

TCF 03025 U 120 02 A Engineering Specification

1.Scope

TCF 03025 U series is a thin film common mode filter designed to suppress common mode noise for high speed differential data lines, such as Display Port, e-SATA, USB3.0, HDMI, MIPI, and MHL.

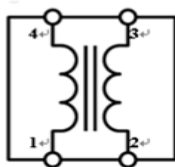
2.Explanation of Part Number

TCF 03025 U 120 02 A □□
 (1) (2) (3) (4) (5) (6) (7)

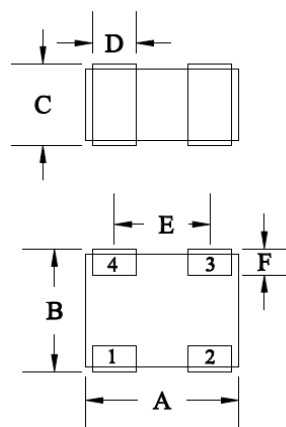
1. Product Type : TCF= Thin Film Common Mode Filter
2. EIA Dimension Code
3. Speed Identification Code
4. Impedance(at 100MHz): 120=12Ω
5. Line Code: 02= 2 lines
6. Specialized Specification Code
7. Control code

3.Circuit Diagram & Dimension

Circuit Diagram :



Dimension :



Unit: mm

Series	A	B	C	D	E	F
TCF 03025	0.88 ^{+0.05} ₋₀	0.65±0.05	0.47±0.05	0.25±0.15	0.5±0.1	0.15±0.1

4. Specifications

4.1. ABSOLUTE MAXIMUM RATINGS

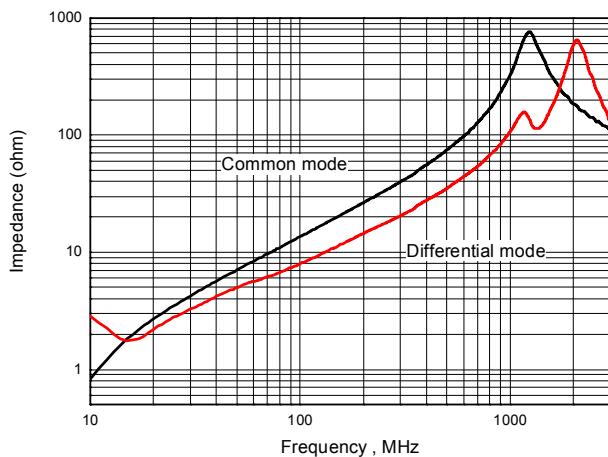
PARAMETER	PARAMETER	RATING	UNITS
Rated Voltage	V_{DC}	5	V
Rated Current	I_{DC}	100	mA
Operating Temperature		-25 ~ 85	°C
Lead Soldering Temperature	T_{SOL}	260 (10 sec.)	°C

4.2. ELECTRICAL CHARACTERISTICS

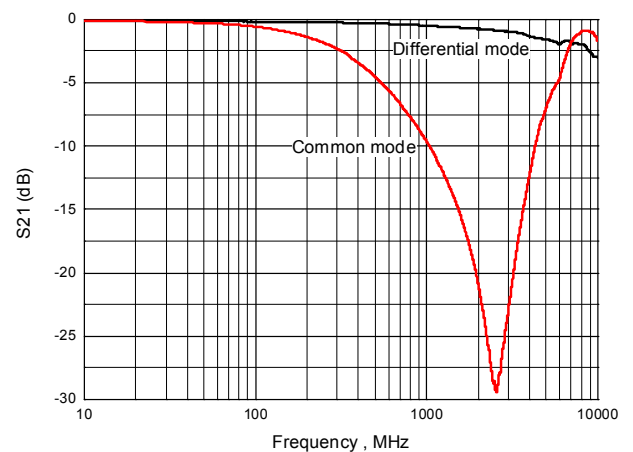
PARAMETER	MIN	TYP	MAX	UNITS
Common Mode Impedance (at 100 MHz)	7	12	17	Ω
Cut-off Frequency		8.5		GHz
DC Resistance			2	Ω
Insulation Resistance	10			M Ω

4.3. TYPICAL CHARACTERISTICS

Impedance vs Frequency Characteristics*



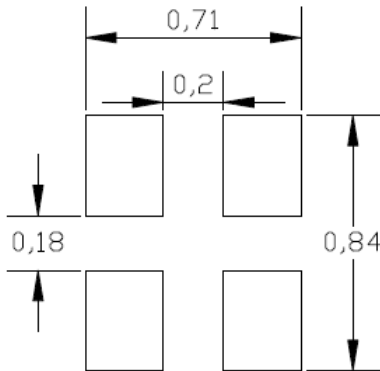
Insertion Loss vs Frequency Characteristics**



*Test Instrument: HP4291A Impedance/Material Analyzer

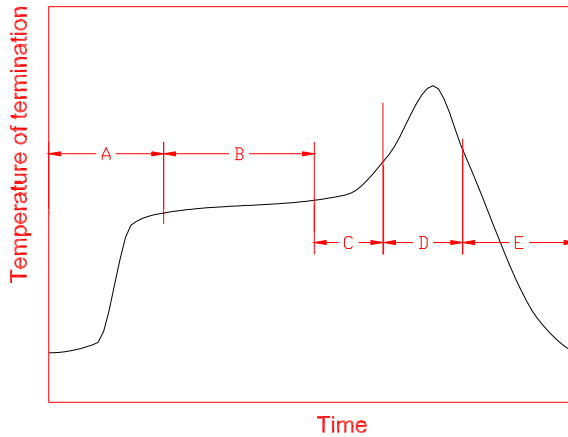
**Test Instrument: Agilent E5071C ENA-L Network Analyzer

5. LAND LAYOUT



Dimensions in mm

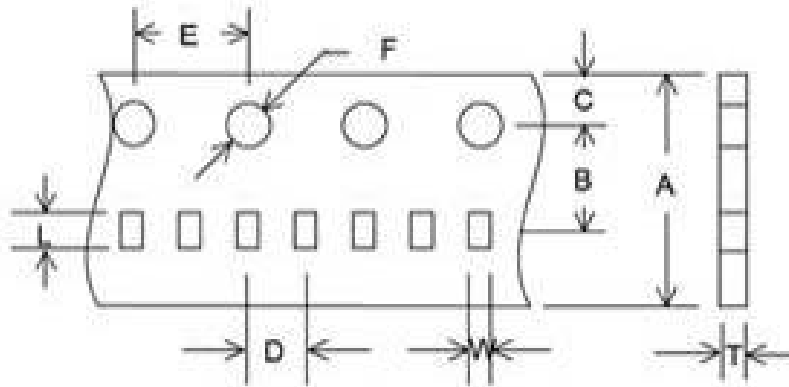
6. Recommendable reflow soldering



A	1 st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 nd rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	if 220°C if 230°C if 240°C if 250°C if 260°C	50s~60s 40s~50s 30s~40s 20s~40s 20s~40s
E	Regular cooling	200°C to 100°C	1°C/s ~ 4°C/s

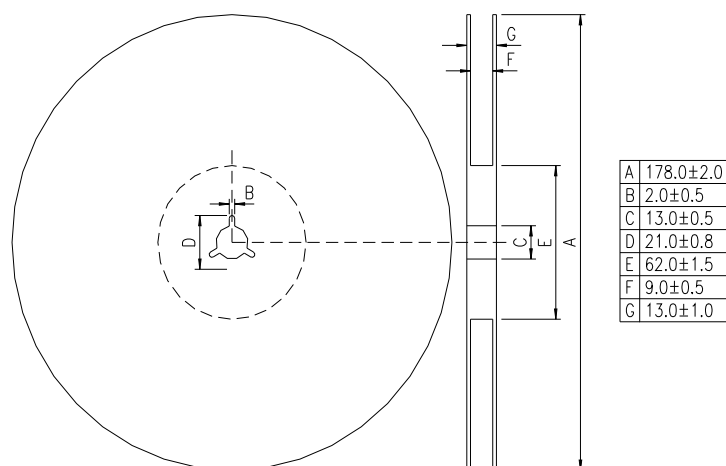
- According to J-STD-020C

7. Tape and reel specifications



A	8±0.1
B	3.5±0.05
C	1.75±0.05
D	2±0.05
E	4±0.1
F	1.55±0.05
L	1.04±0.03
W	0.78±0.03
T	0.60±0.03

Unit: mm



A	178.0±2.0
B	2.0±0.5
C	13.0±0.5
D	21.0±0.8
E	62.0±1.5
F	9.0±0.5
G	13.0±1.0

*Standard quantity : 10000 pcs/Reel