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 2016. 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 use of our products.

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

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

- Please conduct validation and verification of our products in actual condition of mounting and operating environment before using our products.

- The products listed in this catalog are intended for use in general electronic equipment (e.g., AV equipment, OA equipment, home electric appliances, office equipment, information and communication equipment including, without limitation, mobile phone, and PC). Please be sure to contact TAIYO YUDEN for further information before using the products for any equipment which may directly cause loss of human life or bodily injury (e.g., transportation equipment including, without limitation, automotive powertrain control system, train control system, and ship control system, traffic signal equipment, disaster prevention equipment, medical equipment, highly public information network equipment including, without limitation, telephone exchange, and base station).

  Please do not incorporate our products into any equipment requiring high levels of safety and/or reliability (e.g., aerospace equipment, aviation equipment, nuclear control equipment, undersea equipment, military equipment).

  When our products are used even for high safety and/or reliability-required devices or circuits of general electronic equipment, it is strongly recommended to perform a thorough safety evaluation prior to use of our products and to install a protection circuit as necessary.

  Please note that unless you obtain prior written consent of TAIYO YUDEN, TAIYO YUDEN shall not be in any way responsible for any damages incurred by you or third parties arising from use of the products listed in this catalog for any equipment requiring inquiry to TAIYO YUDEN or prohibited for use by TAIYO YUDEN as described above.

- Please note that TAIYO YUDEN 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 use of our products. TAIYO YUDEN grants no license for such rights.

- Please note that unless otherwise agreed in writing, the scope of warranty for our products is limited to the delivered our products themselves and TAIYO YUDEN shall not be in any way responsible for any damages resulting from a fault or defect in our products.

- The contents of this catalog are applicable to our products which are purchased from our sales offices or authorized distributors (hereinafter "TAIYO YUDEN's official sales channel"). Please note that the contents of this catalog are not applicable to our products purchased from any seller other than TAIYO YUDEN's official sales channel.

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

MULTILAYER EMI SUPPRESSION FILTERS

REFLOW

■PARTS NUMBER

＊ Operating Temp.: −25〜+85℃

【T Series】

FK	2125	T	△256	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】

FK	2125	T	Z201	C850	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

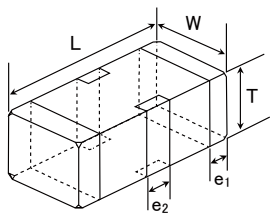
⑥Packaging

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 website (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

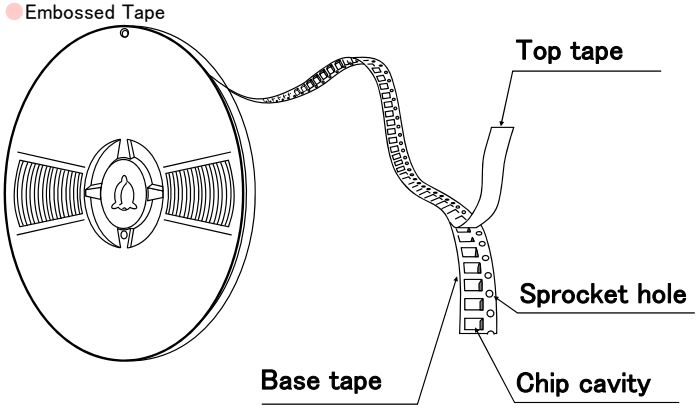
①Minimum Quantity

●Taped package

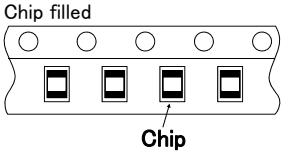
Type	Thickness mm(inch)	Standard Quantity [pcs]
		Embossed tape
FK 2125(0805)	1.0(0.039)	3000

②Tape material

●Embossed Tape



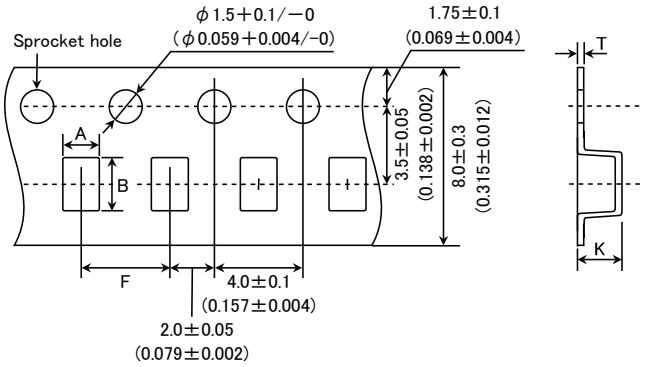
Chip filled



③Taping dimensions

●Embossed tape 8mm wide

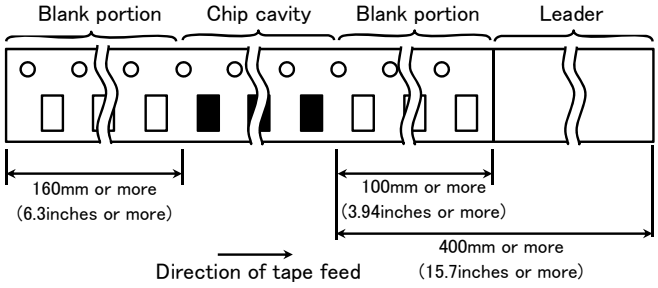
Unit : mm(inch)



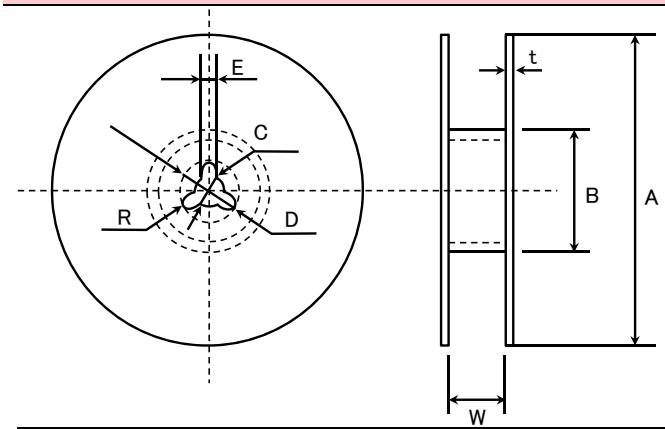
Type	Chip cavity		Insertion pitch	Tape thickness	
	A	B	F	K	T
FK 2125(0805)	1.5±0.2 (0.059±0.008)	2.3±0.2 (0.091±0.008)	4.0±0.1 (0.157±0.004)	2.0 max. (0.079 max.)	0.3 max. (0.012 max.)

Unit : mm(inch)

④Leader and Blank portion



⑤Reel size

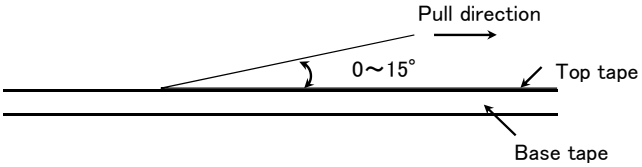


A	B	C	D	E	R	t	W
ϕ178±2.0	ϕ50min.	ϕ13.0±0.2	ϕ21.0±0.8	2.0±0.5	1.0	2.5max.	10±1.5

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

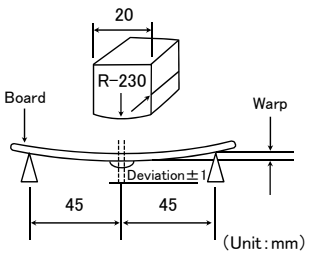
5. Cutoff frequency (T Series)	
Specified Value	18MHz±3.6MHz, 25MHz±5MHz, 40MHz±10MHz, 100MHz±20MHz, 160MHz±30MHz, 200MHz±40MHz, 400MHz±80MHz
Test Methods and Remarks	Measuring equipment : 8753D (or its equivalent) Measuring source : 0dBm Input-Output impedance : 50Ω

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 :

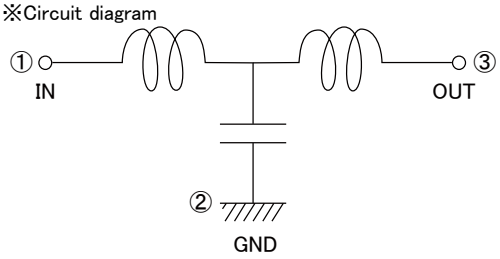
5 to 35℃ of temperature, 45 to 85% relative humidity and 86 to 106kPa of air pressure.

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.