

# EMC Components

## Common Mode Choke Coils for Signal Line SMD

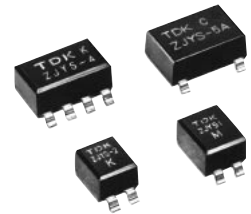
## ZJYS Series ZJYS51, ZJYS81 Types

### FEATURES

- A common mode filter for distortion-free noise removal from transmitted signals. Optimized for transmission of high quality signals.
- Best filter for countering the common mode noise resulting from data signal processing by PCs, phone equipment, etc.
- SMD-type designed for surface mounting.
- Due to a maximum current tolerance of 5A, can also be used to counter power line noise.
- The ZJYS81R5-2PL is a high inductance common mode filter designed to use with a CAN-BUS.
- The "T" designation at the end of the product code indicates tape mounting.

### APPLICATIONS

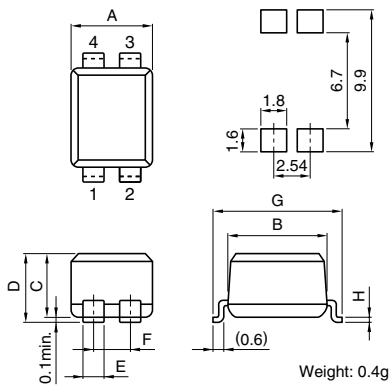
Personal computers, telephones, LANs, ISDNs, digital PBXs, electronic games, CTVs, CD-ROM drives, 8mm video equipment, and other electronic devices.



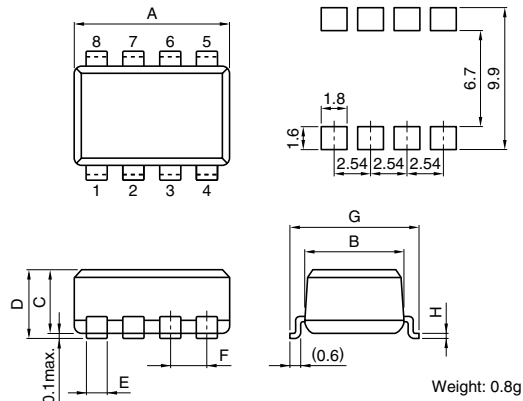
### SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERNS

#### TRANSFER MOLD

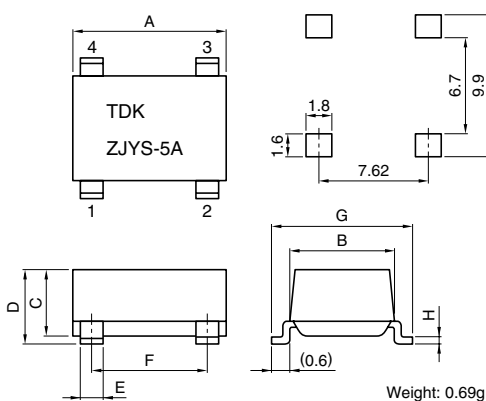
#### ZJYS51R5-2P(T), -2PB(T), -2PL(T), 5103-2PL(T)



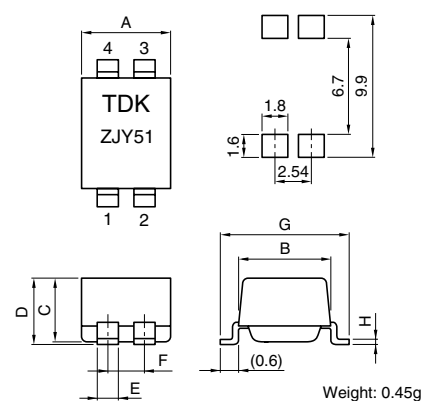
#### ZJYS51R5-4P(T), -M4PA(T)



#### ZJYS5105-2PL(T)



#### ZJYS81R5-2PL25(T)-G01, -2PL51(T)-G01



Dimensions in mm

| Part No.                                       | A max. | B max. | C max. | D max. | E   | F         | G max. | H    |
|--|--------|--------|--------|--------|-----|-----------|--------|------|
| ZJYS51R5-2P(T), -2PB(T), -2PL(T), 5103-2PL(T)* | 5.5    | 6.86   | 4.57   | 5.08   | 1.3 | 2.54±0.25 | 9±0.5  | 0.25 |
| ZJYS51R5-4P(T), -M4PA(T)                       | 10.5   | 6.86   | 4.57   | 5.08   | 1.3 | 2.54±0.25 | 9±0.5  | 0.25 |
| ZJYS5105-2PL(T)                                | 10.5   | 7.5    | 4.57   | 5.08   | 1.3 | 7.62±0.25 | 9±0.5  | 0.25 |
| ZJYS81R5-2PL25(T)-G01, -2PL51(T)-G01           | 6      | 7.1    | 4.5    | 5      | 1.3 | 2.54±0.25 | 9±0.5  | 0.25 |

\* T means the taping product.

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### Common Mode Choke Coils for Signal Line SMD

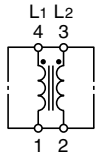
#### CIRCUIT DIAGRAMS

ZJYS51R5-2P(T),  
-2PB(T), -2PL(T)

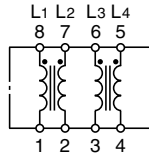
ZJYS5103-2PL(T)

ZJYS81R5-2PL25(T)-G01

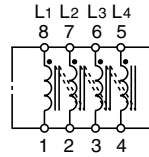
ZJYS81R5-2PL51(T)-G01



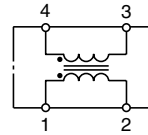
ZJYS51R5-4P(T)



ZJYS51R5-M4PA(T)



ZJYS5105-2PL(T)



#### ELECTRICAL CHARACTERISTICS

| Part No.   | ZJYS51R5-2P(T), -2PB(T)*1,<br>-2PL(T)*2, -4P(T) | ZJYS5103-2PL(T)        | ZJYS51R5-M4PA(T)      |
|--|---|------------------------|-----------------------|
| Rated voltage Edc(V)   | 50  | 50                     | 50                    |
| Rated current (A)  | 2   | 3                      | 0.5                   |
| Test voltage Edc(V) [Between terminals for 5s]                       | 125   | 125                    | 125                   |
| Insulation resistance (MΩ)<br>[Between terminals at DC.50V for 1min] | 100min.   | 100min.                | 100min.               |
| DC resistance (Ω) [Each line]  | 0.06max.  | 0.03max.               | 0.2max.               |
| Operating temperature range (°C)                                     | -25 to +85                                      | -25 to +85             | -25 to +85            |
| Impedance (Ω) [+5 to +35°C]  | 200min.[20 to 300MHz]                           | 100min.[100 to 300MHz] | 200min.[20 to 300MHz] |

| Part No.   | ZJYS5105-2PL(T)        | ZJYS81R5-2PL25(T)-G01/-2PL51(T)-G01 |
|--|------------------------|-------------------------------------|
| Rated voltage Edc(V)   | 50                     | 80                                  |
| Rated current (A)  | 5                      | 0.5                                 |
| Test voltage Edc(V) [Between terminals for 5s]                       | 125                    | 200                                 |
| Insulation resistance (MΩ)<br>[Between terminals at DC.50V for 1min] | 100min.                | 100min.                             |
| DC resistance (Ω) [Each line]  | 0.01max.               | 0.25/0.3max.                        |
| Operating temperature range (°C)                                     | -25 to +85             | -40 to +125                         |
| Impedance (Ω) [+5 to +35°C]  | 100min.[100 to 300MHz] | 600min./1000min.[10 to 100MHz]      |

\*1 The characteristics of low area reform type.

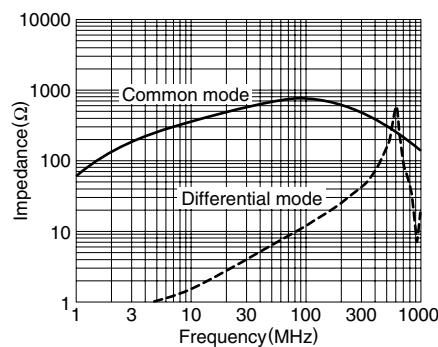
\*2 Separate winding type (for communications).

• The "T" designation at the end of the product code indicates tape mounting.

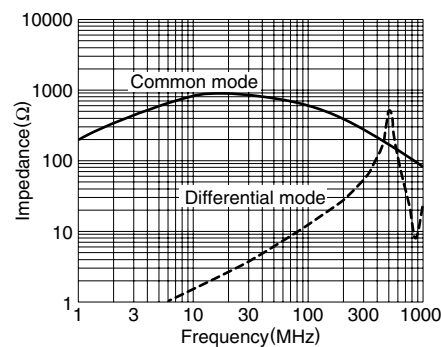
#### TYPICAL ELECTRICAL CHARACTERISTICS

##### IMPEDANCE CHARACTERISTICS (for 1 element)

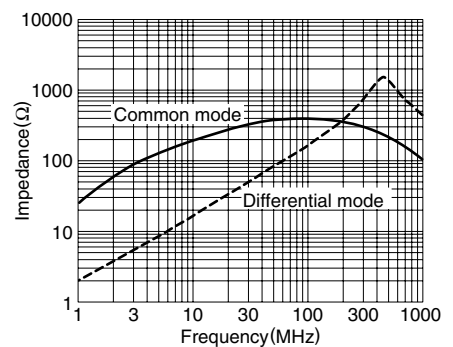
ZJYS51R5-2P, -4P



ZJYS51R5-2PB



ZJYS51R5-2PL



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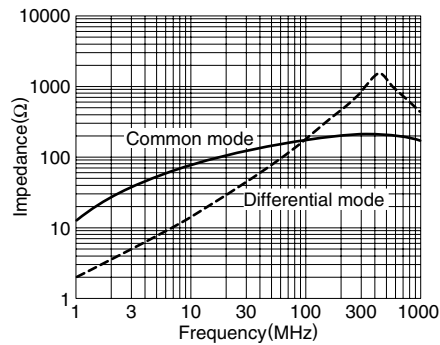
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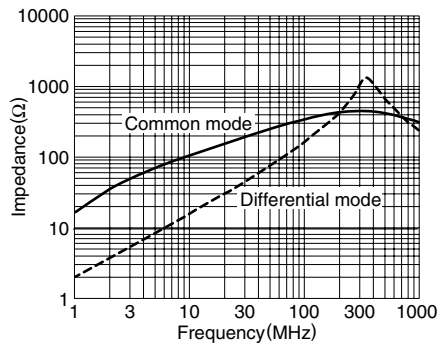
#### TYPICAL ELECTRICAL CHARACTERISTICS

##### IMPEDANCE CHARACTERISTICS (for 1 element)

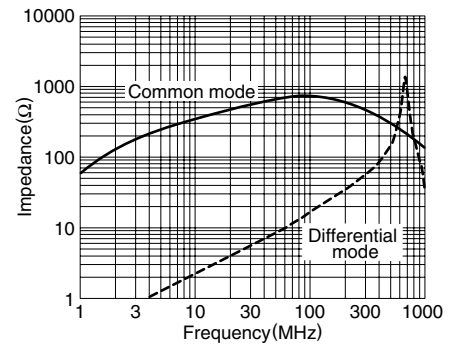
###### ZJYS5103-2PL



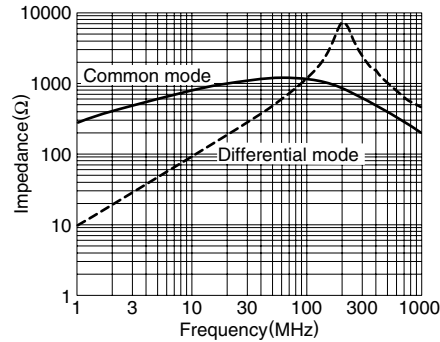
###### ZJYS5105-2PL



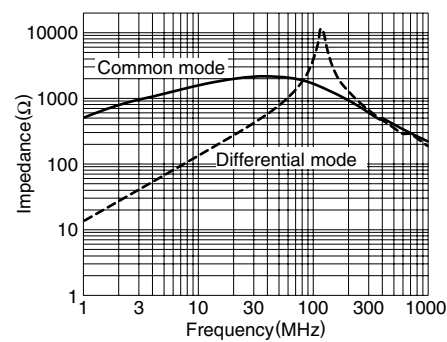
###### ZJYS51R5-M4PA



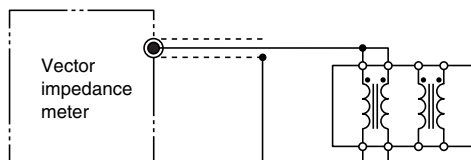
###### ZJYS81R5-2PL25-G01



###### ZJYS81R5-2PL51-G01



#### MEASURING CIRCUIT



Vector impedance meter (YHP 4191A equivalent)  
Measuring at each Common mode choke coil

#### PACKAGING STYLE AND QUANTITIES

| Part No.              | Taping<br>(/reel) | Bulk       |
|-----------------------|-------------------|------------|
| ZJYS51R5-2P(T)        | 1500 pieces       | 200 pieces |
| ZJYS51R5-2PB(T)       | 1500 pieces       | 200 pieces |
| ZJYS51R5-2PL(T)       | 1500 pieces       | 200 pieces |
| ZJYS5103-2PL(T)       | 1500 pieces       | 200 pieces |
| ZJYS81R5-2PL25(T)-G01 | 1500 pieces       | 200 pieces |
| ZJYS81R5-2PL51(T)-G01 | 1500 pieces       | 200 pieces |
| ZJYS51R5-4P(T)        | 1000 pieces       | 100 pieces |
| ZJYS51R5-M4PA(T)      | 1000 pieces       | 100 pieces |
| ZJYS5105-2PL(T)       | 1000 pieces       | 100 pieces |

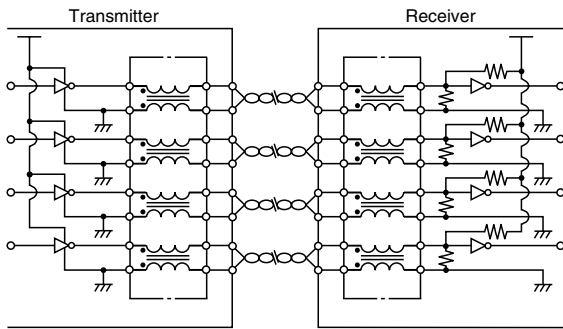
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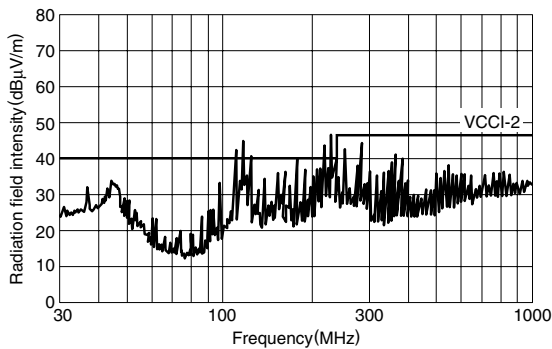
### TYPICAL APPLICATION

An application example showing how radiation noise is prevented when transmitter and receiver are connected via twisted pair cabling.

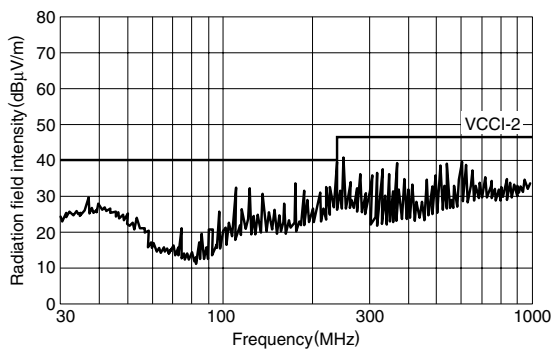


### TYPICAL APPLICATION EFFECTS

#### (a) Without EMC filter



#### (b) With EMC filter ZJYS51R5-2P(T), 4P(T)



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