Notice for TAIYO YUDEN products

Please read this notice before using the TAIYO YUDEN products.

⚠ REMINDERS

- Product information in this catalog is as of October 2015. All of the contents specified herein are subject to change without notice due to technical improvements, etc. Therefore, please check for the latest information carefully before practical application or usage of the Products.

  Please note that TAIYO YUDEN CO., LTD. shall not be responsible for any defects in products or equipment incorporating such products, which are caused under the conditions other than those specified in this catalog or individual specification.

- Please contact TAIYO YUDEN CO., LTD. for further details of product specifications as the individual specification is available.

- Please conduct validation and verification of products in actual condition of mounting and operating environment before commercial shipment of the equipment.

- All electronic components or functional modules listed in this catalog are developed, designed and intended for use in general electronics equipment.(for AV, office automation, household, office supply, information service, telecommunications, (such as mobile phone or PC) etc.). Before incorporating the components or devices into any equipment in the field such as transportation,(automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network (telephone exchange, base station) etc. which may have direct influence to harm or injure a human body, please contact TAIYO YUDEN CO., LTD. for more detail in advance.
  Do not incorporate the products into any equipment in fields such as aerospace, aviation, nuclear control, submarine system, military, etc. where higher safety and reliability are especially required.

  In addition, even electronic components or functional modules that are used for the general electronic equipment, if the equipment or the electric circuit require high safety or reliability function or performances, a sufficient reliability evaluation check for safety shall be performed before commercial shipment and moreover, due consideration to install a protective circuit is strongly recommended at customer's design stage.

- The contents of this catalog are applicable to the products which are purchased from our sales offices or distributors (so called "TAIYO YUDEN's official sales channel").
  It is only applicable to the products purchased from any of TAIYO YUDEN's official sales channel.

- Please note that TAIYO YUDEN CO., LTD. shall have no responsibility for any controversies or disputes that may occur in connection with a third party's intellectual property rights and other related rights arising from your usage of products in this catalog. TAIYO YUDEN CO., LTD. grants no license for such rights.

- Caution for export
  Certain items in this catalog may require specific procedures for export according to "Foreign Exchange and Foreign Trade Control Law" of Japan, "U.S. Export Administration Regulations", and other applicable regulations. Should you have any question or inquiry on this matter, please contact our sales staff.

MULTILAYER EMI SUPPRESSION FILTERS

REFLOW

■PARTS NUMBER

＊ Operating Temp.: −25〜+85℃

【T Series】

F	K	2	1	2	5	T	△	2	5	6	A	L	—	T	△
①		②				③	④				⑤	⑥	⑦		⑧

△＝Blank space

①Series name

Code	Series name
FK	Multilayer EMI suppression filter

②Dimensions (L × W)

Code	Type (inch)	Dimensions (L × W) [mm]
2125	2125 (0805)	2.0 × 1.25

③Equivalence circuit

Code	Equivalence circuit
T	T type

④Cutoff frequency

Code (example)	Cutoff frequency
△186	18 MHz
△256	25 MHz

⑤Characteristics

Code (example)	Characteristics
A	Sharp

⑥Rated voltage

Code	Rated voltage [V]
L	10

⑦Packaging

Code	Packaging
—T	Taping

⑧Internal code

Code	Internal code
△	Standard

【TZ Series】

F	K	2	1	2	5	T	Z	2	0	1	C	8	5	0	T	△
①		②				③	④				⑤				⑥	⑦

△＝Blank space

①Series name

Code	Series name
FK	Multilayer EMI suppression filter

②Dimensions (L × W)

Code	Type (inch)	Dimensions (L × W) [mm]
2125	2125 (0805)	2.0 × 1.25

③Equivalence circuit

Code	Equivalence circuit
T	T type

④Nominal impedance

Code	Nominal impedance [100MHz]
Z700	70Ω
Z101	100Ω
Z201	200Ω

⑤Nominal capacitance

Code	Nominal capacitance [1MHz]
C170	17pF
C500	50pF
C850	85pF

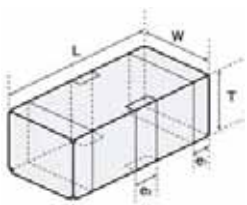
⑥Packaging

Code	Packaging
T	Taping

⑦Internal code

Code	Internal code
△	Standard

■STANDARD EXTERNAL DIMENSIONS / STANDARD QUANTITY



L	W	T	e^1	e^2	Standard quantity [pcs] Embossed tape
2.0±0.2 (0.079±0.008)	1.25±0.2 (0.049±0.008)	1.0±0.2 (0.039±0.008)	0.3±0.2 (0.012±0.008)	0.4±0.2 (0.016±0.008)	3000

Unit: mm (inch)

▶ This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our specification. For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our Web site (http://www.ty-top.com/) .

■PARTS NUMBER

●T Series

Parts number	EHS	Cut off frequency [MHz]	Characteristic								DC resistance [Ω] (max.)	Rated voltage [V] (DC)	Rated current [mA] (DC)	Insulation resistance [MΩ]
			insertion loss [1MHz]	attnuation										
				50MHz	100MHz	200MHz	350MHz	500MHz	600MHz	800MHz				
FK2125T 186AL-T	RoHS	18±3.6	≦1.0dB	≧20dB	≧20dB	–	–	≧20dB	–	–	2	10	100	≧30
FK2125T 256AL-T	RoHS	25±5	≦1.0dB	≧15dB	≧20dB	–	–	≧20dB	–	–	2	10	100	≧30
FK2125T 406AL-T	RoHS	40±10	≦1.0dB	–	≧15dB	≧20dB	–	≧20dB	–	–	2	10	100	≧30
FK2125T 107AL-T	RoHS	100±20	≦1.0dB	–	–	≧20dB	–	≧20dB	–	–	3	10	100	≧30
FK2125T 167AL-T	RoHS	160±30	≦1.0dB	–	–	–	≧20dB	≧20dB	–	–	2	10	100	≧30
FK2125T 207AL-T	RoHS	200±40	≦1.0dB	–	–	–	≧20dB	≧20dB	–	–	2	10	100	≧30
FK2125T 407AL-T	RoHS	400±80	≦1.0dB	–	–	–	–	–	≧20dB	≧20dB	2	10	100	≧30

●TZ Series

Parts number	EHS	Impedance (terminal 1-3) [100MHz]	Capacitance (terminal 1-2) [1MHz]	DC resistance [Ω] (max.)	Rated voltage [V] (DC)	Rated current [mA] (DC)	Insulation resistance [MΩ]
FK2125TZ700C170T	RoHS	70Ω±30%	17pF±20%	2	10	100	≧30
FK2125TZ700C500T	RoHS	70Ω±30%	50pF±20%	2	10	100	≧30
FK2125TZ700C850T	RoHS	70Ω±30%	85pF±20%	2	10	100	≧30
FK2125TZ101C170T	RoHS	100Ω±30%	17pF±20%	2	10	100	≧30
FK2125TZ101C500T	RoHS	100Ω±30%	50pF±20%	2	10	100	≧30
FK2125TZ101C850T	RoHS	100Ω±30%	85pF±20%	2	10	100	≧30
FK2125TZ201C850T	RoHS	200Ω±30%	85pF±20%	2	10	100	≧30

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■PACKAGING

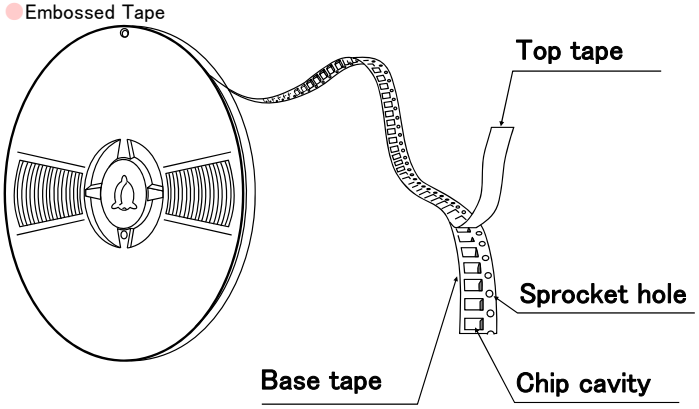
①Minimum Quantity

●Taped package

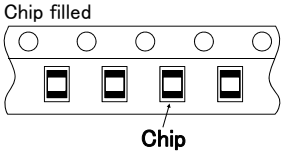
Type	Thickness mm(inch)	Standard Quantity [pcs]
		Embossed tape
FK 2125(0805)	1.0(0.039)	3000

②Tape material

●Embossed Tape

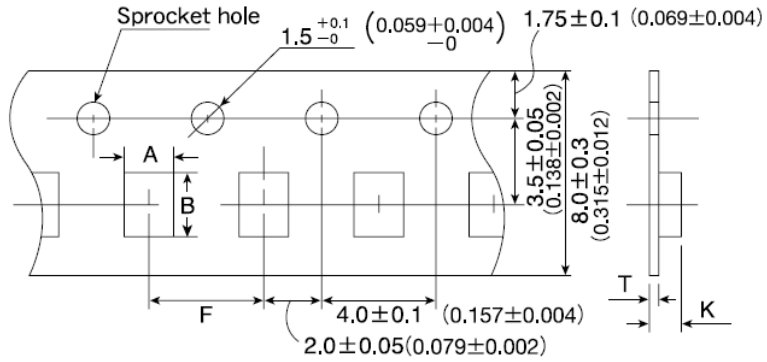


Chip filled



③Taping dimensions

●Embossed tape 8mm wide

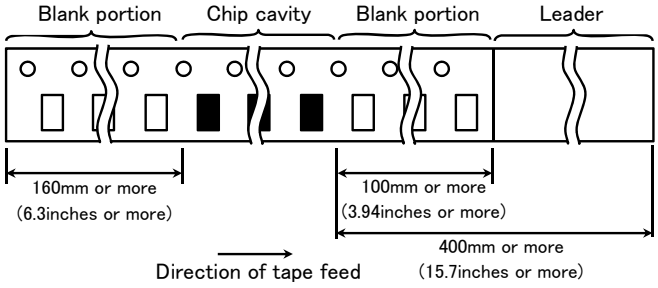


Unit : mm(inch)

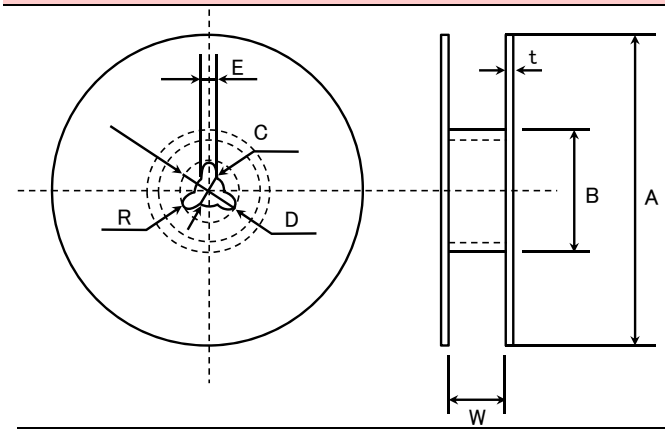
Type	Chip cavity		Insertion pitch	Tape thickness	
	A	B	F	K	T
FK 2125(0805)	1.5±0.2 (0.059±0.008)	2.3±0.2 (0.091±0.008)	4.0±0.1 (0.157±0.004)	2.0 max. (0.079 max.)	0.3 max. (0.012 max.)

Unit : mm(inch)

④Leader and Blank portion



⑤Reel size

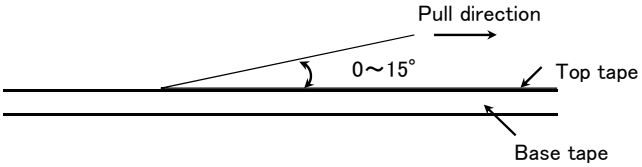


A	B	C	D	E	R	t	W
ϕ178±2.0	ϕ50min.	ϕ13.0±0.2	ϕ21.0±0.8	2.0±0.5	1.0	2.5max.	10±1.5

Unit : mm

⑥Top tape strength

The top tape requires a peel;-off force of 0.1～0.7N in the direction of the arrow as illustrated below.



MULTILAYER EMI SUPPRESSION FILTERS

■RELIABILITY DATA

1. Operating Temperature Range	
Specified Value	−25～＋85℃

2. Storage Temperature Range	
Specified Value	−25～＋85℃

3. Rated Voltage	
Specified Value	10V DC

4. Rated Current	
Specified Value	100mA DC

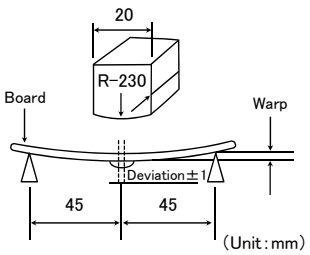
5. Cutoff frequency (T Series)	
Specified Value	18MHz±3.6MHz, 25MHz±5MHz, 40MHz±10MHz, 100MHz±20MHz, 160MHz±30MHz, 200MHz±40MHz, 400MHz±80MHz
Test Methods and Remarks	Measuring equipment : 8753D (or its equivalent) Measuring source : 0dBm Input-Output impedance : 50Ω

6. Impedance (TZ Series)	
Specified Value	70Ω±30%, 100Ω±30%, 200Ω±30%
Test Methods and Remarks	Measuring frequency : 100MHz Measuring equipment : 4291A (or its equivalent) Measuring jig : 16192A Measuring source : −20dBm

7. Capacitance (TZ Series)	
Specified Value	17pF±20%, 50pF±20%, 85pF±20%
Test Methods and Remarks	Measuring equipment : 4194A (or its equivalent) Measuring voltage : 0.5V Measuring frequency : 1MHz Capacitance measurement between Terminals 1 and 2.

8. DC Resistance	
Specified Value	2Ω max., 3Ω max. (FK2125T107AL)
Test Methods and Remarks	Conduct measurement between Terminals 1 and 3.

9. Insulation Resistance	
Specified Value	30MΩ min.
Test Methods and Remarks	Conduct measurement between Terminals 1 and 2. Applied voltage : 10VDC

10. Resistance to Flexure of Substrate	
Specified Value	No mechanical damage.
Test Methods and Remarks	Warp : 2mm Testing board : glass epoxy-resin substrate Thickness : 0.8mm 

11. Solderability	
Specified Value	At least 75% of terminal electrode is covered by new solder.
Test Methods and Remarks	Solder temperature : 230±5℃ Duration : 4±1 sec. Preheating temperature : 150 to 180℃ Preheating time : 2 to 3 min. Flux : Immersion into methanol solution with colophony for 3 to 5 sec.

12. Resistance to Soldering	
Specified Value	No significant abnormality in appearance.
Test Methods and Remarks	Solder temperature : 260±5℃ Duration : 10±0.5 sec. Preheating temperature : 150 to 180℃ Preheating time : 2 to 3 min. Flux : Immersion into methanol solution with colophony for 3 to 5 sec.

13. Thermal Shock	
Specified Value	No mechanical damage. Insulation resistance (between 1 and 2) : 20MΩ min. DC resistance (between 1 and 3) : 2Ω max. : 3Ω max. (FK2125T107AL)
Test Methods and Remarks	Conditions for 1 cycle

Step	Temperature (℃)	Duration (min)
1	Minimum operating temperature +0/−3	30±3
2	Room temperature	2 to 3
3	Maximum operating temperature +3/−0	30±3
4	Room temperature	2 to 3

Number of cycles : 5
Recovery : 2 to 3 hrs of recovery under the standard condition after the test.

14. Damp Heat steady state	
Specified Value	No mechanical damage. Insulation resistance (between 1 and 2) : 20MΩ min. DC resistance (between 1 and 3) : 2Ω max. : 3Ω max. (FK2125T107AL)
Test Methods and Remarks	Temperature : 40±2℃ Humidity : 90 to 95%RH Duration : 500±12 hrs Recovery : 2 to 3 hrs of recovery under the standard condition after the removal from test chamber.

15. Loading under Damp Heat	
Specified Value	No mechanical damage. Insulation resistance (between 1 and 2) : 20MΩ min. DC resistance (between 1 and 3) : 2Ω max. : 3Ω max. (FK2125T107AL)
Test Methods and Remarks	Temperature : 40±2℃ Humidity : 90 to 95%RH Applied voltage : Rated voltage (between 1 and 2) Applied current : Rated current (between 1 and 3) Duration : 500±12 hrs Recovery : 2 to 3 hrs of recovery under the standard condition after the removal from test chamber.

16. Loading at High Temperature	
Specified Value	No mechanical damage. Insulation resistance (between 1 and 2) : 20MΩ min. DC resistance (between 1 and 3) : 2Ω max. : 3Ω max. (FK2125T107AL)
Test Methods and Remarks	Temperature : 85±2℃ Applied voltage : Rated voltage (between 1 and 2) Applied current : Rated current (between 1 and 3) Duration : 500±12 hrs Recovery : 2 to 3 hrs of recovery under the standard condition after the removal from test chamber.

Note on standard condition :

"standard condition" referred to herein is defined as follows :

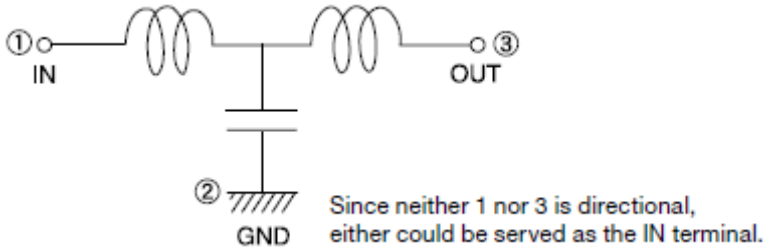
5 to 35℃ of temperature, 45 to 85% relative humidity and 86 to 106kPa of air pressure.

When there are questions concerning measurement results :

In order to provide correlation data, the test shall be conducted under condition of 20±2℃ of temperature, 60 to 70% relative humidity and 86 to 106kPa of air pressure.

Unless otherwise specified, all the tests are conducted under the "standard condition."

※Circuit diagram



Since neither 1 nor 3 is directional,
either could be served as the IN terminal.