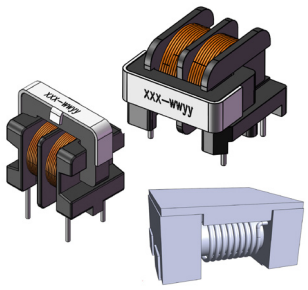
Common-mode noise suppression devices for electronic applications



Eaton ECM is a new line of common-mode chokes consisting of two families; ECMT and ECMS.

Product description

Eaton ECM is a new line of common-mode chokes consisting of two families; ECMT and ECMS. ECMS are offered in three families; ECMS1V0704, ECMS1V0905, and ECMS1V1306, while the ECMT products come in three families; ECMT1V17, ECMT1V20, and ECMT1V24. ECMT1V17 and ECMT1V20 are available in both horizontal and vertical configurations.

ECM are offered in several through-hole and surface-mounted sizes from 7 mm to 24 mm. Eaton ECM provides a complete range of inductance, impedance, and current ratings, while delivering high-performance noise filtering in today's high-frequency and power line circuits. Both ECMS and ECMT offer an optimal combination of filtering options, from high-voltage isolation to EMI immunity ideal for a wide range of commercial applications. Eaton ECM can perform reliably in -40 °C to +125 °C operating temperatures.

Features and benefits

- Complete package size offers greater flexibility across a wide range of applications using small and large products reducing board size or adding more power in the same size.
- High current capability up to 15 A.
- Provides common-mode noise suppression up to 100 MHz.
- Provides EMI immunity in various applications.
- Ideal for noise attenuation over a wide range of frequencies.
- Suitable for use in high-voltage signal lines.
- Improves application reliability under a wide range of environmental conditions.
- Suitable for a wide range of computing, consumer, industrial, energy, and medical applications.

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Product specifications

Part number[7]	OCL[1] (mH) minimum (1-2), (4-3)	DCR[2] (Ω) maximum (1-2), (4-3) @ +25 °C	I_{rms}[3] (A) (1-4) short 2,3	SRF (kHz) minimum	Hi-pot[4] (Vac)	Hi-pot[5] (Vac)	Rated voltage (Vac)	Insulation resistance[6] (MΩ) minimum
ECMT1V17xxx-xxx-R	1-85	0.1-5.7	0.3-1.0	85-792	1500	1000	250	100
ECMT1V20xxx-xxx-R	2-60	0.08-2.1	0.4-1.5	96-976	1500	1000	250	100
ECMT1V24xxx-xxx-R	5-30	0.3-1.6	0.6-1.4	276-712	1500	1000	250	100

1. Open circuit inductance (OCL) Test parameters: 1 kHz, 0.25 Vrms, 0.0 Adc, +25 °C
2. DCR Test parameters: 4-wire method measured from the root of base, +25 °C
3. I_{rms}: Maximum DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
4. Hi-pot: Coil-Coil, 2 seconds, 5 mA
5. Hi-pot: Coil-Core, 2 seconds, 5 mA
6. Insulation Resistance: Coil-Coil and Coil-Core, at 500 Vdc
7. Part Number Definition: ECMT1Vxxxxy-zzz-R
   ECMT1V = Product code
   xxxx= Size indicator
   y= Orientation H= horizontal, S= vertical
   zzz=Inductance value in mH, R= decimal point, If no R is present last digit indicates number of zeros
   -R= RoHS compliant

Part number[5]	Impedance[1] (Ω) typical	DCR[2] (mΩ) maximum (1-2), (4-3) @ +25 °C	Rated current[3] (A) maximum	Rated voltage (Vdc)	Insulation resistance[4] (MΩ) minimum
ECMS1V0704-xxx-R	40-2500	5-75	0.9-15	80	10
ECMS1V0905-xxx-R	300-2700	6-80	2.0-6.0	80	10
ECMS1V1306-xxx-R	230-1000	2.0-14	6.0-10	80	10

1. Impedance test parameters: 100 MHz, 0.1 Vrms, parallel connection (1,2 - 4,3), +25 °C
2. DCR test parameters: parallel connection (1,2 - 4,3), 4-wire method measured at +25°C
3. Rated current: DC current for an approximate temperature rise of 40 °C without core loss. It is recommended that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.
4. Insulation resistance: Coil to coil
5. Part Number Definition: ECMS1Vxxxx-yyy-R
   ECMS1V = Product code
   xxxx= Size indicator
   yyy= Typical impedance value in ohms. R= decimal point, if no R is present then last digit indicates the number of zeros
   -R suffix = RoHS compliant

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

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