide EMI suppression for groups of conductors like power traces and high speed input/output circuitry (including network and storage subsystems). Steward's common mode choke arrays exhibit high frequency impedance essentially independent of low frequency AC or DC bias current.

Protected by the following US Patent : 5,455,552

Features:

- Surface mount design
- The most economical common mode filter available for filtering groups of signals
- Can be used as multi-turn device to multiply impedance
- With two turns, over 1000 ohms impedance at 100 MHz
- Will fit behind an RJ45 jack
- High continuous operating current carrying capability
- 4, 6 or 8 line parts
- Parts available in broad band and high frequency materials

Applications:

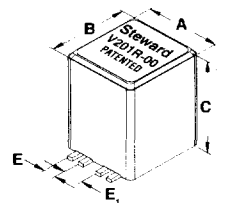
- Cost sensitive designs (no need for an expensive filtered connector)
- Filtering DC power on PC boards, especially in applications of greater than 3.0 amperes
- Filtering common mode EMI on high speed differential lines such as network and SCSI subsystems
- Low normal mode distortion provides excellent response in telecom applications

Test Specifications:

- Agilent E4991A (1MHz - 3.0 GHz) or •HP43961A Impedance Test Kit •HP16192A Test Fixture •HP16200A DC Bias Adapter •Philips PM2811 DC Power Supply
- Ambient Temperature 23.5°C ±2°
- Bandwidth 3 kHz
- Sweep Time 423 ms
- Impedance is rated at + 25% @ 100MHz
- Board level components are rated up to a maximum of 75 volts
- Maximum current ratings are determined by testing to a maximum temperature rise of 40°C with continuous operating current. Part performance is shown with curves for Common, Open and Normal Mode Impedances measured along two conductors. **Common Mode** Impedance is the impedance of EMI noise conducted in the same direction along two conductors. **Open** Circuit Impedance is the impedance measured across a single mode choke. **Normal Mode** Impedance is the total impedance to the differential circuit (both out and back).

STEWARD PART NUMBERING SYSTEM

<u>CM</u>	<u>3032</u>	<u>V</u>	<u>201</u>	<u>R</u>	<u>00</u>
PRODUCT	PART	RATED	IMPEDANCE	PACKAGING	ADDITIONAL
SERIES CODE	SIZE CODE	CURRENT CODE	VALUE CODE	CODE	DESCRIPTION



Ambient Operating Temperature Range: -55° C to +125° C

PART NUMBER	Fig #	# of Single Lines	A mm (inches)	B mm (inches)	C mm (inches)	E mm (inches)	E1 mm (inches)	IMPEDANCE (Z) TYPICAL OHMS @			DCR MAX (Ω)	RATED I MAX continuous (mA)
								100MHz	500MHz	1GHz		
CM3032V201R-00	3	4	7.62 + 0.30 (0.300 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	9.45 + 0.25 (0.372 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	200	230	205	0.010	8,000
CM4732V201R-00	2	6	11.94 + 0.30 (0.470 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	9.45 + 0.25 (0.372 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	200	230	205	0.010	8,000
CM6032V201R-00	1	8	15.24 + 0.30 (0.600 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	9.45 + 0.25 (0.372 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	200	230	205	0.010	8,000
CM3032V301R-00	3	4	7.62 + 0.30 (0.300 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	14.48 + 0.25 (0.570 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	300	300	240	0.010	8,000
CM4732V301R-00	2	6	11.94 + 0.30 (0.470 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	14.48 + 0.25 (0.570 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	300	300	240	0.010	8,000
CM6032V301R-00	1	8	15.24 + 0.30 (0.600 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	14.48 + 0.25 (0.570 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	300	300	240	0.010	8,000
*CM3032V131R-00	3	4	7.62 + 0.30 (0.300 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	9.45 + 0.25 (0.372 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	130	260	250	0.010	8,000
*CM4732V131R-00	2	6	11.94 + 0.30 (0.470 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	9.45 + 0.25 (0.372 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	130	260	250	0.010	8,000
*CM6032V131R-00	1	8	15.24 + 0.30 (0.600 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	9.45 + 0.25 (0.372 + 0.010)	1.27 + 0.08 (0.050 + 0.003)	2.03 + 0.08 (0.080 + 0.003)	130	260	250	0.010	8,000

* High Frequency Material

PART NUMBER	Fig #	# of Single Lines	A mm (inches)	B mm (inches)	C mm (inches)	E mm (inches)	E1 mm (inches)	IMPEDANCE (Z) TYPICAL CHMS @			DCR MAX (Ω)	RATED I MAX continuous (mA)
								100MHz	500MHz	1GHz		
* CM3032V221R-00	3	4	7.62 + 0.30 (0.300 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	14.48 + 0.25 (0.570 + 0.010)	2.03 + 0.08 (0.080 + 0.003)	1.27 + 0.08 (0.050 + 0.003)	220	300	190	0.010	8,000
* CM4732V221R-00	2	6	11.94 + 0.30 (0.470 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	14.48 + 0.25 (0.570 + 0.010)	2.03 + 0.08 (0.080 + 0.003)	1.27 + 0.08 (0.050 + 0.003)	220	300	190	0.010	8,000
* CM6032V221R-00	1	8	15.24 + 0.30 (0.600 + 0.012)	8.13 + 0.15 (0.320 + 0.006)	14.48 + 0.25 (0.570 + 0.010)	2.03 + 0.08 (0.080 + 0.003)	1.27 + 0.08 (0.050 + 0.003)	220	300	190	0.010	8,000

* High Frequency Material

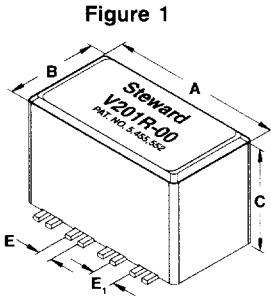


Figure 1

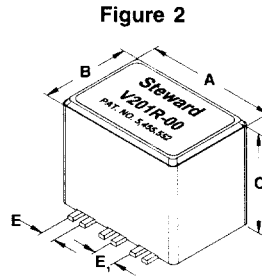


Figure 2

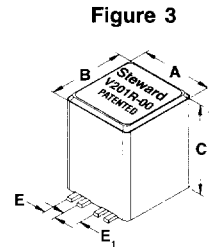
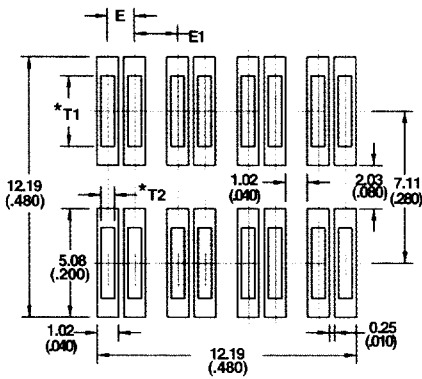


Figure 3

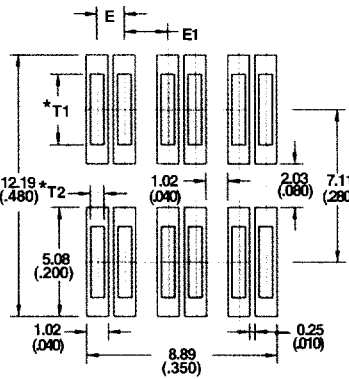
CM6032

RECOMMENDED LAND PATTERN



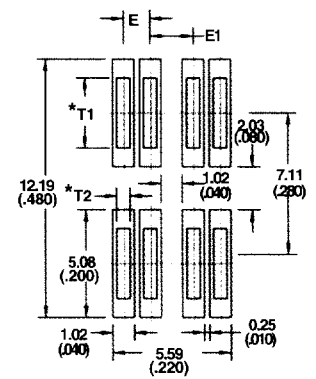
CM4732

RECOMMENDED LAND PATTERN



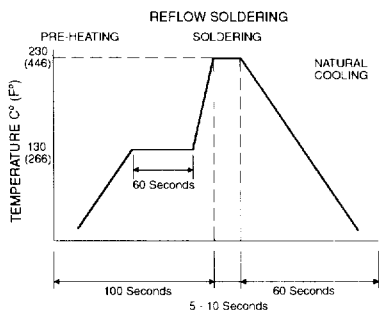
CM3032

RECOMMENDED LAND PATTERN



* WIRE LENGTH [* T1 = 3.30 (.130)] * WIRE WIDTH [* T2 = 0.64 (.025)] * WIRE THICKNESS [* T3 = 0.38 (.015)]

Recommended Soldering Conditions



Wave soldering will require additional pre-heat time.

One Turn / Two Turn Equivalent Circuits

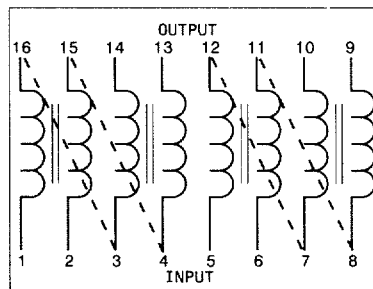


Figure 1

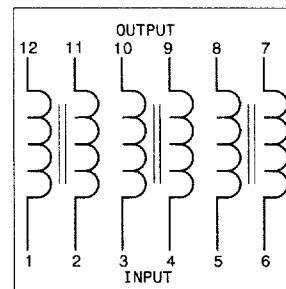


Figure 2

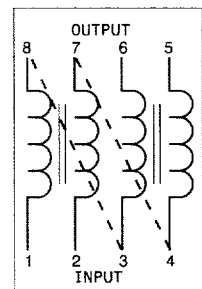
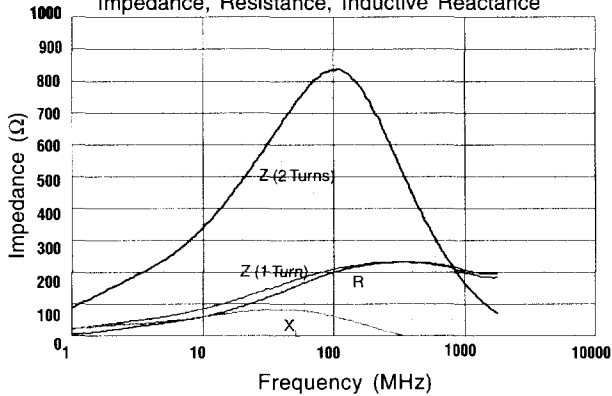


Figure 3

CM3032V201R-00, CM4732V201R-00 & CM6032V201R-00

Z (1 & 2 Turn), R, X_L vs. Frequency

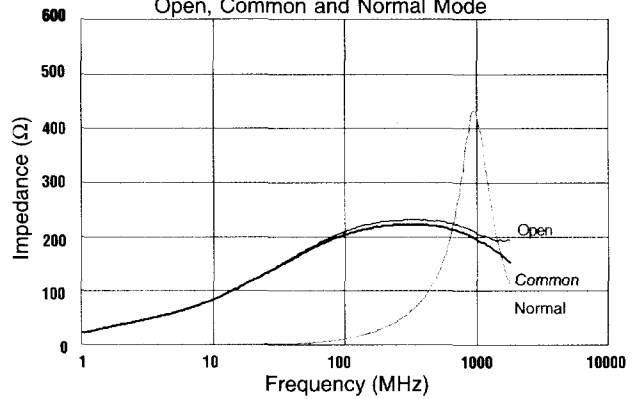
Impedance, Resistance, Inductive Reactance



CM3032V201R-00, CM4732V201R-00 & CM6032V201R-00

Z vs. Frequency

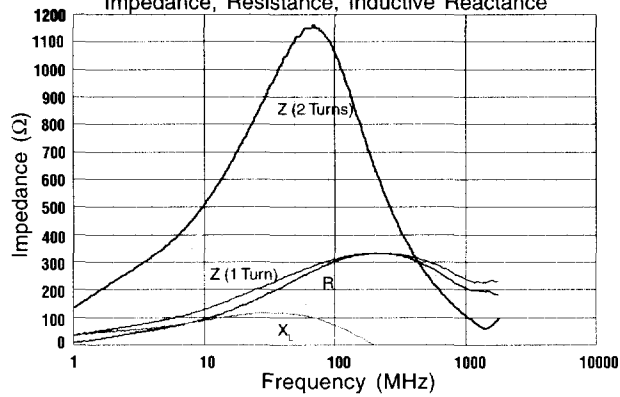
Open, Common and Normal Mode



CM3032V301R-00, CM4732V301R-00 & CM6032V301R-00

Z (1 & 2 Turn), R, X_L vs. Frequency

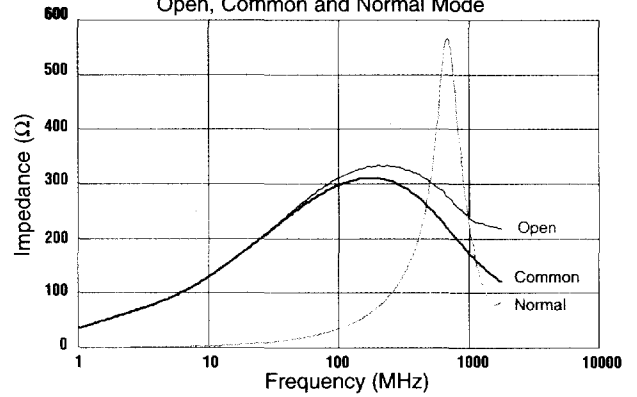
Impedance, Resistance, Inductive Reactance



CM3032V301R-00, CM4732V301R-00 & CM6032V301R-00

Z vs. Frequency

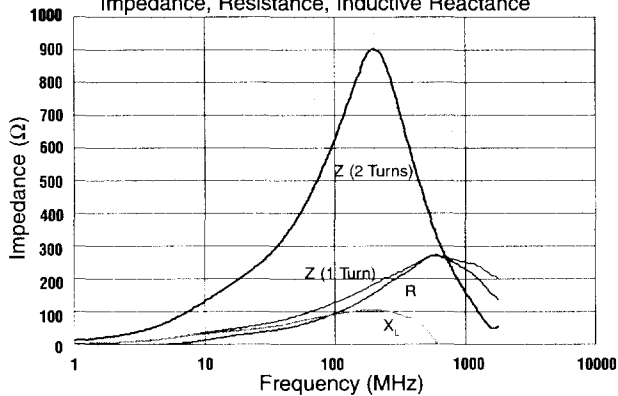
Open, Common and Normal Mode



CM3032V131R-00, CM4732V131R-00 & CM6032V131R-00

Z (1 & 2 Turn), R, X_L vs. Frequency

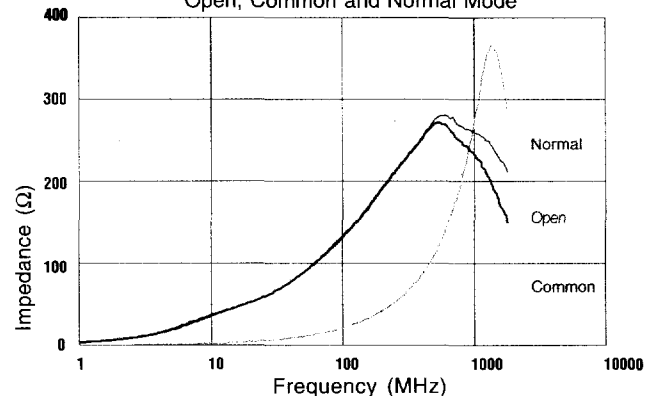
Impedance, Resistance, Inductive Reactance



CM3032V131R-00, CM4732V131R-00 & CM6032V131R-00

Z vs. Frequency

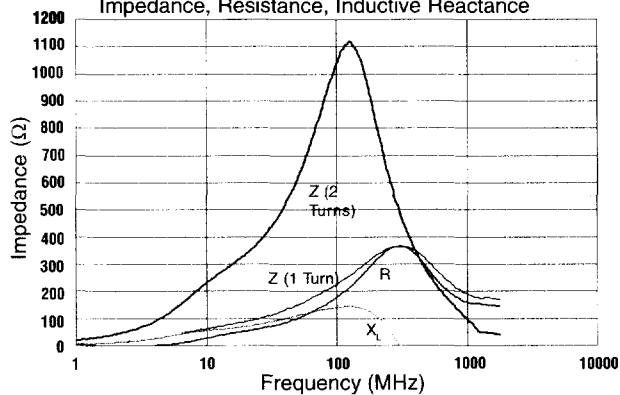
Open, Common and Normal Mode



CM3032V221R-00, CM4732V221R-00 & CM6032V221R-00

Z (1 & 2 Turn), R, X_L vs. Frequency

Impedance, Resistance, Inductive Reactance



CM3032V221R-00, CM4732V221R-00 & CM6032V221R-00

Z vs. Frequency

Open, Common and Normal Mode

