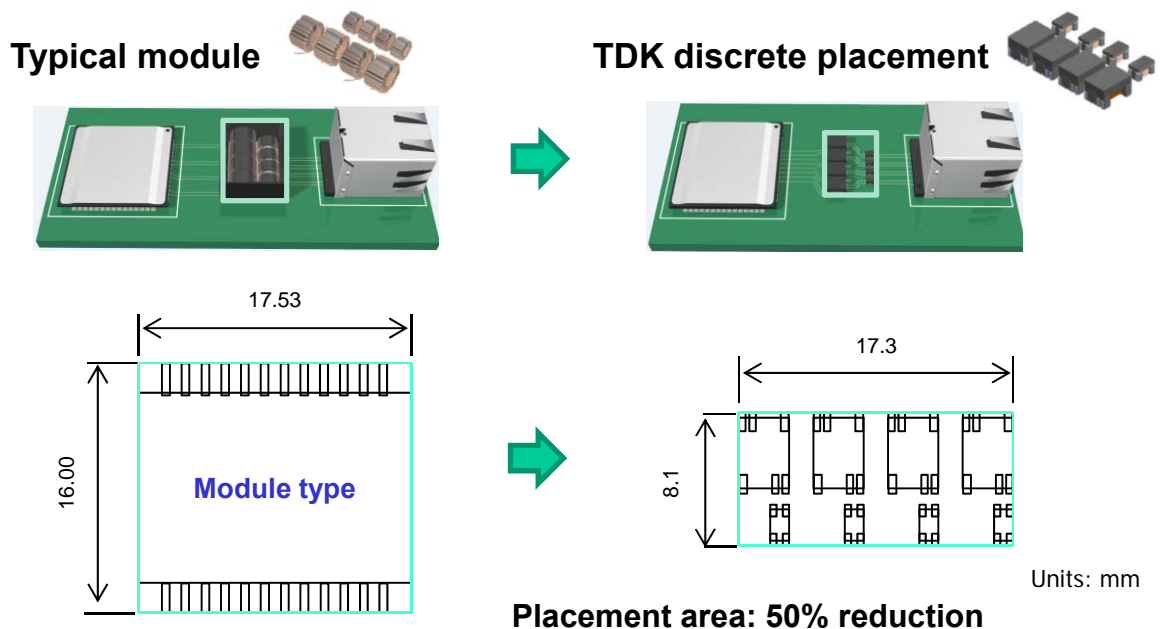


## LAN Magnetics Solution for 1000BASE-T

Evaluation Board TDK Part number: ALT4532-EVA-01

### Contents

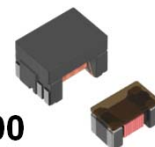
- PCB area reduction from typical module to discrete placement



- 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: ACM2012E-900-2P-T00



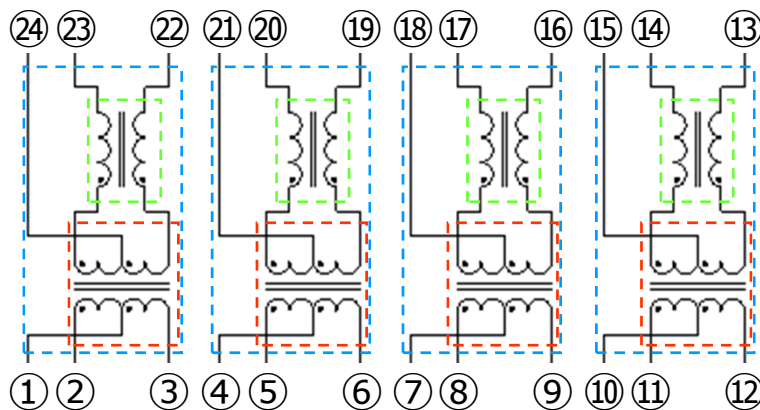
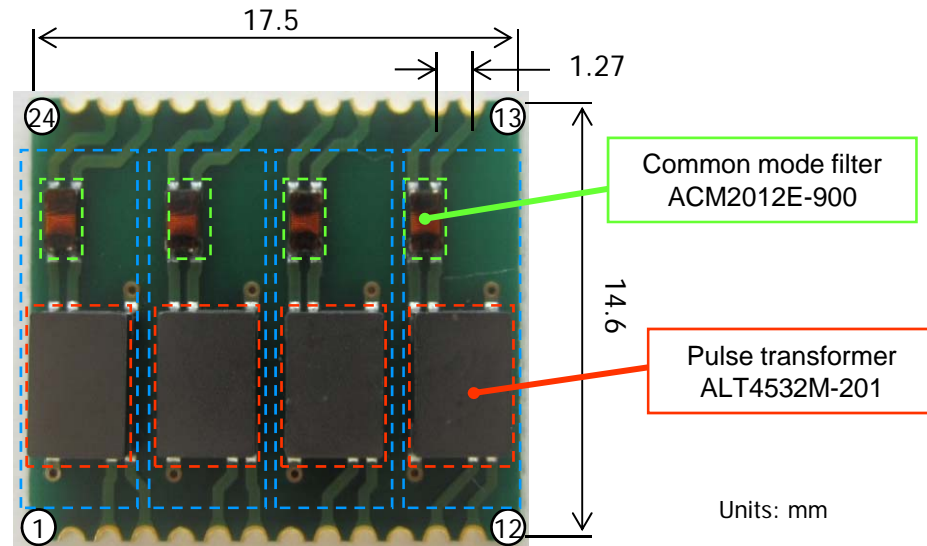
#### Disclosure:

- 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.

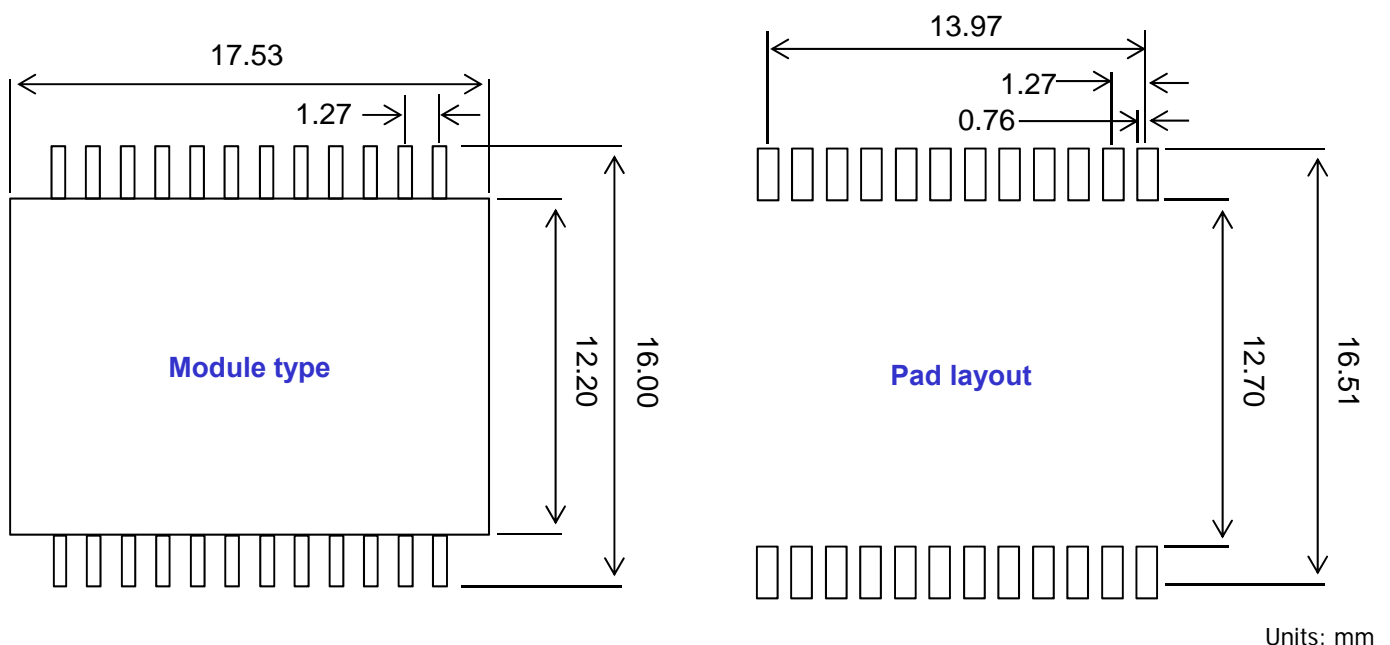
## Evaluation board – Ordering Part Number: ALT4532-EVA-01

- Contains ALT4532M-201-T001 + ACM2012E-900-2P-T00 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 pint out

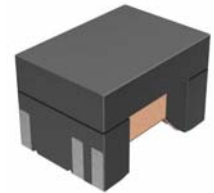


# Overview of ALT4532M-201-T001



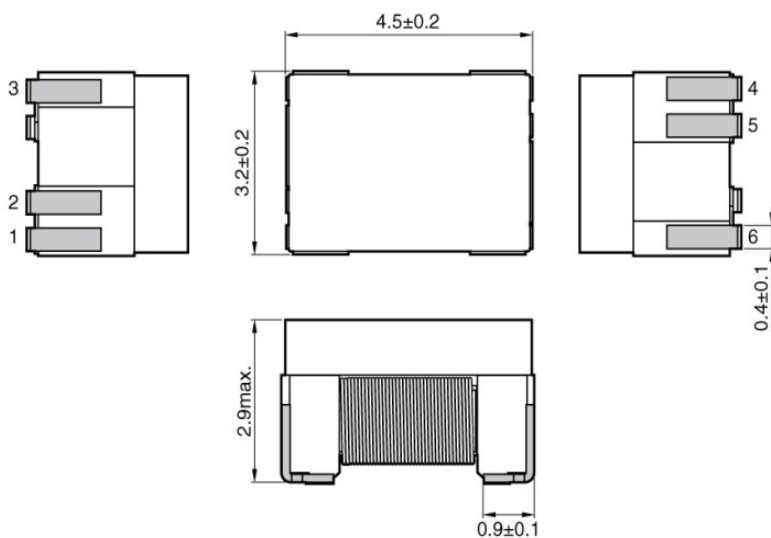
## FEATURES

- The ALT Series contains wound chip type pulse transformers developed for LANs.
- Compatible with 10BASE-T, 100BASE-TX, and 1000BASE-T.
- High-quality product that uses auto winding.
- Conforms to the RoHS Directive.



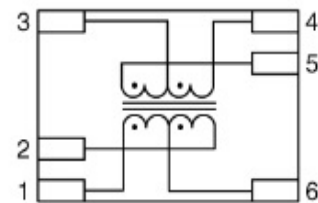
## GENERAL SPECIFICATIONS

### SHAPE & DIMENSIONS

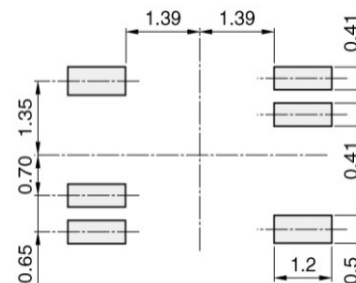


Dimensions in mm

### CIRCUIT DIAGRAM



### RECOMMENDED LAND PATTERN



## ELECTRICAL CHARACTERISTICS

### CHARACTERISTICS SPECIFICATION TABLE

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

## OPERATING TEMPERATURE RANGE

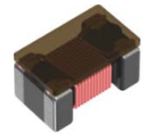
Type	Temperature range	
	Operating temperature* (°C)	Storage temperature** (°C)
ALT4532M-201	-40 to +85	-40 to +85

\* Operating temperature range includes self-temperature rise.

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

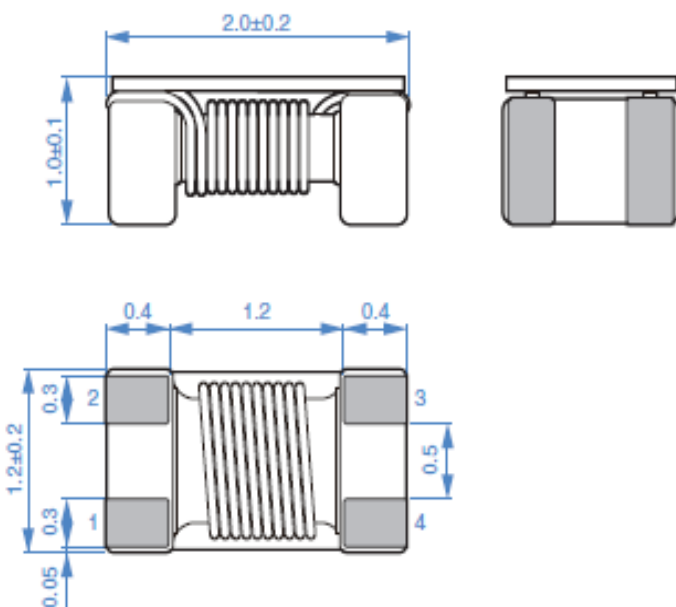
## FEATURES

- Downsized, low height wound type chip common mode filter that maintains required common mode filter characteristics.
- Impedance for common mode noise can clear 1000Ω [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.

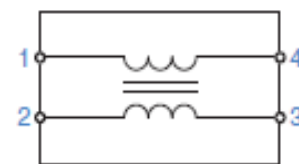


## GENERAL SPECIFICATIONS

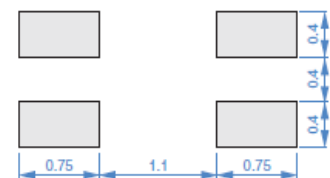
### SHAPE & DIMENSIONS



### CIRCUIT DIAGRAM



### RECOMMENDED LAND PATTERN



Dimensions in mm

## ELECTRICAL CHARACTERISTICS

### CHARACTERISTICS SPECIFICATION TABLE

Impedance [100MHz] (Ω)	DC resistance [1 line] (Ω)max.	Rated voltage (V)max.	Insulation resistance (MΩ)min.	Rated current (A)max.	Part No.
$90 \pm 25\%$	0.35	50	10	0.33	ACM2012E-900-2P-T00

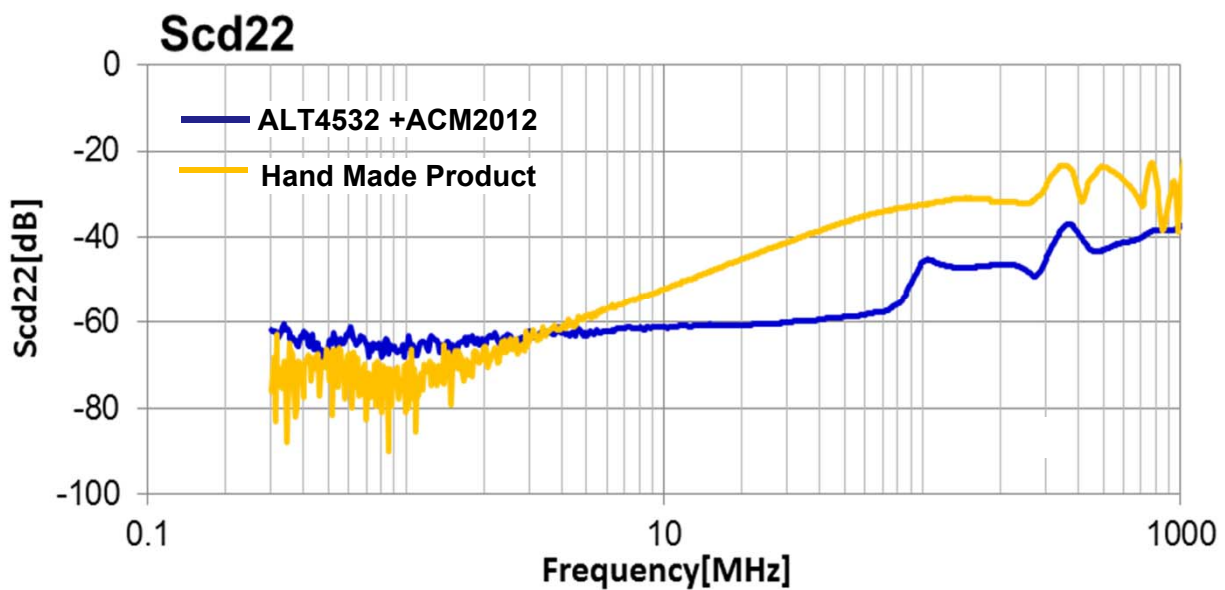
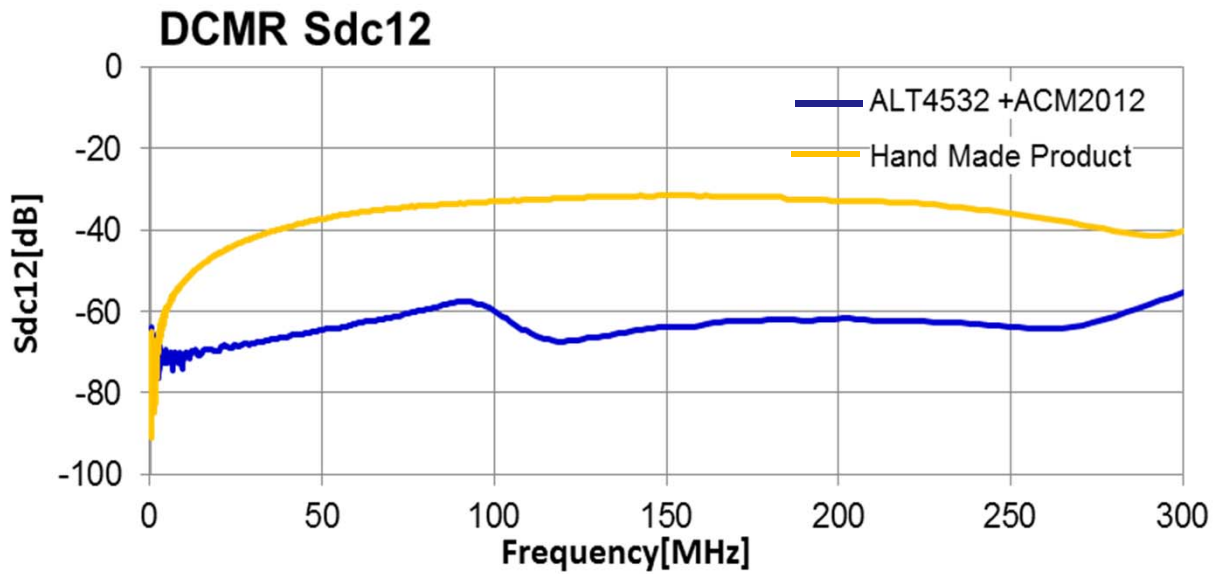
## OPERATING TEMPERATURE RANGE

Type	Temperature range	
	Operating temperature (°C)	Storage temperature* (°C)
ACM2012E-900-2P-T00	-40 to +85	-40 to +85

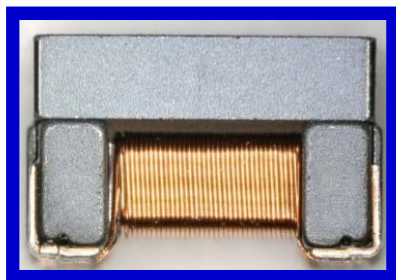
\* The Storage temperature range is for after the circuit board is mounted.

Comparison between TDK Solution and Conventional module for Balance Parameter

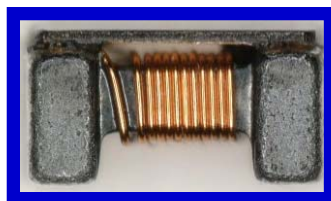
\*\* TDK solution offers excellent frequency performance.



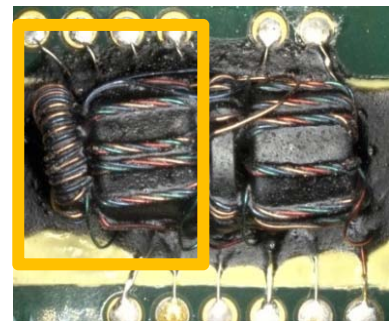
ALT4532



ACM2012



+



Full Automation

vs

Hand Made Product

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