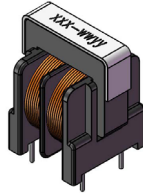


# ECMT1V24

## Common mode choke, through-hole



### Product features

- Closed magnetic path reduces conductive EMI emission
- High impedance and inductance values
- Robust construction
- High voltage isolation
- Independent winding sections
- Rated voltage: 250 Vac

### Applications

- Industrial IoT equipment
- Motion controls
- Power supplies
- Battery backup
- Renewable energy products
- Smart meters
- Solar/wind generators, inverters, charger controllers
- Medical equipment
- High tech consumer products
- Appliances

### Environmental compliance and general specifications

- Storage temperature range (Component): -40 °C to +85 °C
- Operating temperature range: -40 °C to +125 °C (ambient plus self-temperature rise)
- Wave solder temperature: +260 °C maximum



**Product specifications**

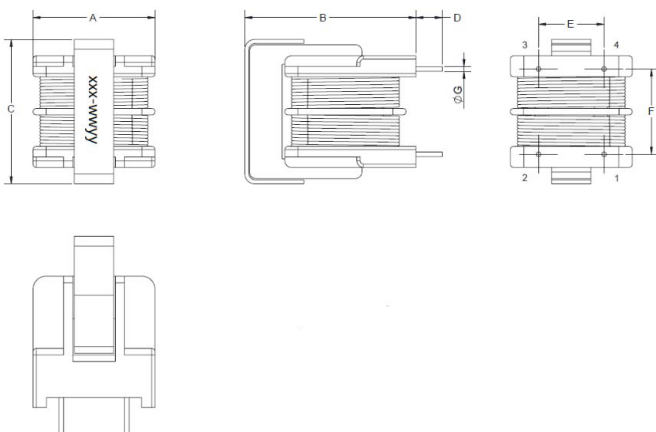
Part number <sup>7</sup>	OCL <sup>1</sup> (mH) minimum (1-2), (4-3)	DCR <sup>2</sup> (Ω) maximum (1-2), (4-3) @ +25 °C	I <sub>rms</sub> <sup>3</sup> (A) short 2,3	SRF (kHz) minimum	Hi-pot <sup>4</sup> (Vac)	Hi-pot <sup>5</sup> (Vac)	Insulation resistance <sup>6</sup> (MΩ) minimum
ECMT1V2429S-5R0-R	5.0	0.3	1.4	712	1500	1000	100
ECMT1V2429S-100-R	10	0.6	1.2	423	1500	1000	100
ECMT1V2429S-150-R	15	0.6	1.0	408	1500	1000	100
ECMT1V2429S-300-R	30	1.6	0.6	276	1500	1000	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<sub>rms</sub><sup>3</sup>: 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.

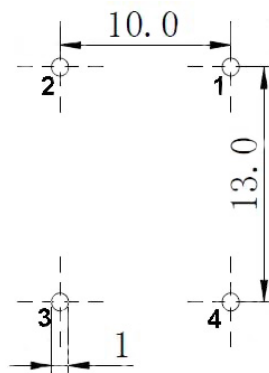
4. Hi-pot: Coil-Coil, 2 seconds, 5 mA
5. Hi-pot: Coil-Core, 2 seconds, 5 mA
6. Insulation Resistance: Coil-Coil and Coil-Core, at 500 Vdc
7. Part Number Definition: ECMT1Vxxxx-yyy-R  
ECMT1V = Product code  
xxxx= Size indicator  
y= Orientation H= horizontal, S= vertical  
zzz=Inductance value in mH, R= decimal point, If no R is present last digit indicates number of zeros  
-R= RoHS compliant

**Mechanical parameters, schematic, pad layout (mm)**

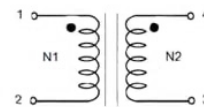
**ECMT1V2429S-xxx-R**



**Recommended PCB layout**



**Schematic**

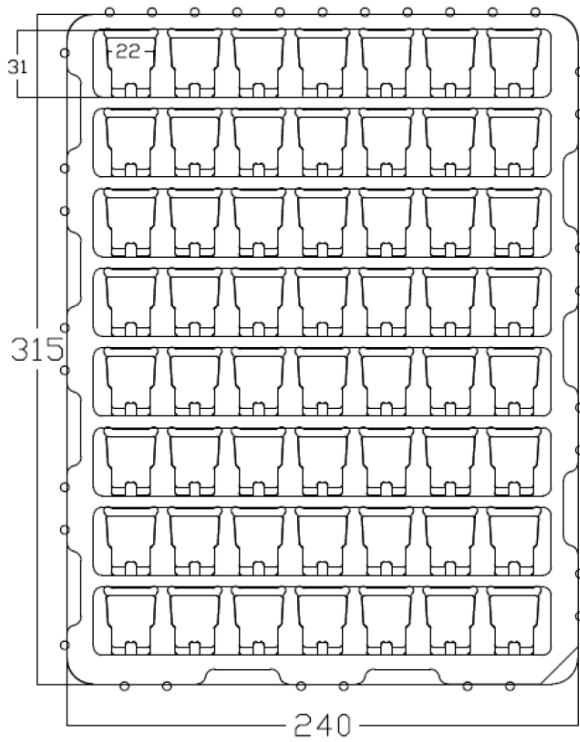


Part number	A	B	C	D	E	F	G
ECMT1V2429S-xxx-R	20.0 max.	29.0 max.	24.0 max.	3.5 ± 0.5	10.0 ± 0.5	13.0 ± 0.5	0.7 ± 0.1

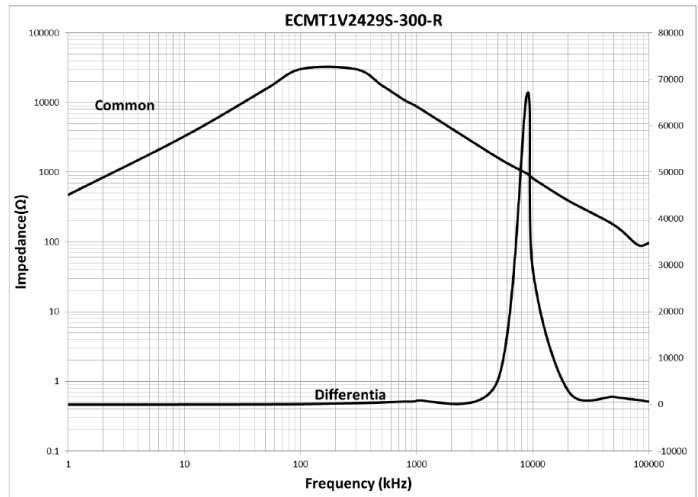
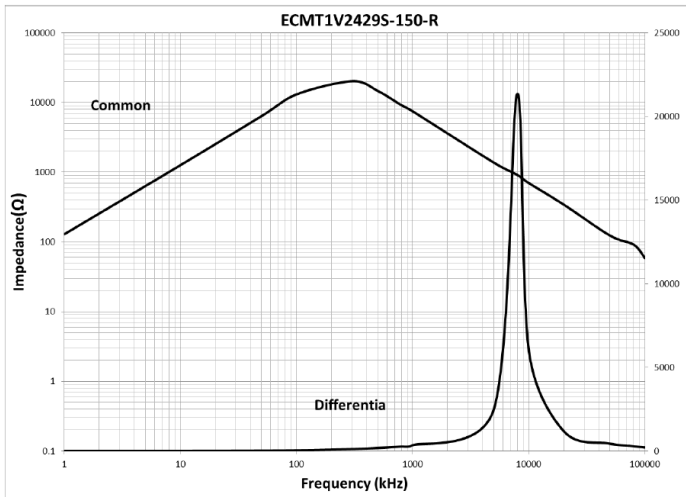
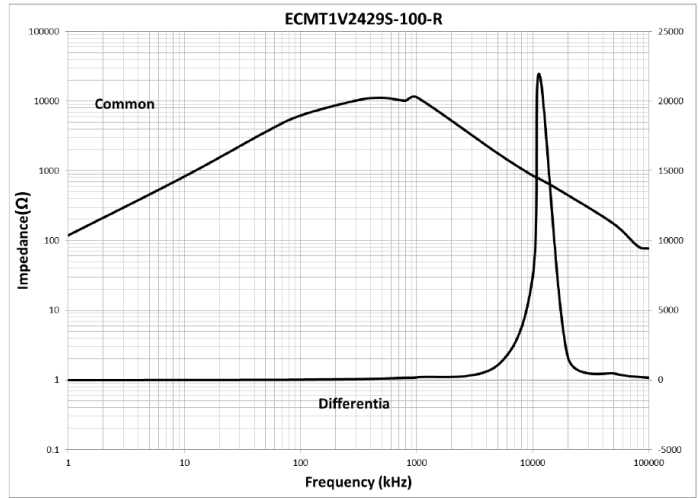
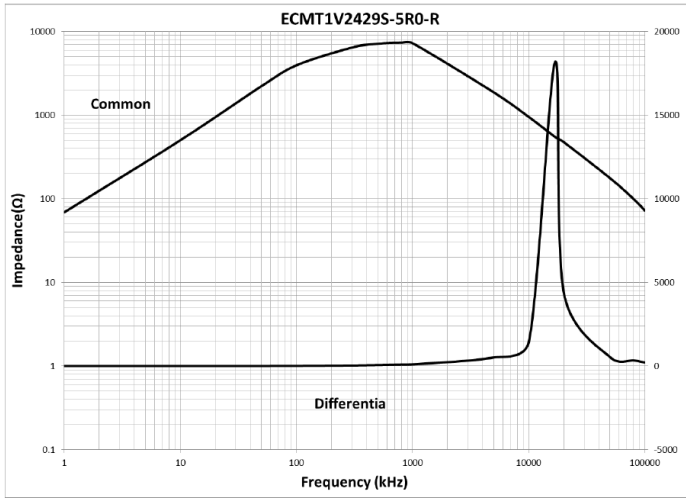
Part marking: xxx-yyy, xxx =inductance value in mH, yyy= lot code  
Traces or vias underneath the inductor not recommended

**Packaging information (mm)**

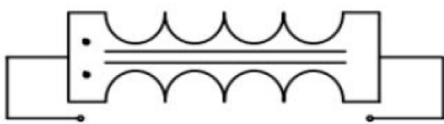
ECMT1V2429S-xxx-R  
Supplied in tray, 8 trays per carton. (56 parts per tray x 8 trays per box = 448 parts per carton)  
(Tray height 25 mm)



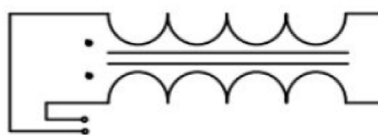
**Impedance vs frequency**



**Measurement method**

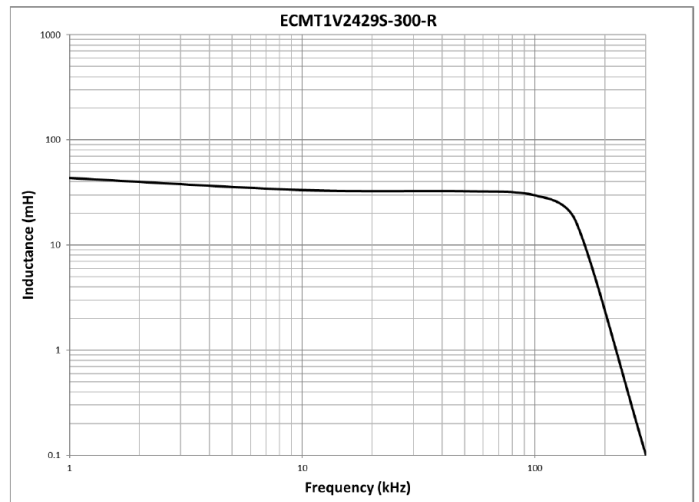
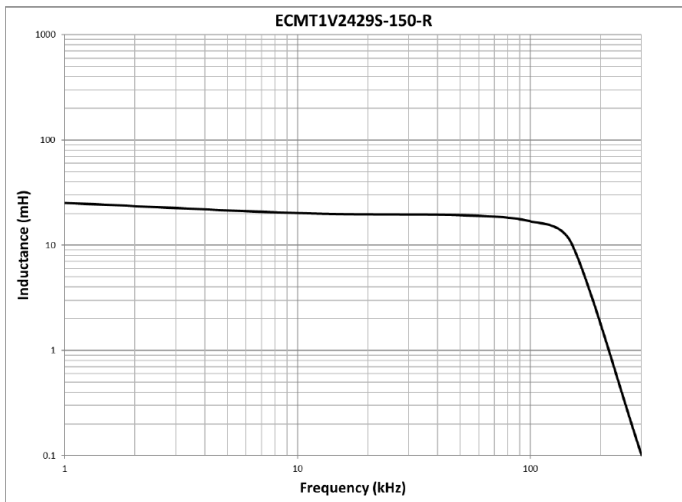
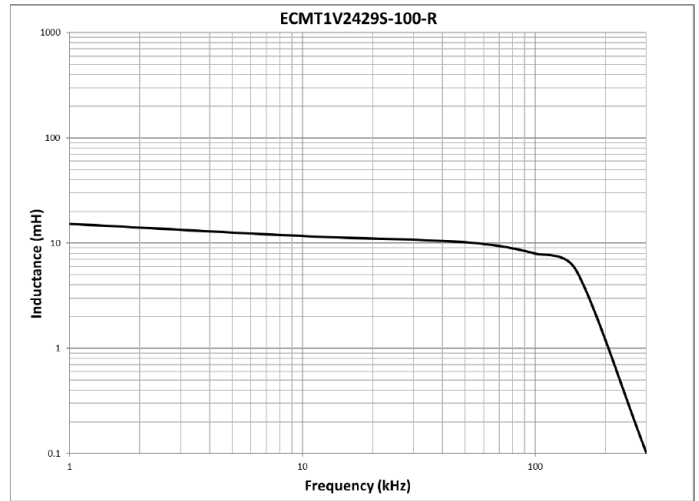
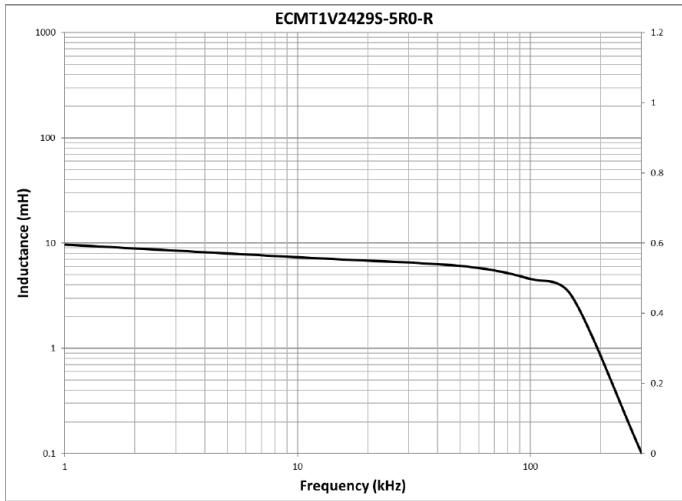


Common Mode

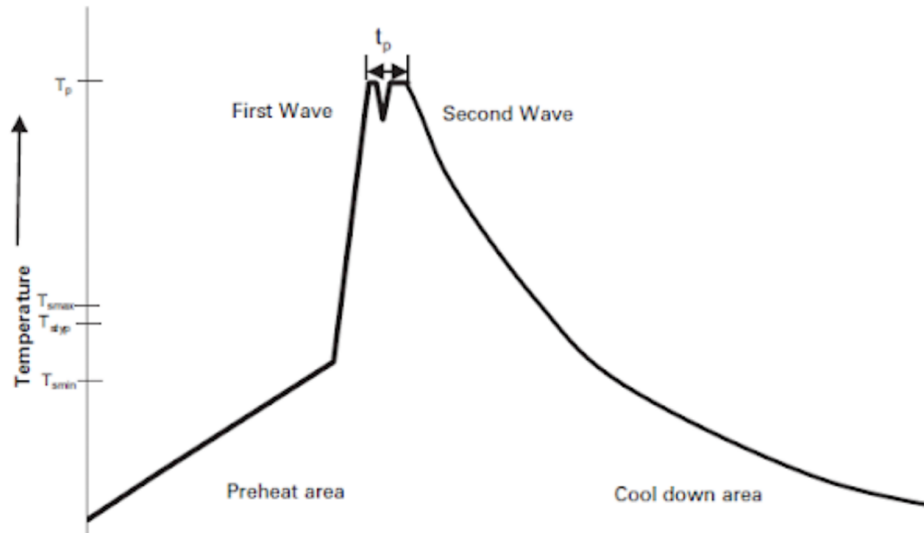


Differential Mode

Inductance vs frequency



### Wave solder profile



### Reference EN 61760-1:2006

Profile feature	Standard SnPb solder	Lead (Pb) free solder
Preheat		
• Temperature min. ( $T_{smin}$ )	100 °C	100 °C
• Temperature typ. ( $T_{styp}$ )	120 °C	120 °C
• Temperature max. ( $T_{smax}$ )	130 °C	130 °C
• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	70 seconds	70 seconds
$\Delta$ preheat to max Temperature	150 °C max.	150 °C max.
Peak temperature ( $T_p$ )*	235 °C – 260 °C	250 °C – 260 °C
Time at peak temperature ( $t_p$ )	10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate	~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~5 K/s max
Time 25 °C to 25 °C	4 minutes	4 minutes

### Manual solder

+350 °C, 4-5 seconds. (by soldering iron), generally manual, hand soldering is not recommended.

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