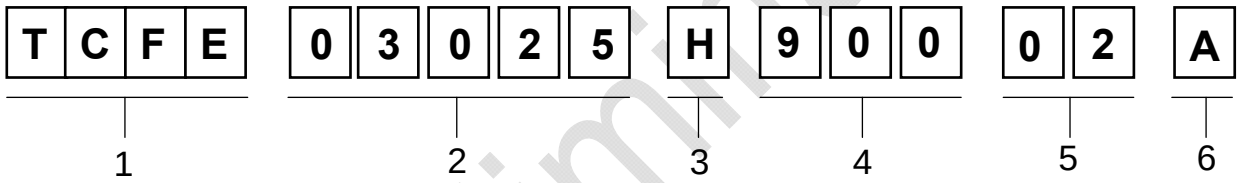
TCFE 03025 H 900 02 A Engineering Specification

1.Scope

TCFE 03025 H series is a thin film common mode filter with additional ESD protection. It is designed to suppress common mode noise for high speed differential data lines, such as USB 2.0, LVDS, DVI, HDMI, MIPI & MHL. The ESD protection of **IEC61000-4-2 level4** in high speed differential data lines is also provided.

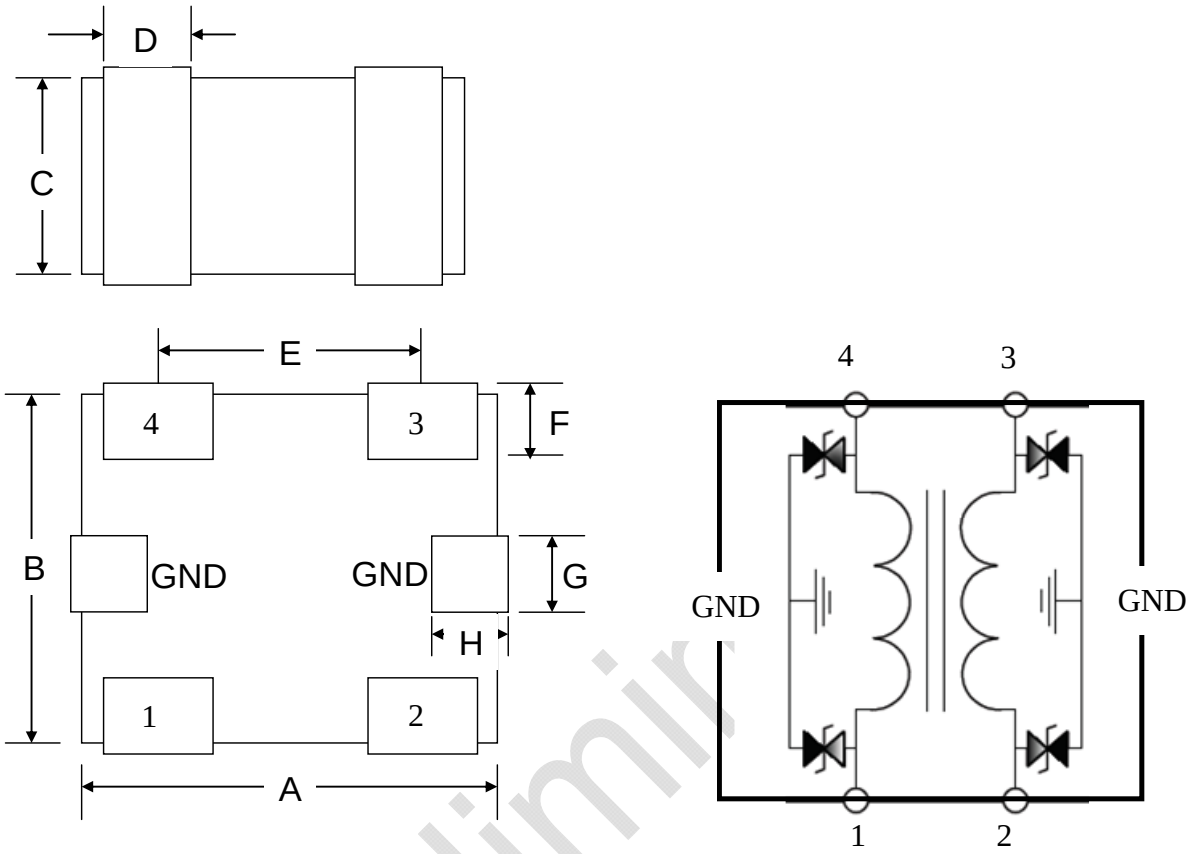
These differential interfaces can be used in Mobile phone, Notebooks, Tablet PC & Digital Camera, etc.

2.Explanation of Part Number



1：Product Type：TCFE= Thin Film Common Mode Filter ESD
2：EIA Dimension Code
3：Speed Identification Code: H= High Speed
4：Impedance(at 100MHz): 900= 90Ω
5：Line Code: 02= 2 lines
6：Specialized Specification Code

3.Circuit Diagram & Dimension



Series	A	B	C	D	E	F	G	H
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	0.15±0.5	0.15±0.3

4.Specifications

4.1. ABSOLUTE MAXIMUM RATINGS

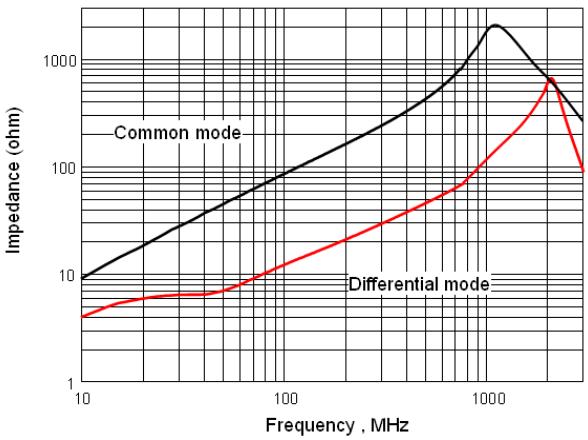
PARAMETER	PARAMETER	RATING	UNITS
Rated Voltage	V_{DC}	5	V
Rated Current	I_{DC}	100	mA
Lead Soldering Temperature	T_{SOL}	260 (10 sec.)	°C

4.2. ELECTRICAL CHARACTERISTICS

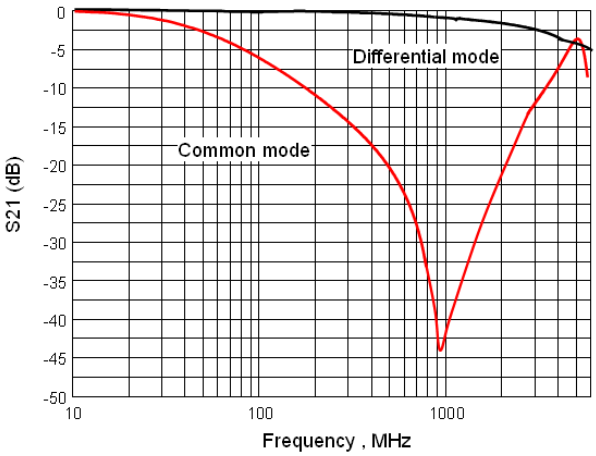
PARAMETER	MIN	TYP	MAX	UNITS
Common Mode Impedance (at 100 MHz)	65	90	112	Ω
Cut-off Frequency		4		GHz
DC Resistance		4		Ω
Insulation Resistance	10			MΩ
Capacitance (at 1MHz, any pin to ground)		0.6	0.8	pF
Clamping Voltage (measured at 60ns after ESD event)		18	50	V
Leakage Current (at 5V, any pin to ground)			1	μA

4.3. TYPICAL CHARACTERISTICS

Impedance vs Frequency Characteristics*



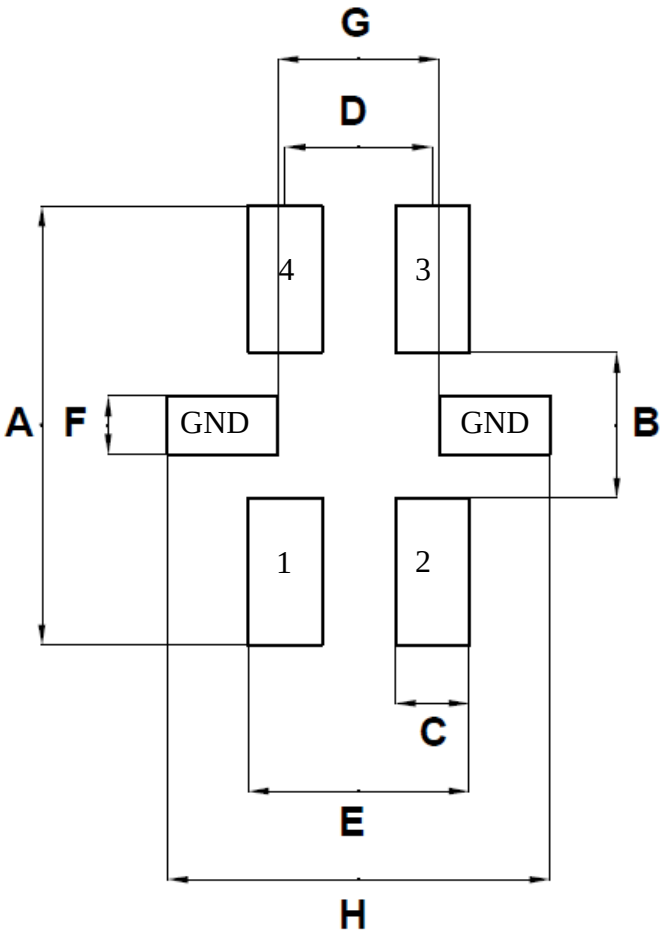
Insertion Loss vs Frequency Characteristics**



*Test Instrument: HP4291A Impedance/Material Analyzer

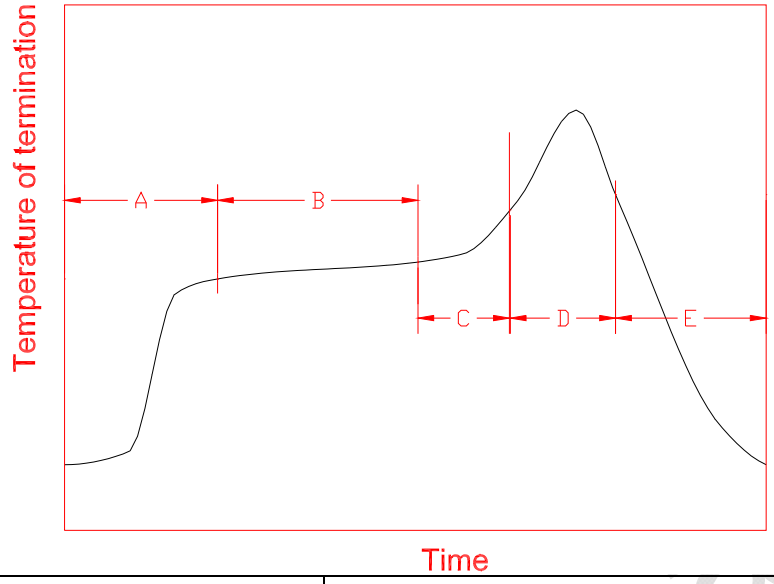
**Test Instrument: Agilent E5071C ENA-L Network Analyzer

5.LAND LAYOUT



	mm
A	1
B	0.3
C	0.3
D	0.5
E	0.8
F	0.2
G	0.55
H	1.2

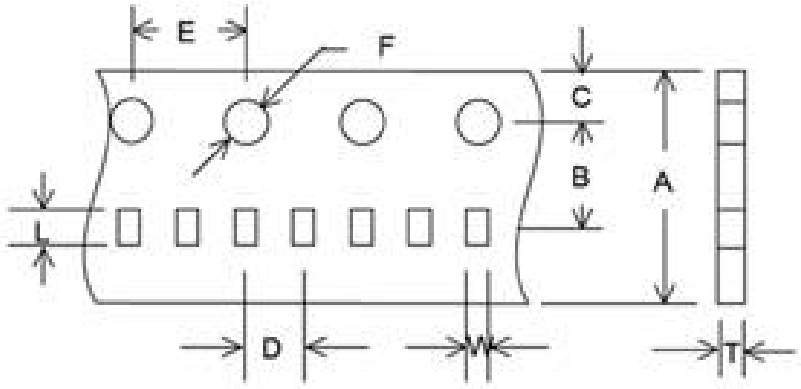
6.Recommendable reflow soldering



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

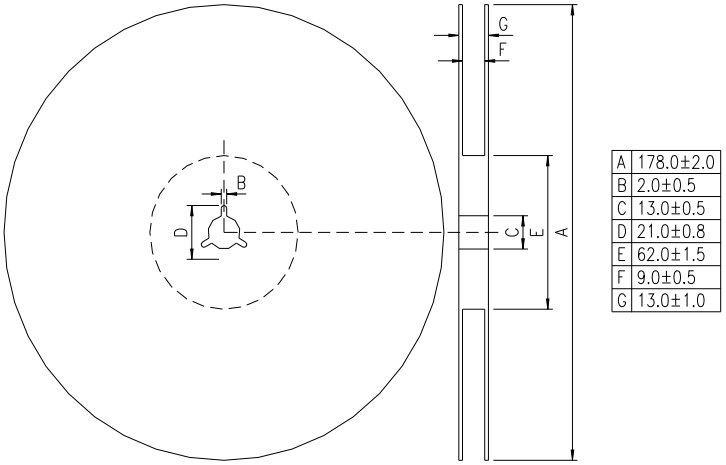
- According to J-STD-020C

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：10,000 pcs/Reel