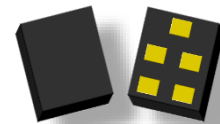


Product Features

- > B40 Tx Filter
- > Excellent Low Insertion Loss
 - 1.4 dB (Typical @ 2300 ~ 2400 MHz)
- > High Interference Rejection
 - 43dB_{int}(Typical @ Wi-Fi 2421~2443 MHz)
- > Miniature Size
 - 1.1 mm × 0.9 mm Footprint
 - 0.66 mm Max Height
- > High Power Rating
 - +30 dBm Input Power
- > Operating Temperature
 - -30 °C to +85 °C
- > Storage Temperature
 - -40 °C to +85 °C
- > High MSL Level
 - MSL3
- > RoHS Compliance
- > ESD Voltage (V_{ESD})
 - HBM: 1250V



Application

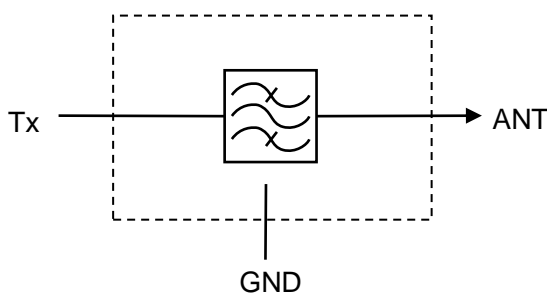
- > For Band 40Tx TDD-LTE

Description

The EPICMEMS EP7E40 is a high performance, high power bandpass filter of Sili-BAW™ series products, designed for Band40 (2300-2400MHz) applications such as smartphone and other mobile devices.

The EP7E40 is designed with EPICMEMS advanced bulk acoustic wave (BAW) resonator technology, accomplishing the bandpass filter with low insertion loss and steep roll-off.

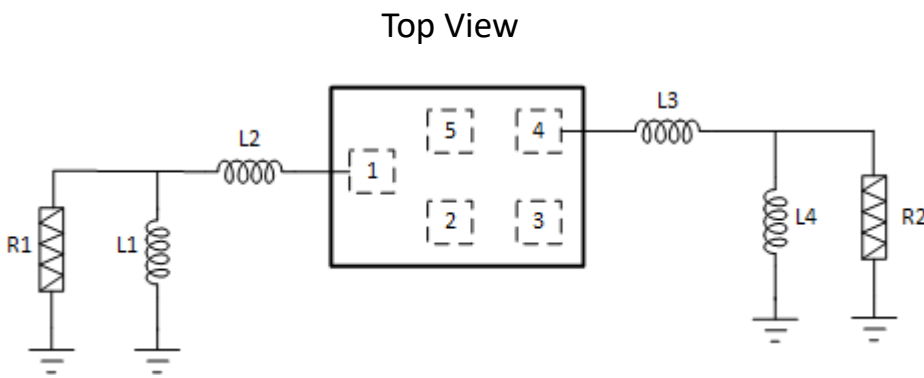
Functional Block Diagram



Maximum Ratings

CHARACTERISTICS	RATINGS	UNITS	NOTES
DC Permissive Voltage	5	V	
Maximum Input Power	30	dBm	CW signal , +55°C,5000hrs
Operating Temperature Range	-30 to +85	°C	
Storage Temperature Range	-40 to +85	°C	

Reference Circuit for Measurement



Pin connection	
(1)	Input
(4)	Output
(2)(3)(5)	GND
R1	50ohm
R2	50ohm
L1	4.0nH
L2	1.5nH
L3	1.6nH
L4	4.5nH

*Ideal Inductor

Band40 Tx Electrical Specifications [1]

Center Frequency (f ₀): 2350 MHz, -30 to +85°C					
Parameters Description	Unit	Min	Typ	Max	Note
Insertion Loss					
2300 ~ 2400 MHz	dB		1.4	2.4	+25°C
2300 ~ 2400 MHz	dB		1.4	2.9	-30°C ~+85°C
Ripple Deviation					
2300 ~ 2400 MHz	dB		0.8	1.8	+25°C
Attenuation					
450 ~ 960 MHz	dB	30	40		
1559 ~ 1606 MHz	dB	20	25		
1710 ~ 2200 MHz	dB	16	23		
2421 ~ 2443 MHz	dB _{int} ^[2]	30	43		WLAN Ch05,18MHz-BW
2421 ~ 2443 MHz	dB	10	41		WLAN Ch05, +25°C
2426 ~ 2448 MHz	dB _{int} ^[2]	36	45		WLAN Ch06,18MHz-BW
2426 ~ 2448 MHz	dB	35	41		WLAN Ch06, +25°C
2431 ~ 2483 MHz	dB _{int} ^[2]	38	46		WLAN Ch07-13,18MHz-BW
2431 ~ 2483 MHz	dB	35	41		WLAN Ch07-13, +25°C
4600 ~ 4800 MHz	dB	25	32		2f ₀
6900 ~ 7200 MHz	dB	15	21		3f ₀
VSWR					
VSWR _{ANT}			1.4	2.2	
VSWR _{TX}			1.4	2.2	

Note :

[1] Min./Max. specifications are guaranteed at the indicated temperature, unless otherwise noted

[2] dB_{int} is the average value (arithmetic mean) of the parameter over the indicated band at 25°C, , which is calculated by expression = 1/B * [S(f₁)+S(f₁+1MHz)+...+S(f_B-1MHz)+ S(f_B)]

Typical Performance at T = 25°C

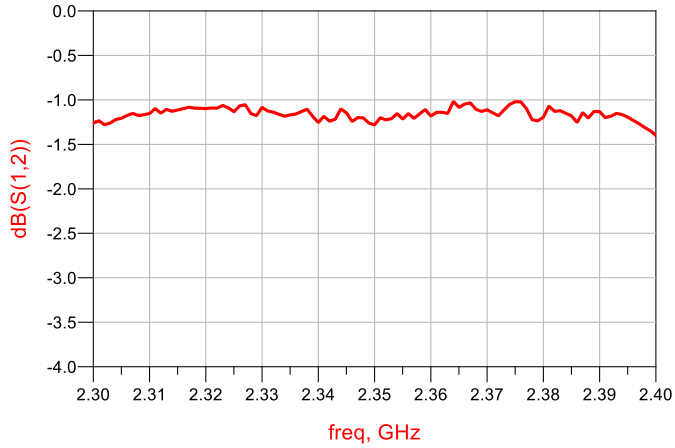


Figure 1. Passband Insertion Loss, 2300 – 2400 MHz

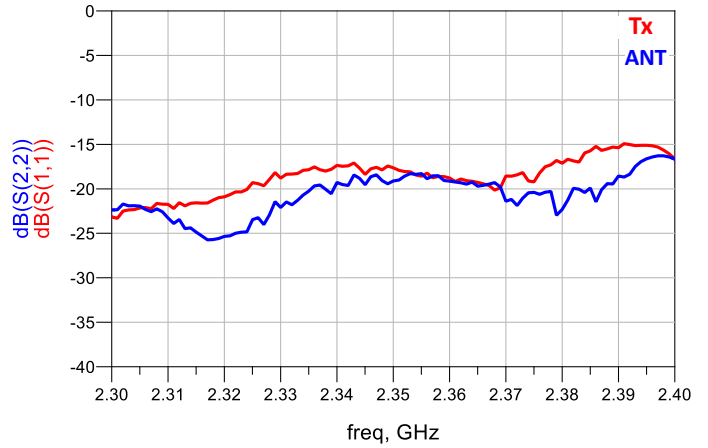


Figure 2. TX, ANT Port Return Loss, 2300 – 2400 MHz

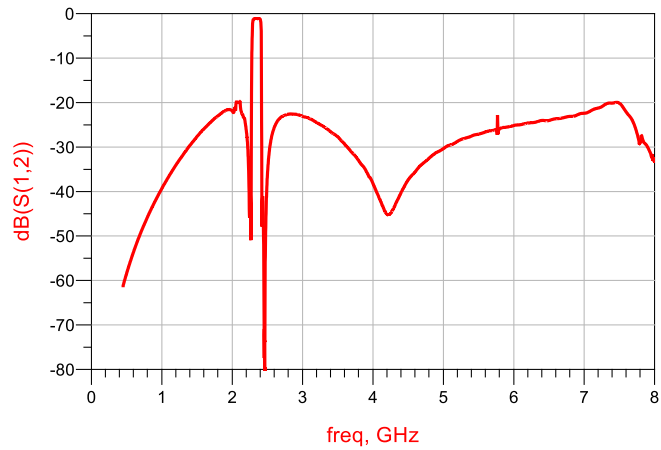


Figure 3. Wideband Attenuation, 450 – 8000 MHz

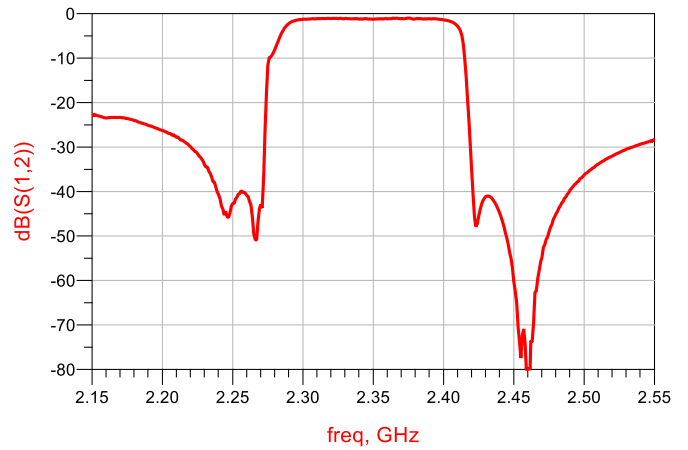


Figure 4. Attenuation, 2150 – 2550 MHz

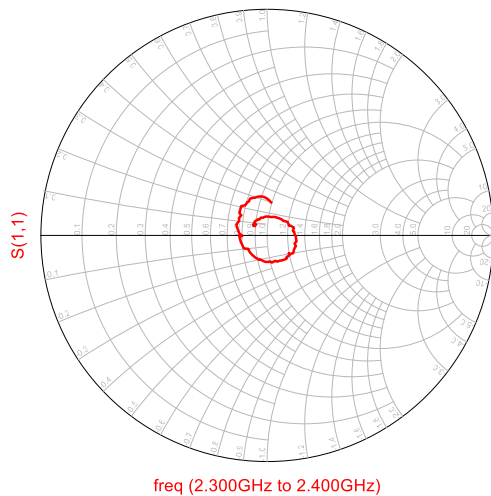


Figure 5. Tx, Input Port Impedance, 2300 – 2400 MHz

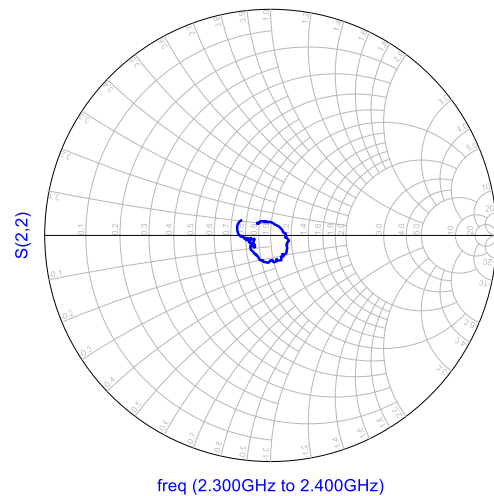
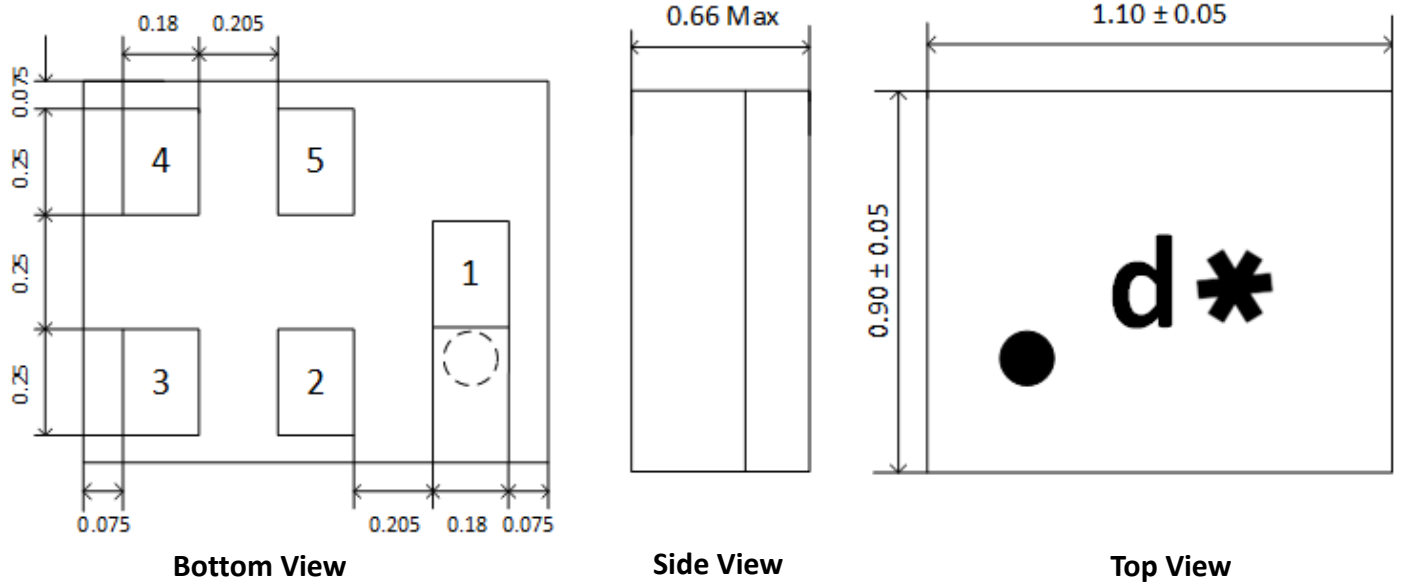


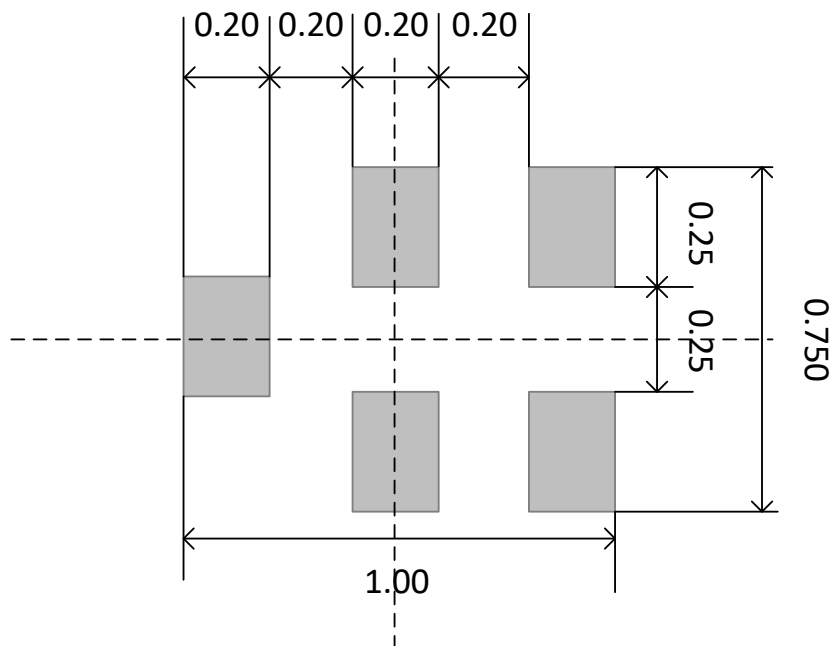
Figure 6. ANT, Output Port Impedance, 2300 – 2400 MHz

Dimensions (Unit: mm)

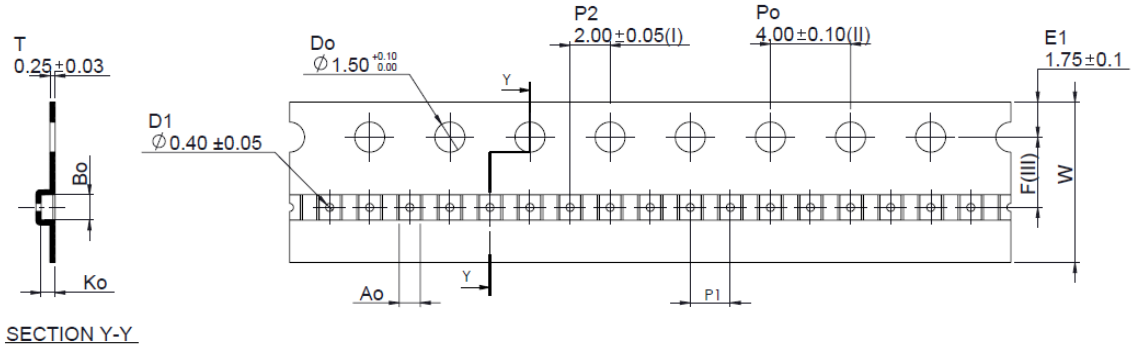


- ● -This Symbol indicates input pin 1
- d* -The 1st Character 'd' indicates the model name of EP7E40
-The 2nd Character '*' indicates the DC

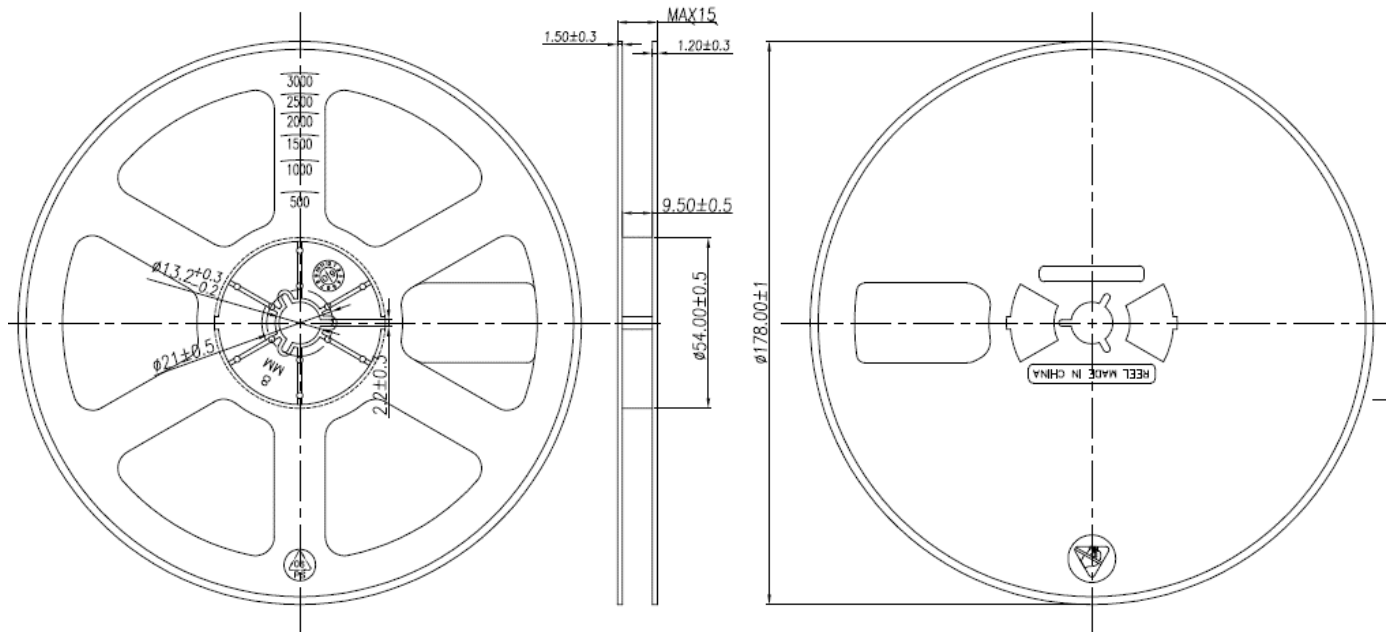
Example of Land Pattern (Unit: mm)



Packing & Marking Detail (Unit: mm)

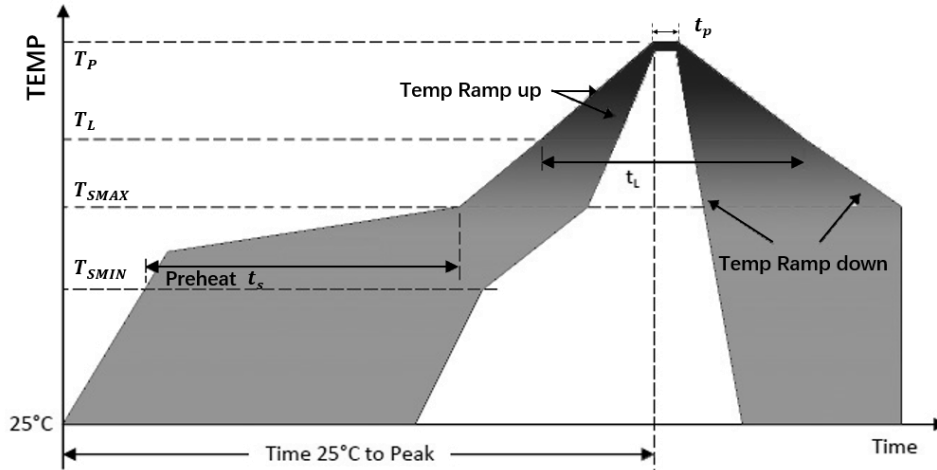


Ao	1.05	+/- 0.03	(VI)
Bo	1.25	+/- 0.03	(VI)
Ko	0.70	+/- 0.04	
F	3.50	+/- 0.05	
P1	2.00	+/- 0.10	
W	8.00	+/- 0.10	



Reeling Quantity: 10000pcs/reel

Recommended Reflow Profile



Profile Feature	Pb-Free
Average Ramp-up rate ($T_{S_{MAX}}$ to T_P)	3°C/second max.
Preheat	
- Temperature Min ($T_{S_{MIN}}$)	150°C
- Temperature Max ($T_{S_{MAX}}$)	200°C
- Time ($T_{S_{MIN}}$ to $T_{S_{MAX}}$) (t_s)	60-180seconds
Time maintained above:	
- Temperature (T_L)	217°C
- Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down rate (T_P to $T_{S_{MAX}}$)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max

Related Products

Part No.	Description	Package
EP7041F	5G n41 BAW Tx Filter	1.4mm x 1.1mm
EP7007	Band 7 BAW Duplexer	1.8mm x 1.4mm
EP7003	Band 3 BAW Duplexer	1.8mm x 1.4mm
EP7002	Band 2 BAW Duplexer	1.8mm x 1.4mm
EP70W2	2.4G WIFI TRX BAW Filter	1.1mm x 0.9mm
.....

Important Notes

- > All data or information contained herein are subject to change without prior notice. Please contact EPICMEMS for further details of product specification.
- > Customers should conduct validation and verification of our products in actual condition of mounting and operating environment before placing orders for EPICMEMS products.
- > The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.
- > EPICMEMS products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.
- > The contents of this specification are applicable to our products which are purchased from our sales offices or authorized distributors (hereinafter "EPICMEMS's official sales channel"). Please note that the contents of this specification are not applicable to our products purchased from any seller other than EPICMEMS's official sales channel.

Revision History

Version	Specification Changes	Date (Y/M/D)
1.0	Initial MP data release	2021/08/30

Contact Information

总部	厦门市海沧区海沧大道 555 号厦门中心 E 座 19 楼	0592-6057225
运营中心	上海市浦东新区盛荣路 88 号盛大天地源创谷 6 号楼 102	021-68366206
销售支持中心	深圳市南山区高新南一道 6 号 TCL 大厦 A 座 5 层 520 单元	0755-86547400
销售支持中心	西安高新区唐延南路 8 号泰维智链中心 T1 栋 1207 室	-

邮箱 sales@epicmems.com

网址 www.epicmems.com