

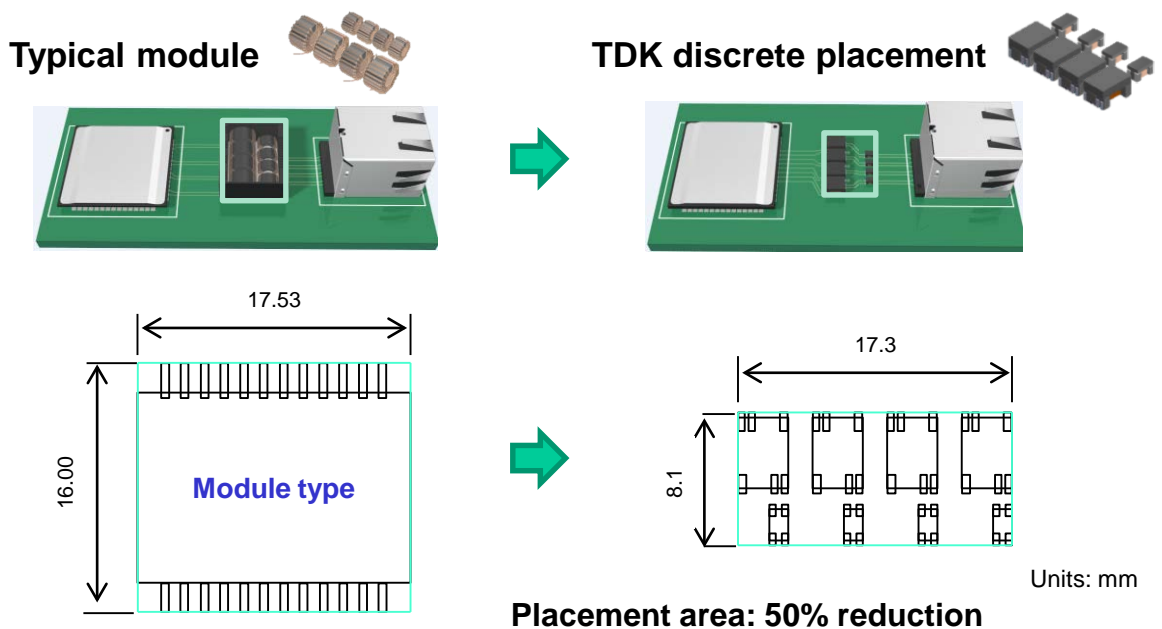


# LAN Magnetics Solution for 1000BASE-T

Evaluation Board TDK Part number: ALT4532-EVA-01A

## Contents

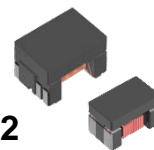
- PCB area reduction from typical module to discrete placement



- Evaluation Board configuration and detailed specification

- Technical Specification of Pulse Transformer plus Common Mode Filter combination for 1000BASE-T Solution

- LAN Transformer: ALT4532M-201-T001
- Common Mode Filter: ACM2012-900-2P-T002



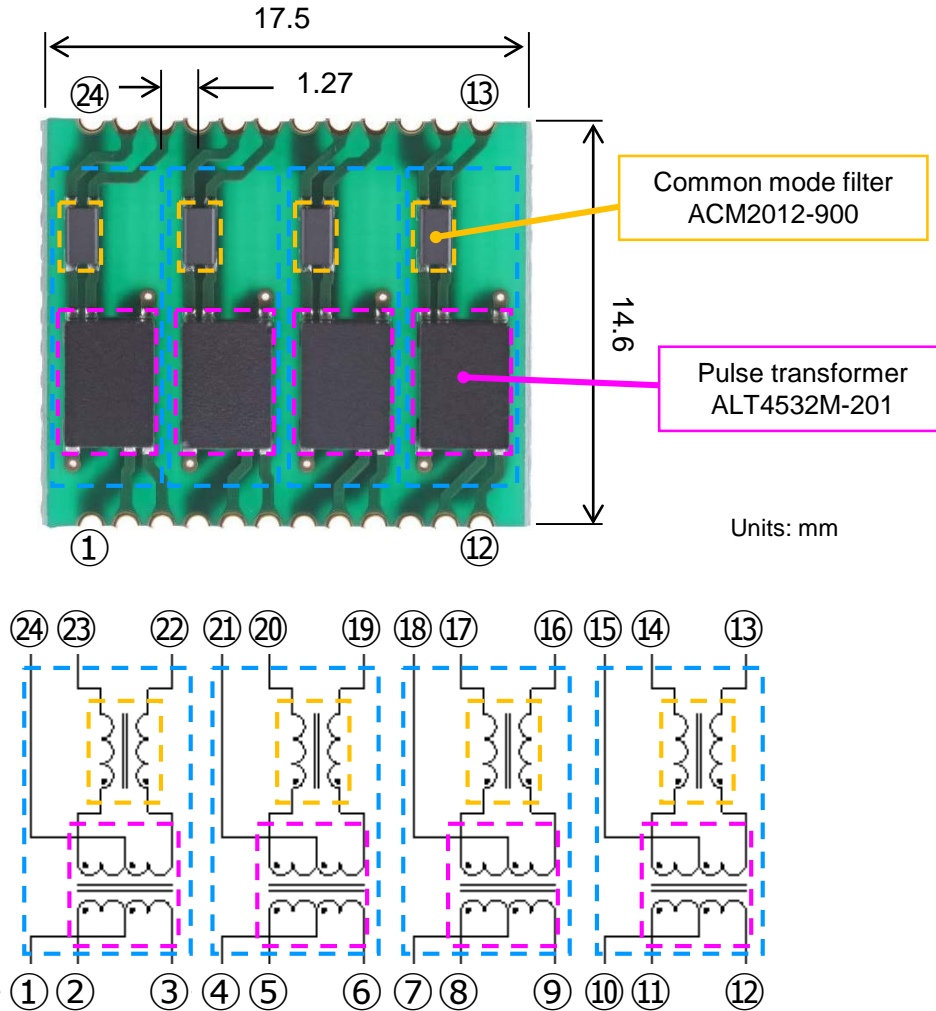
### Disclosure:

- Evaluation Board is provided for evaluation of TDK discrete solution purposes only. Customer needs to implement connections into its PCB lay out design for mass production.
- Evaluation Board will be replaced if a working problem is found, without failure analysis.

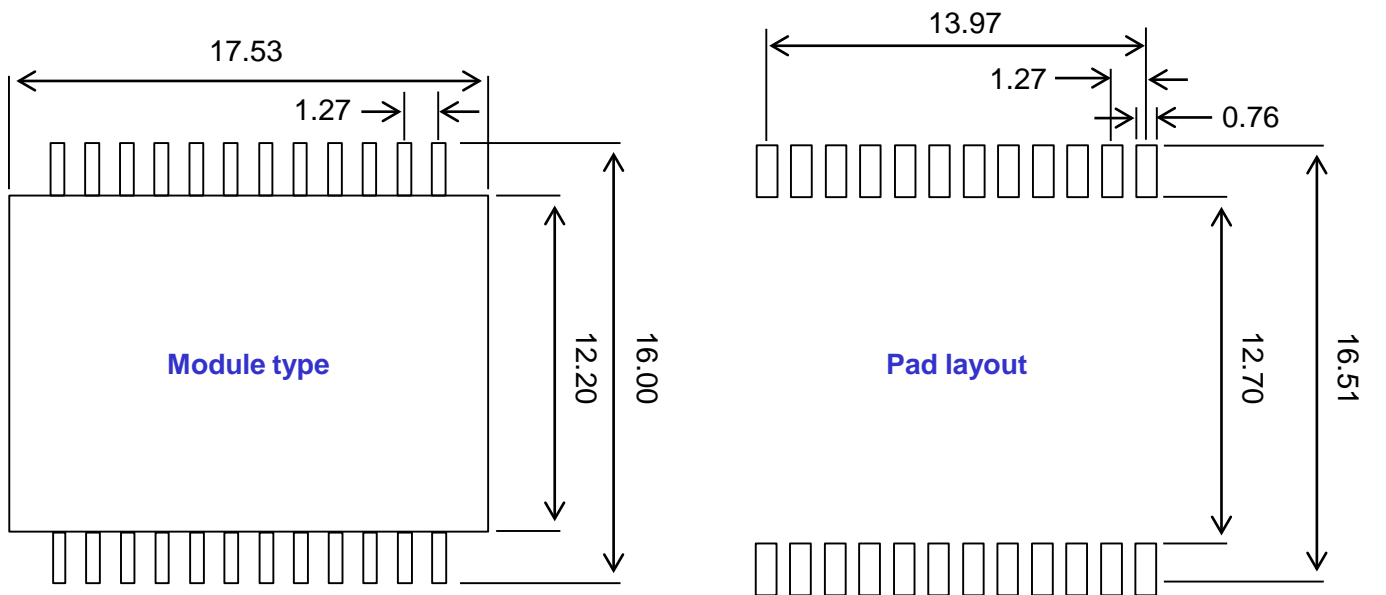
## Evaluation board – Ordering Part Number: ALT4532-EVA-01A

- Contains ALT4532M-201-T001 + ACM2012-900-2P-T002 solution for quick evaluation
- Allows SI/EMC test for our ALT4532 on the same land pattern as module

1000BASE-T Evaluation Board (Offers equivalent layout to Module type)



### Evaluation Board Electrical diagram and pin out



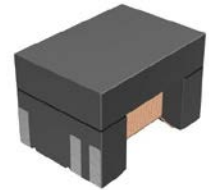
Units: mm

# Overview of ALT4532M-201-T001



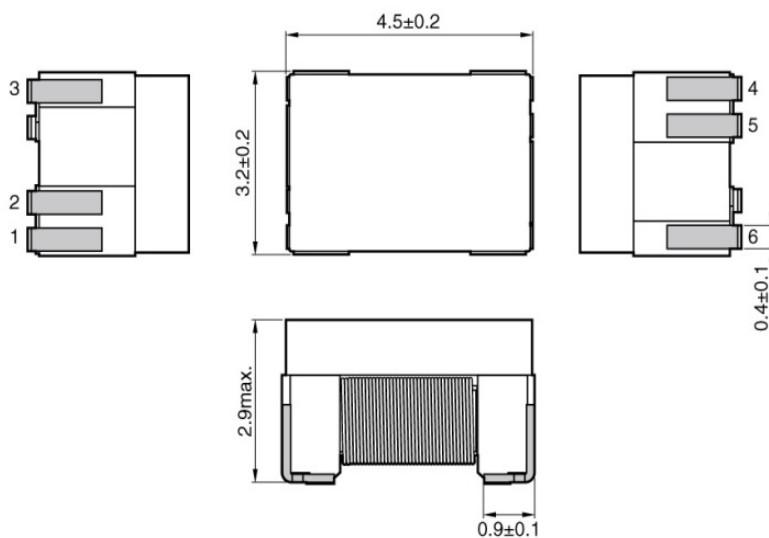
## FEATURES

- The ALT Series contains wound chip type pulse transformers developed for LANs.
- Compatible with 100BASE-TX and 1000BASE-T.
- High-quality product that uses auto winding.
- Conforms to the RoHS directive.

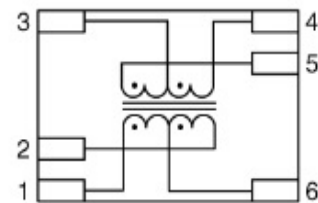


## GENERAL SPECIFICATIONS

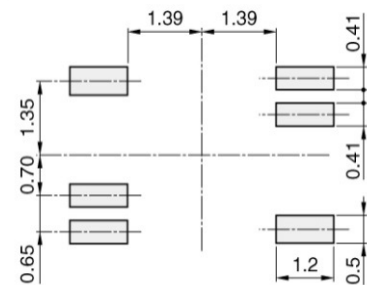
### SHAPE & DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED LAND PATTERN



Units: mm

## ELECTRICAL CHARACTERISTICS

### CHARACTERISTICS SPECIFICATION TABLE

Turns ratio ①⑥② : ⑤③④	Inductance [DC bias 8mA, 100kHz] ① - ② ⑤ - ④ ( $\mu$ H)min.	Insertion loss [0.1 to 100MHz] ①② - ⑤④ (dB)max.	Inter-winding stray capacitance [100kHz] (pF)max.	Part No.
1CT : 1CT	200	1.5	35	ALT4532M-201-T001

## OPERATING TEMPERATURE RANGE

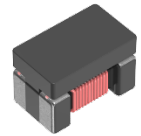
Part No.	Temperature range	
	Operating temperature*(°C)	Storage temperature**(°C)
ALT4532M-201-T001	-40 to +85	-40 to +85

\*Operating temperature range includes self-temperature rise.

\*\*The Storage temperature range is for after the circuit board is mounted.

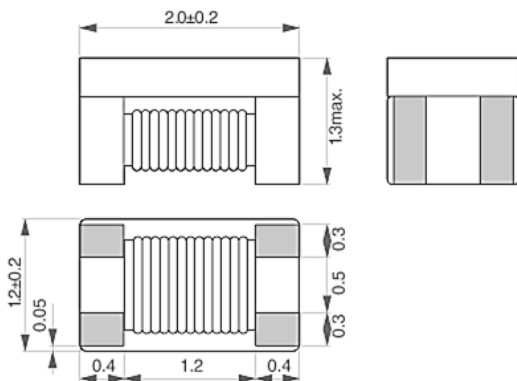
## FEATURES

- Downsized wound type chip common mode filter that maintains required common mode filter characteristics.
- Impedance for common mode noise can clear  $65\Omega$  [100MHz], and has excellent EMC suppression.
- Differential mode impedance is suppressed, so there is virtually no affect on high speed signals.
- Conforms to the RoHS Directive.

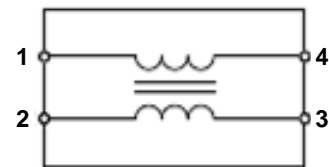


## GENERAL SPECIFICATIONS

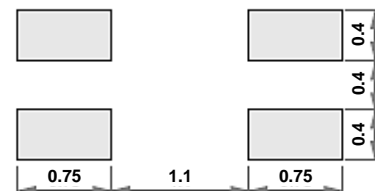
### SHAPE & DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED LAND PATTERN



Units: mm

## ELECTRICAL CHARACTERISTICS

### CHARACTERISTICS SPECIFICATION TABLE

Impedance [100MHz]	DC resistance [per 1 line]	Rated voltage	Insulation resistance	Rated current	Part No.
( $\Omega$ )	( $\Omega$ )max.	(V)max.	(M $\Omega$ )min.	(A)max.	
90 typ.	0.19	DC 50	10	0.4	ACM2012-900-2P-T002

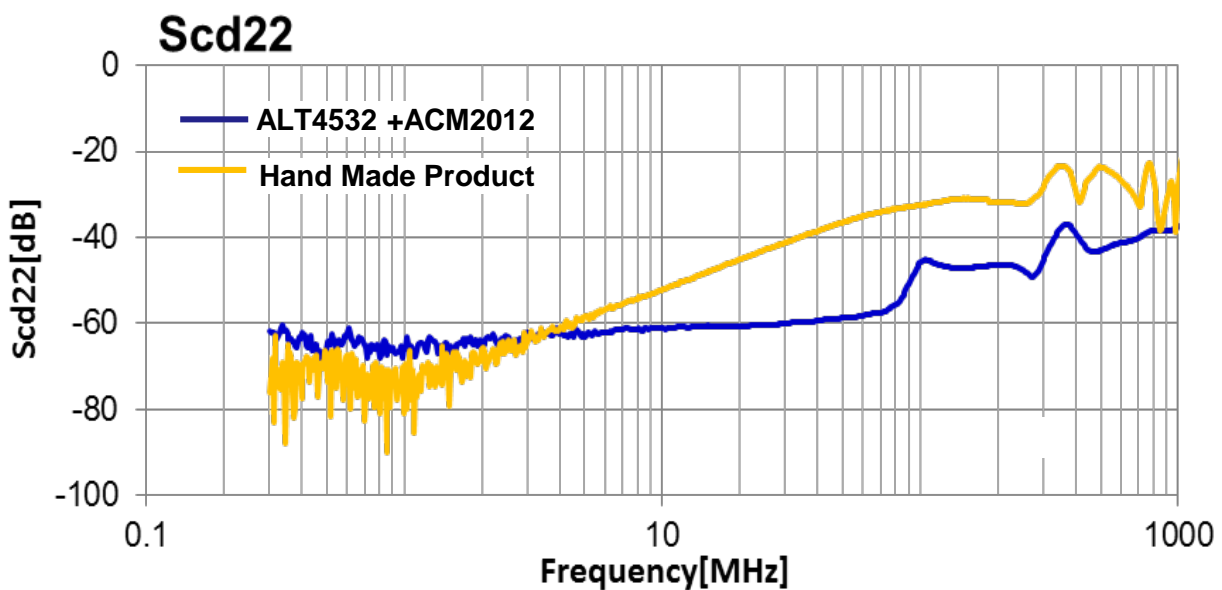
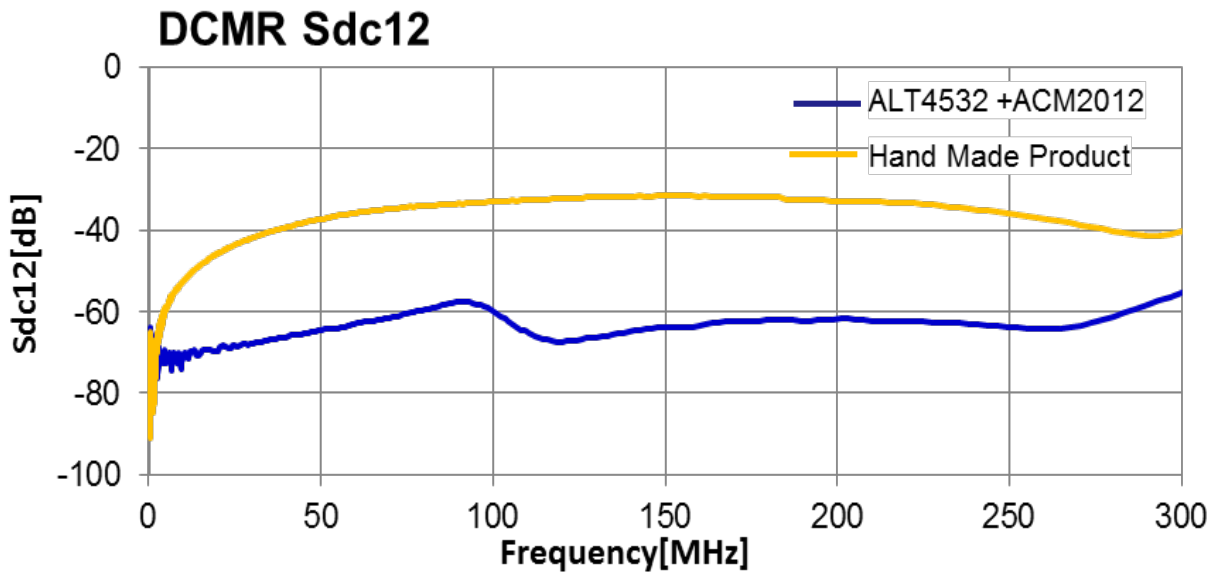
## OPERATING TEMPERATURE RANGE

Part No.	Temperature range	
	Operating temperature(°C)	Storage temperature*(°C)
ACM2012-900-2P-T002	-40 to +85	-40 to +85

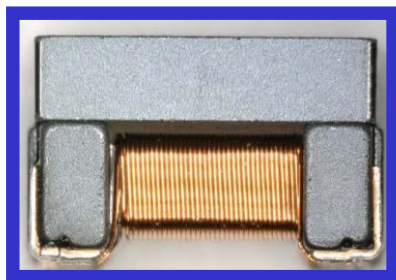
\*The Storage temperature range is for after the circuit board is mounted.

Comparison between TDK Solution and Conventional module for Balance Parameter

\*\* TDK solution offers excellent frequency performance.



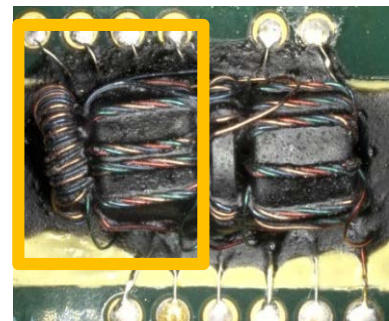
ALT4532



ACM2012



+



Full Automation

vs

Hand Made Product