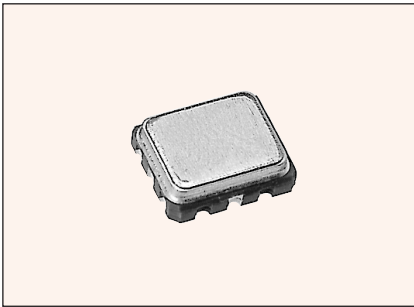


Surface Acoustic Wave Filter (SAW Filter)



TQS-646A-7R

■ Features

- Miniature size : 5.2(W) x 4.5(D) x 1.55(H)mm
- Low group delay distortion
- High selectivity

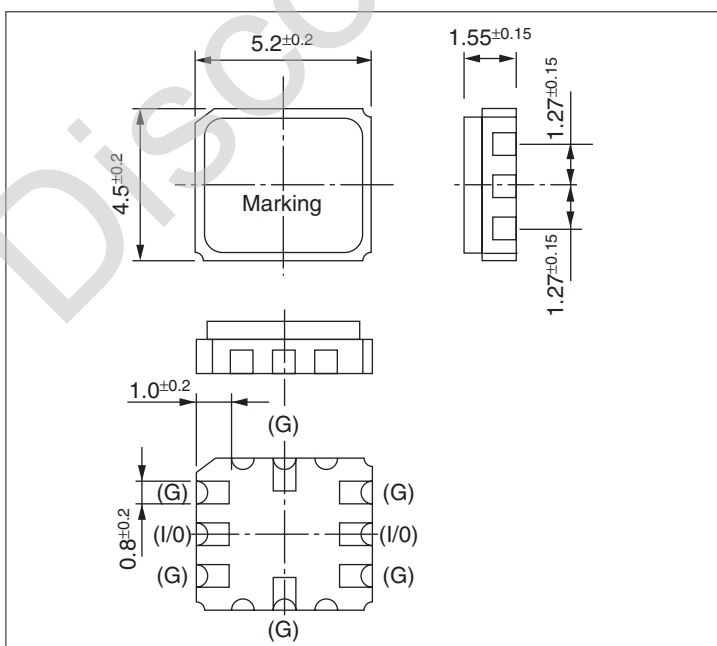
■ Application

- IF filter for Cellular Phone GSM system

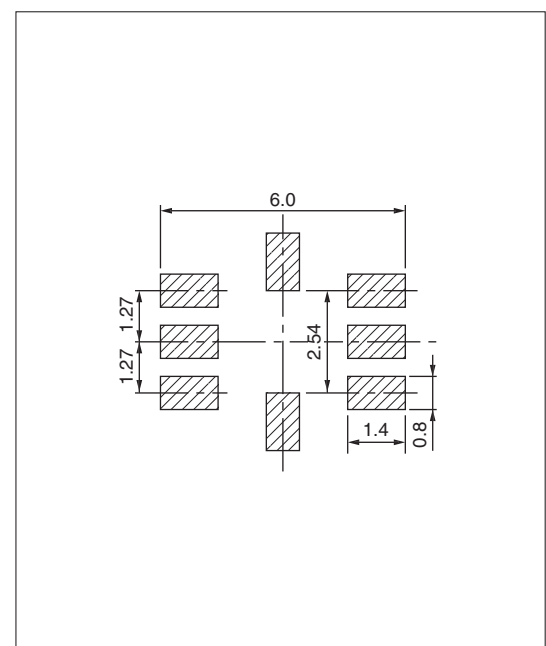
■ Specifications

Type	TQS-646A-7R
Nominal frequency (fo)	400 MHz
3dB Pass band	fo ±80 kHz
Insertion loss	6.0 dB max.
Pass band ripple	1.0 dB max.
Group delay distortion	3.0 μs max.
Stop band attenuation	
fo ±400 kHz	17 dB min.
fo ±600 kHz	35 dB min.
fo ±800 kHz	40 dB min.
Terminating impedance	800 Ω // -1.0pF
Operating temperature range	-20 °C to +75 °C

■ Package Outlines [Dimensions in mm]



■ Footprint [Dimensions in mm]

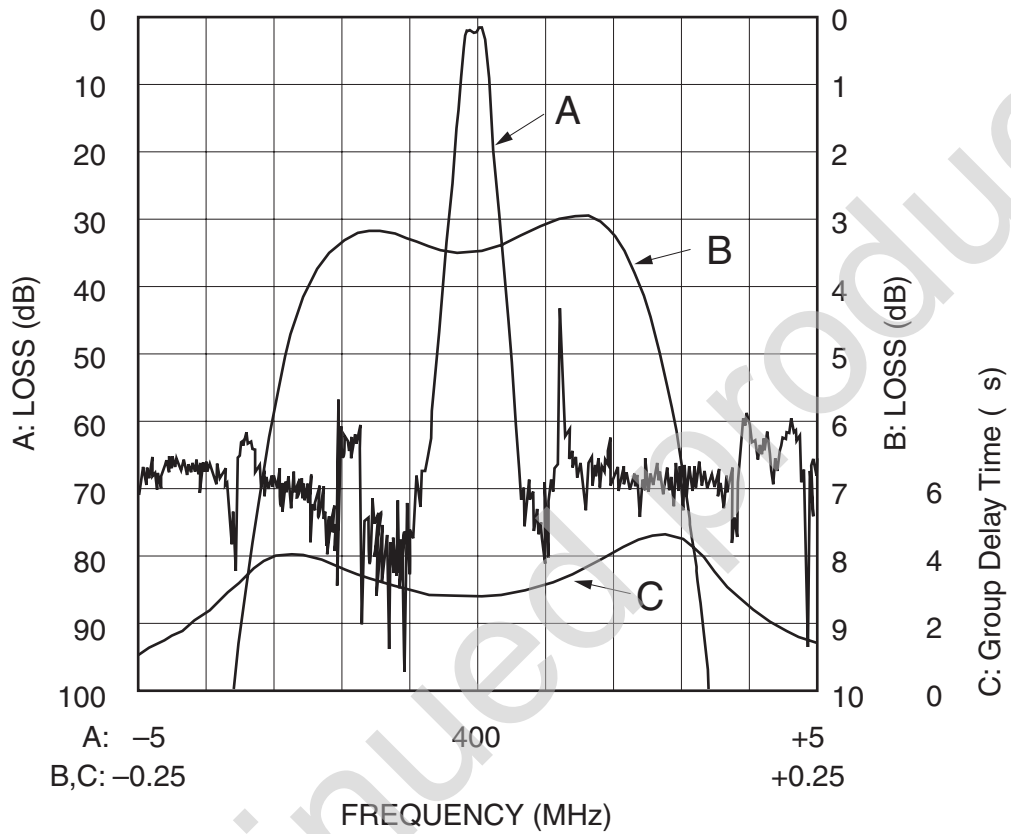


Surface Acoustic Wave Filter (SAW Filter)

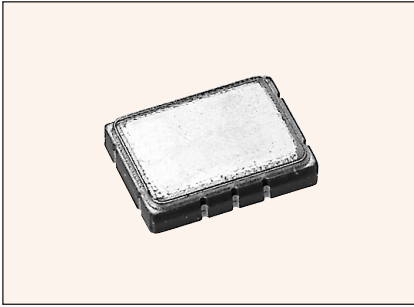
IF Filter for Cellular Phone
GSM system

TQS-646A-7R
400 MHz

■ Electrical Data



Surface Acoustic Wave Filter (SAW Filter)



TQS-657A-7R

■ Features

- Miniature size : 7.0(W) x 5.0(D) x 1.57(H)mm
- Low group delay distortion
- High selectivity

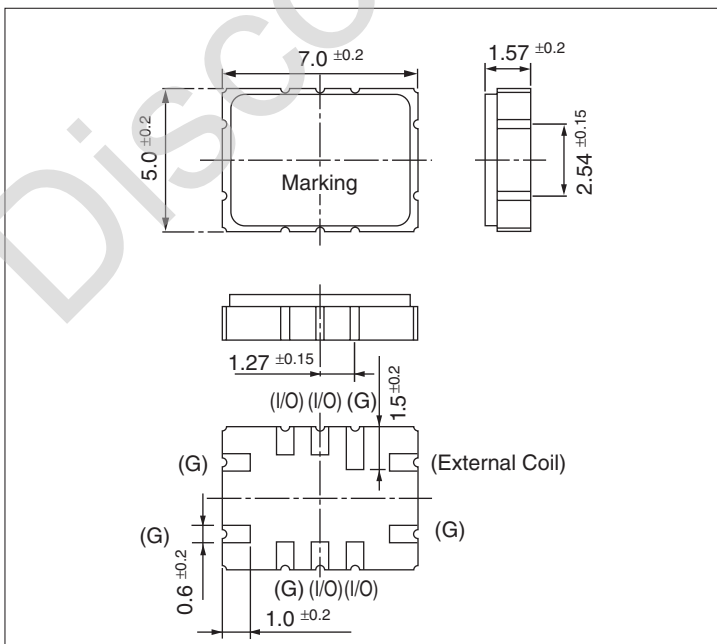
■ Application

- IF filter for Cellular Phone GSM system

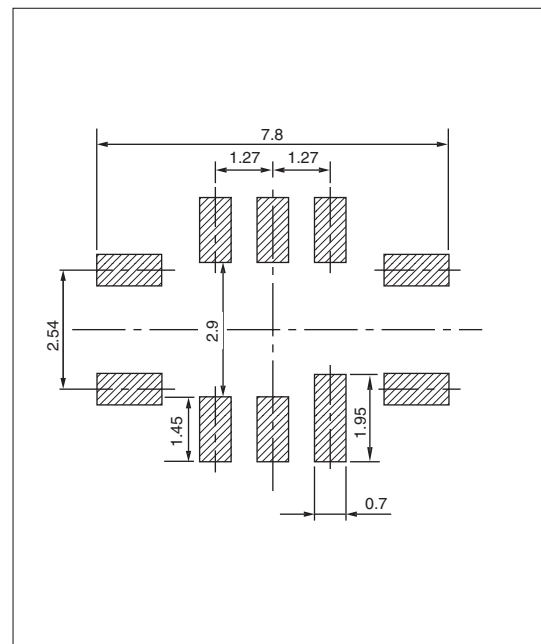
■ Specifications

Type	TQS-657A-7R
Nominal frequency (fo)	225 MHz
Pass band	fo ±80 kHz
Insertion loss	5.0 dB max.
Pass band ripple	1.5 dB max.
Group delay distortion	1.5 μs max.
Stop band attenuation	
fo ±400 kHz	28 dB min.
fo ±600 kHz	38 dB min.
fo ±800 kHz	38 dB min.
fo ±1.5 MHz	50 dB min.
Terminating impedance	950 Ω // -1.3pF
Operating temperature range	-20 °C to +75 °C

■ Package Outlines [Dimensions in mm]



■ Footprint [Dimensions in mm]

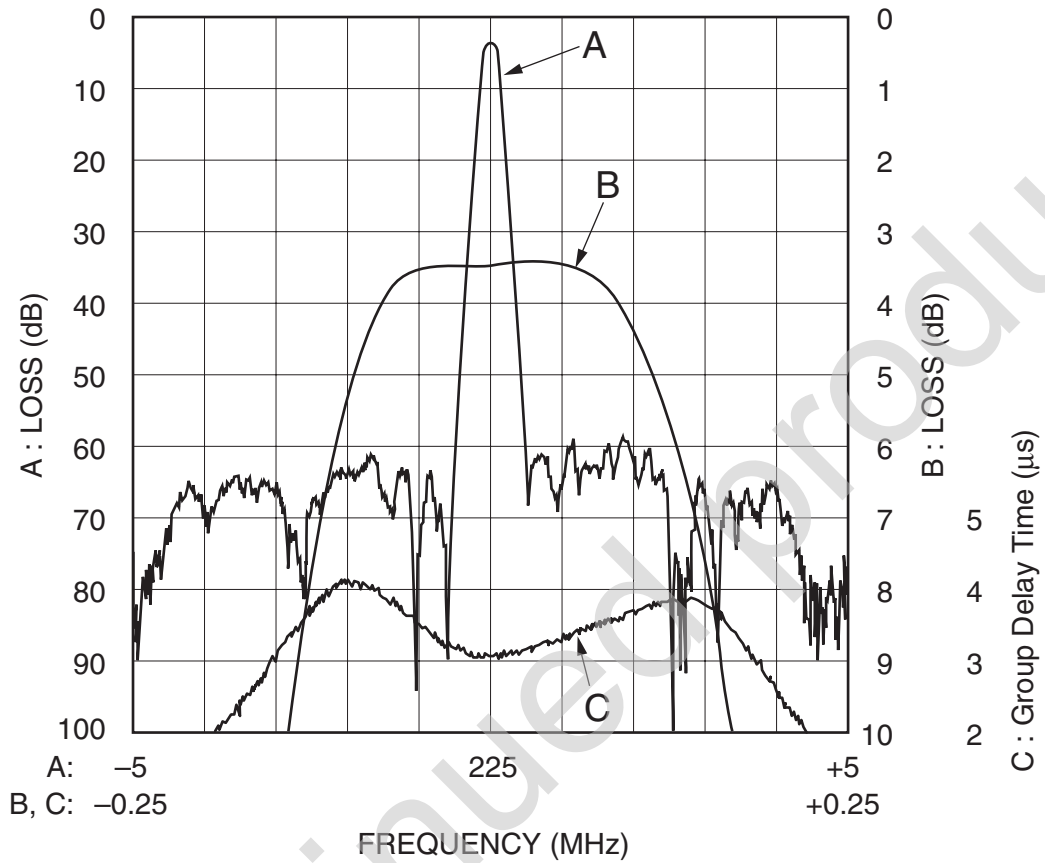


Surface Acoustic Wave Filter (SAW Filter)

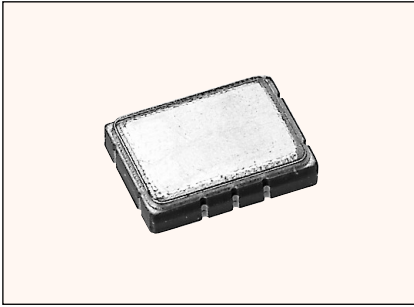
IF Filter for Cellular Phone
GSM system

TQS-657A-7R
225 MHz

■ Electrical Data



Surface Acoustic Wave Filter (SAW Filter)



TQS-662C-7R

■ Features

- Miniature size : 7.0(W) x 5.0(D) x 1.57(H)mm
- High attenuation
- High selectivity

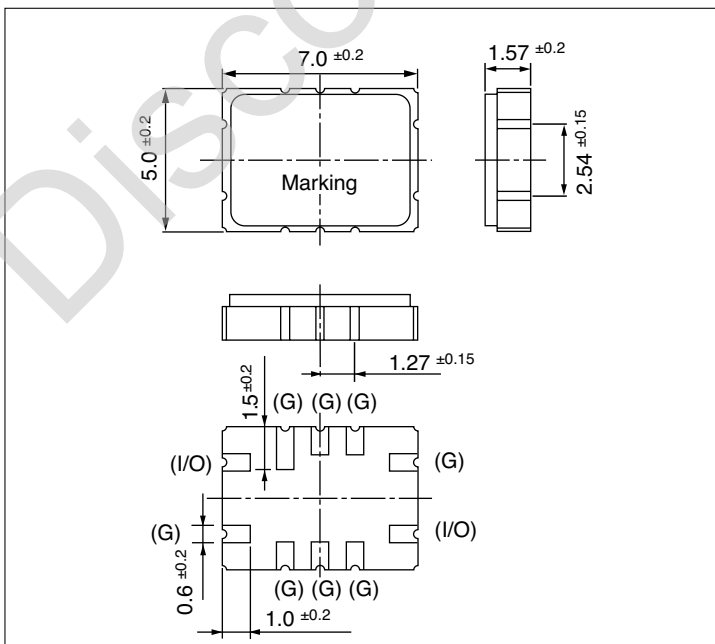
■ Application

- IF filter for Cellular Phone AMPS system

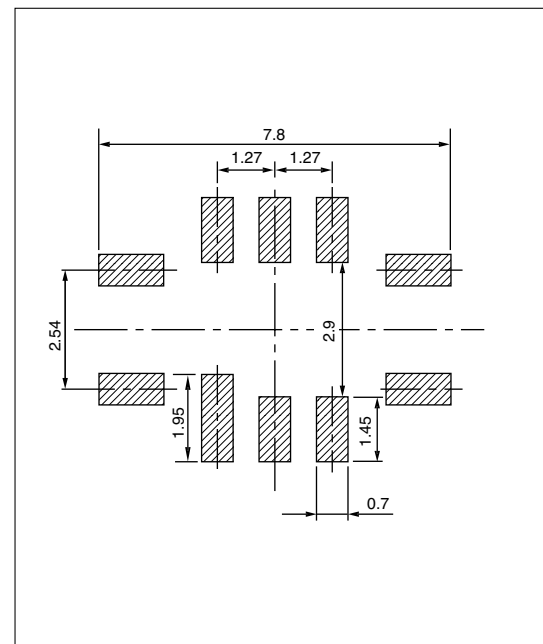
■ Specifications

Type	TQS-662C-7R
Nominal frequency (fo)	85.38 MHz
3dB Pass band	fo ±12 kHz
Insertion loss	5.5 dB max.
Pass band ripple	1.5 dB max.
Group delay distortion	13 μs max.
Stop band attenuation	
fo ± 60 kHz	25 dB min.
fo ± 120 kHz	50 dB min.
fo ± 330 kHz	55 dB min.
fo ± 660 MHz	55 dB min.
Terminating impedance	1700 Ω // -0.6pF
Operating temperature range	-30 °C to +85 °C

■ Package Outlines [Dimensions in mm]



■ Footprint [Dimensions in mm]

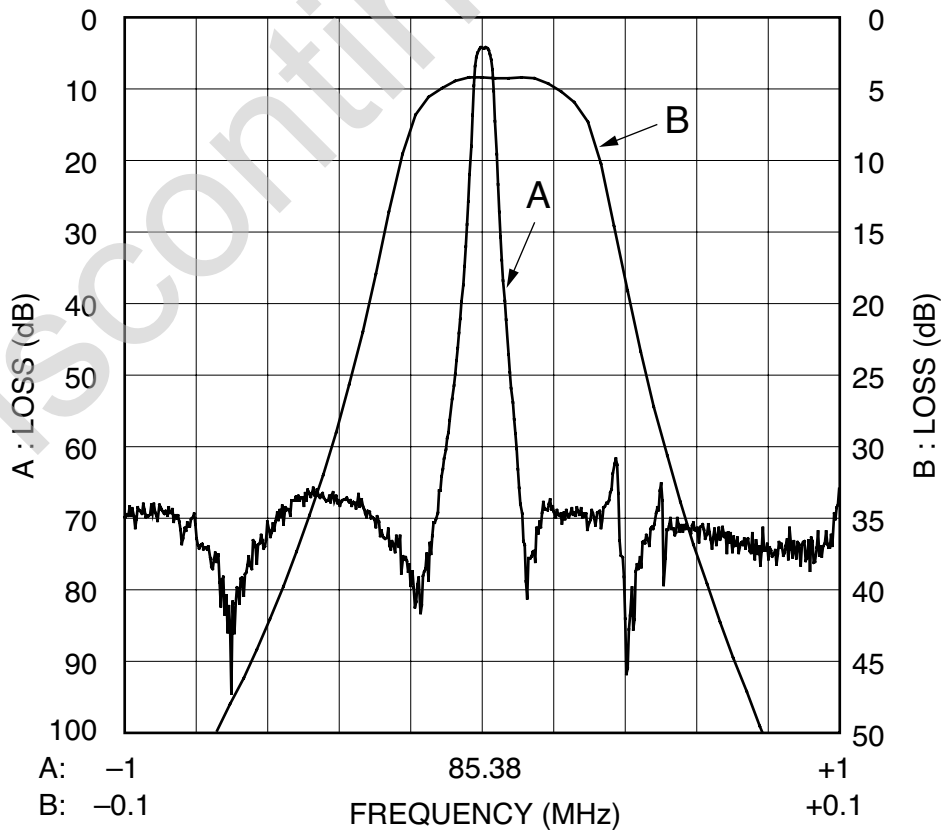
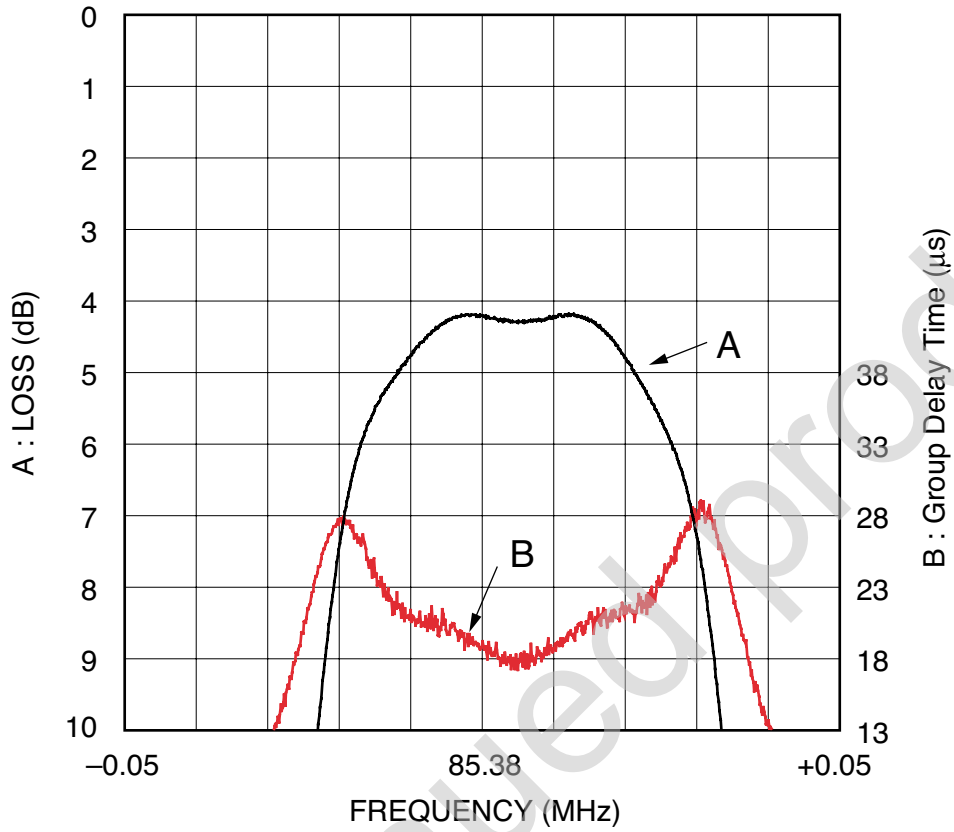


Surface Acoustic Wave Filter (SAW Filter)

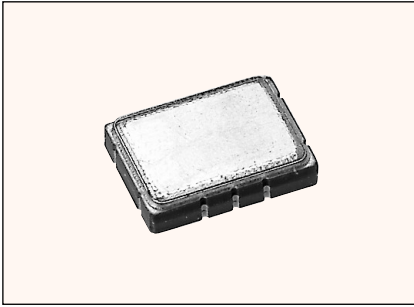
IF Filter for Cellular Phone
AMPS system

TQS-662C-7R
85.38 MHz

Electrical Data



Surface Acoustic Wave Filter (SAW Filter)



TQS-662D-7R

Features

- Miniature size : 7.0(W) x 5.0(D) x 1.57(H)mm
- High attenuation
- High selectivity

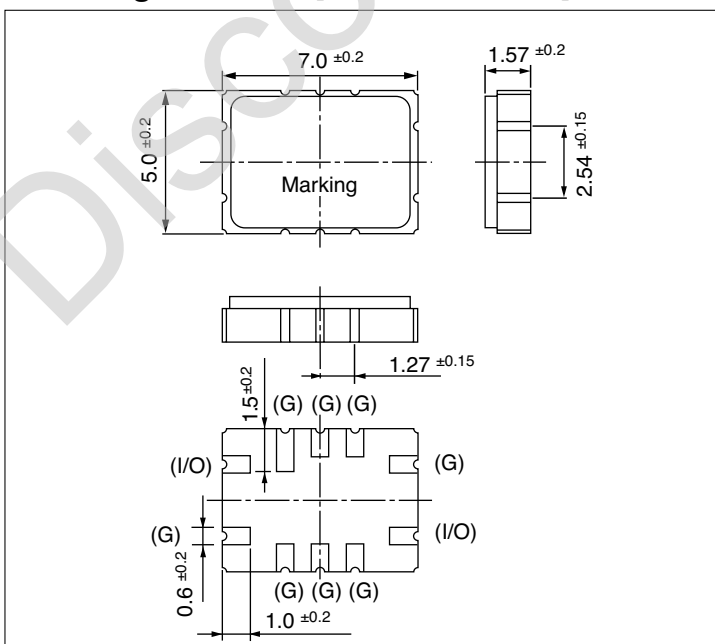
Application

- IF filter for Cellular Phone AMPS system

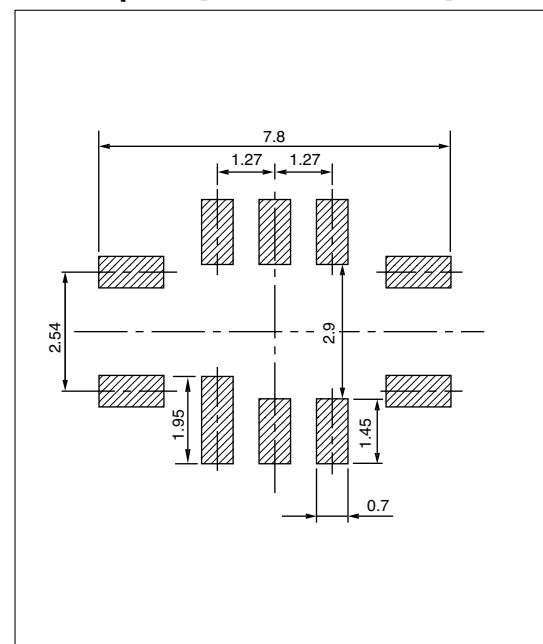
Specifications

Type	TQS-662D-7R
Nominal frequency (fo)	86.46 MHz
3dB Pass band	fo ±12 kHz
Insertion loss	5.5 dB max.
Pass band ripple	1.5 dB max.
Group delay distortion	13 μs max.
Stop band attenuation	
fo ± 60 kHz	25 dB min.
fo ± 120 kHz	50 dB min.
fo ± 330 kHz	55 dB min.
fo ± 660 MHz	55 dB min.
Terminating impedance	1700 Ω // -0.6pF
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

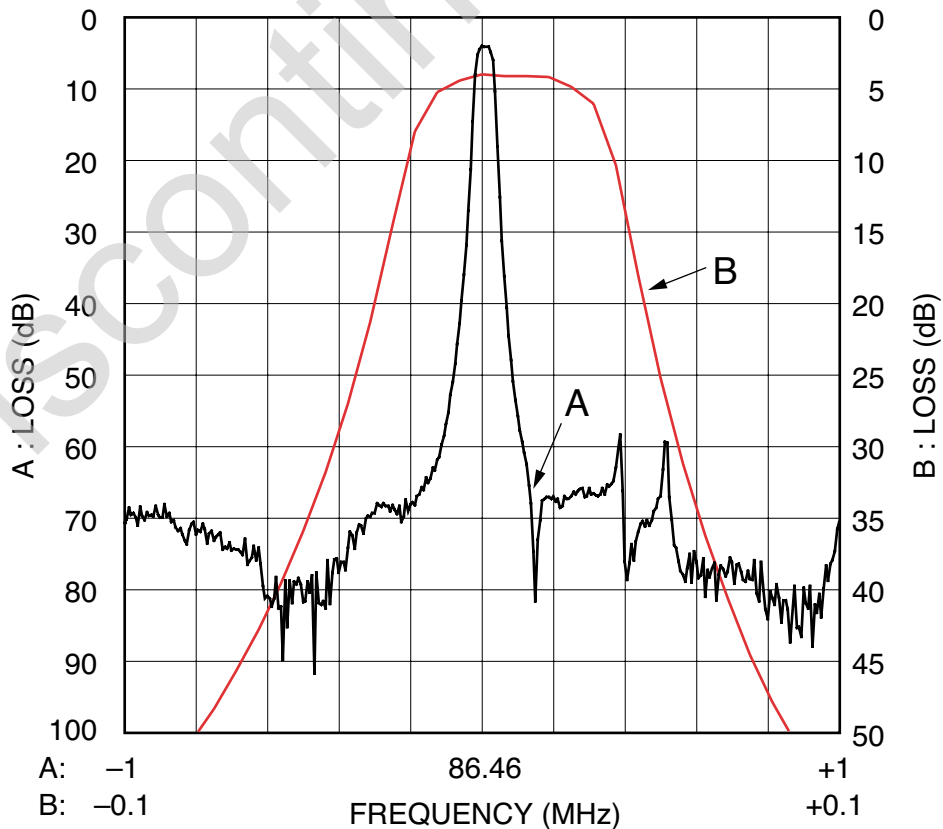
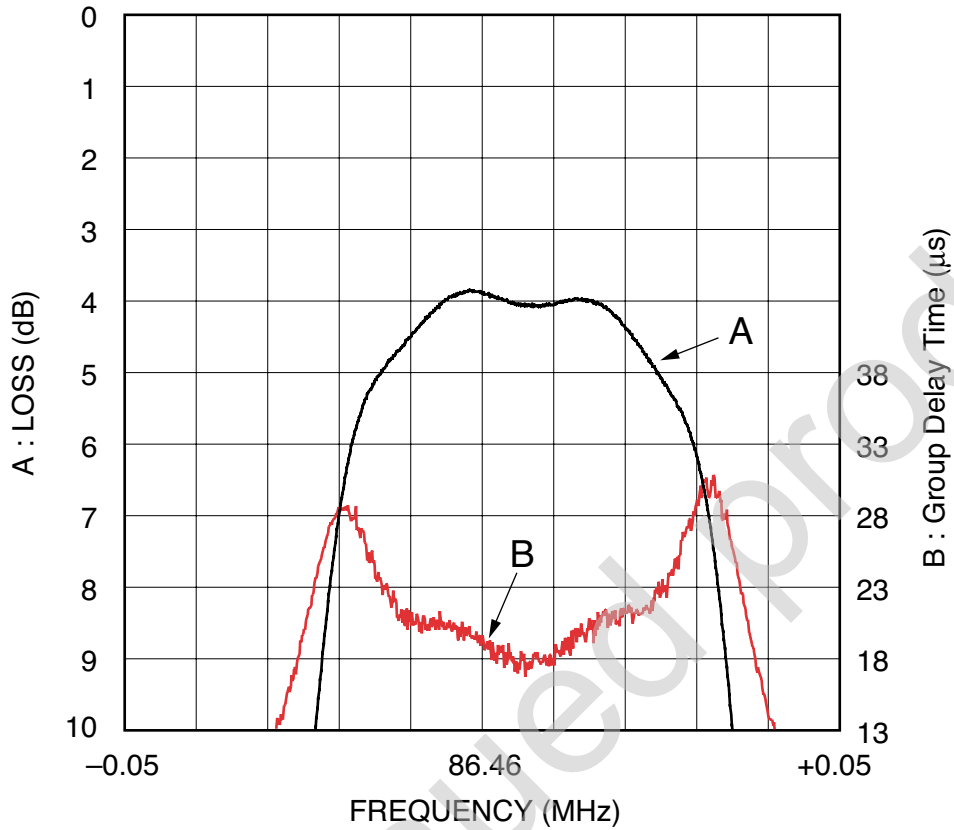


Surface Acoustic Wave Filter (SAW Filter)

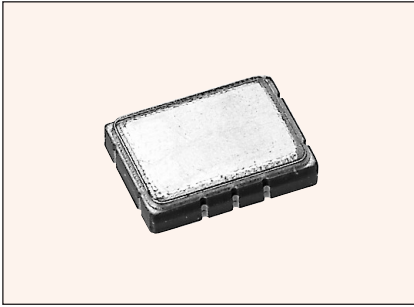
IF Filter for Cellular Phone
AMPS system

TQS-662D-7R
86.46 MHz

■ Electrical Data



Surface Acoustic Wave Filter (SAW Filter)



TQS-663D-7R

■ Features

- Miniature size : 7.0(W) x 5.0(D) x 1.57(H)mm
- Low group delay distortion
- High selectivity

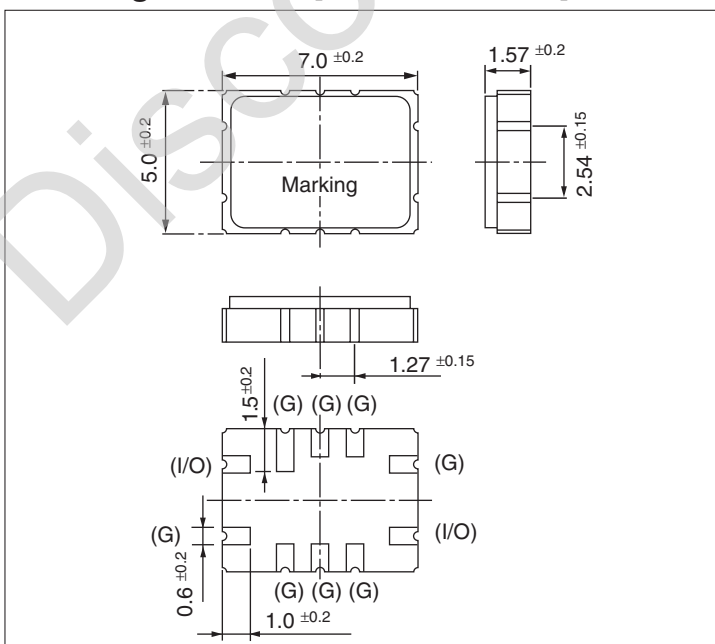
■ Application

- IF filter for Cellular Phone AMPS system

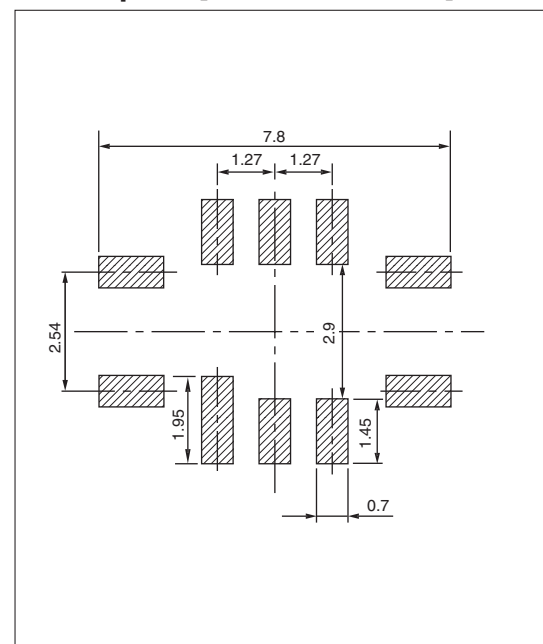
■ Specifications

Type	TQS-663D-7R
Nominal frequency (fo)	183.6 MHz
5dB Pass band	fo ±11 kHz
Insertion loss	6.0 dB max.
Pass band ripple	2.0 dB max.
Group delay distortion	10 μs max.
Stop band attenuation fo ± 60 kHz	15 dB min. (+20 °C to +60 °C) 8 dB min. (-30 °C to +85 °C)
fo ±120 kHz	35 dB min.
fo ± 1 MHz	60 dB min.
Terminating impedance	450 Ω // -0.04pF
Operating temperature range	-30 °C to +85 °C

■ Package Outlines [Dimensions in mm]



■ Footprint [Dimensions in mm]

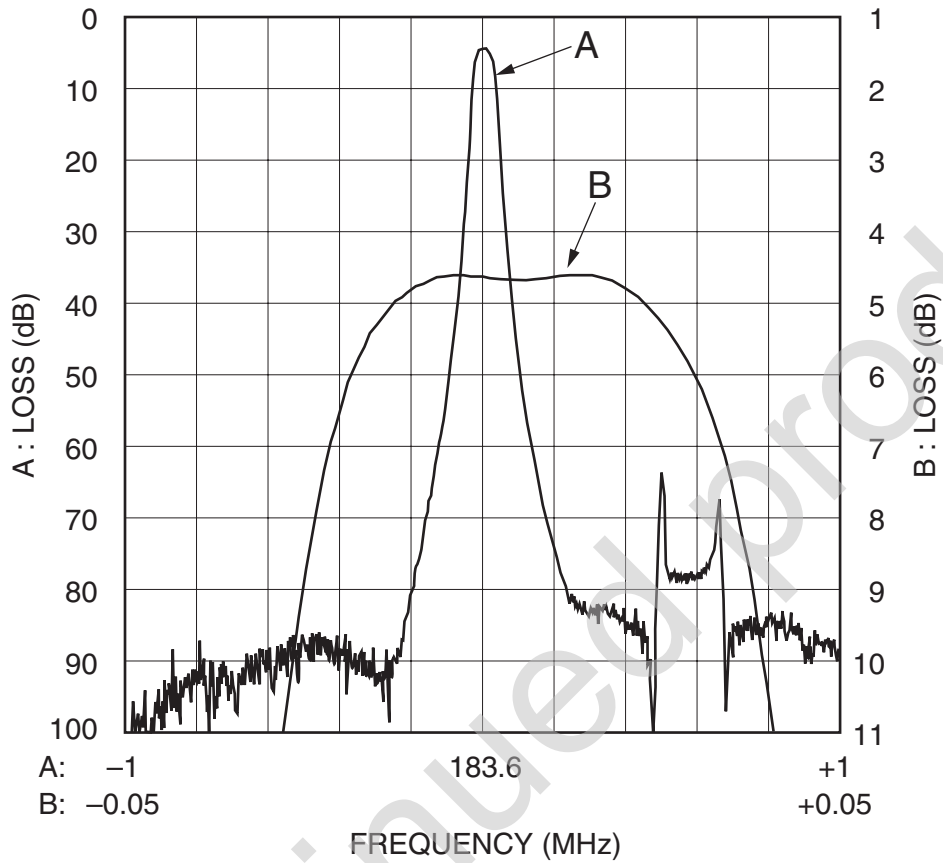


Surface Acoustic Wave Filter (SAW Filter)

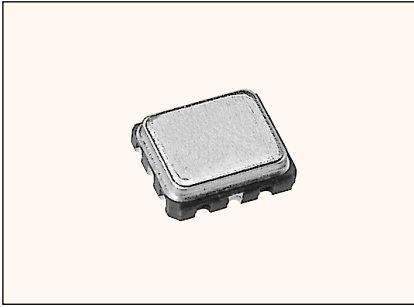
IF Filter for Cellular Phone
AMPS system

TQS-663D-7R
183.6 MHz

■ Electrical Data



Surface Acoustic Wave Filter (SAW Filter)



TQS-665A-7R

■ Features

- Miniature size : 5.2(W) x 4.5(D) x 1.55(H)mm
- Low group delay distortion
- High selectivity

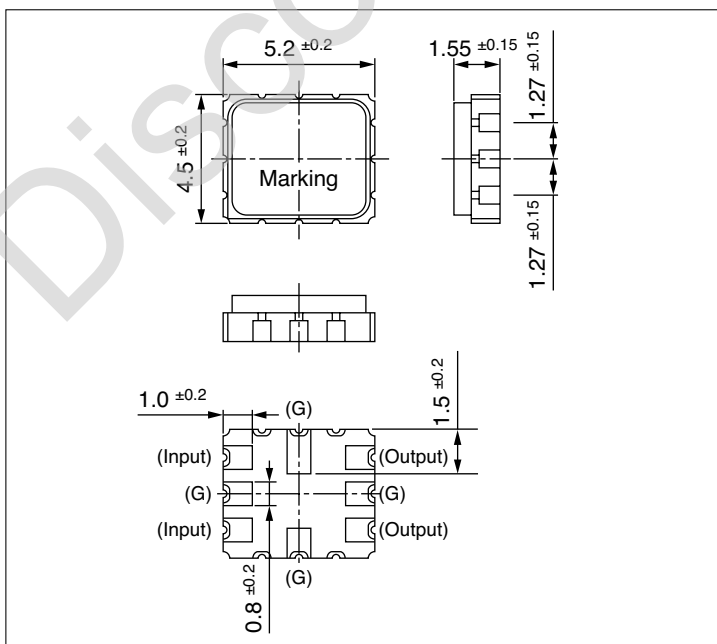
■ Application

- IF filter for Cellular Phone GSM system

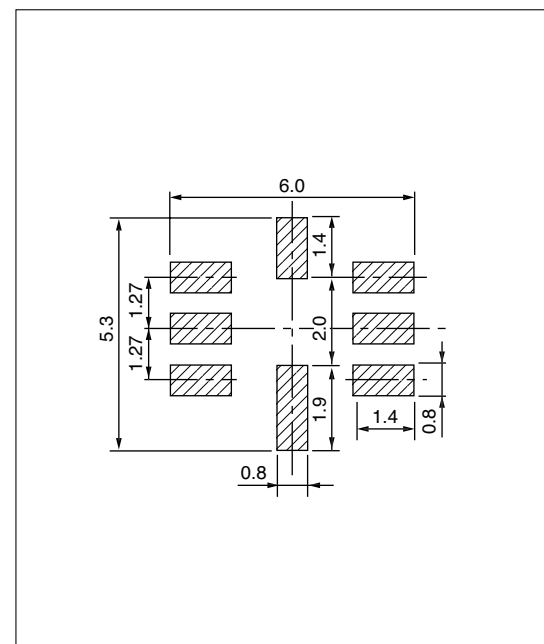
■ Specifications

Type	TQS-665A-7R
Nominal frequency (fo)	360 MHz
3 dB Pass band	fo ±80 kHz
Insertion loss	5.0 dB max.
Pass band ripple	2.0 dB max.
Group delay distortion	2.0 μs max.
Stop band attenuation	
fo ±400 kHz	22 dB min.
fo ±600 kHz	40 dB min.
fo ±1.6MHz to ±3 MHz	48 dB min.
Terminating impedance	790 Ω // -1.3pF
Operating temperature range	-20 °C to +75 °C

■ Package Outlines [Dimensions in mm]



■ Footprint [Dimensions in mm]

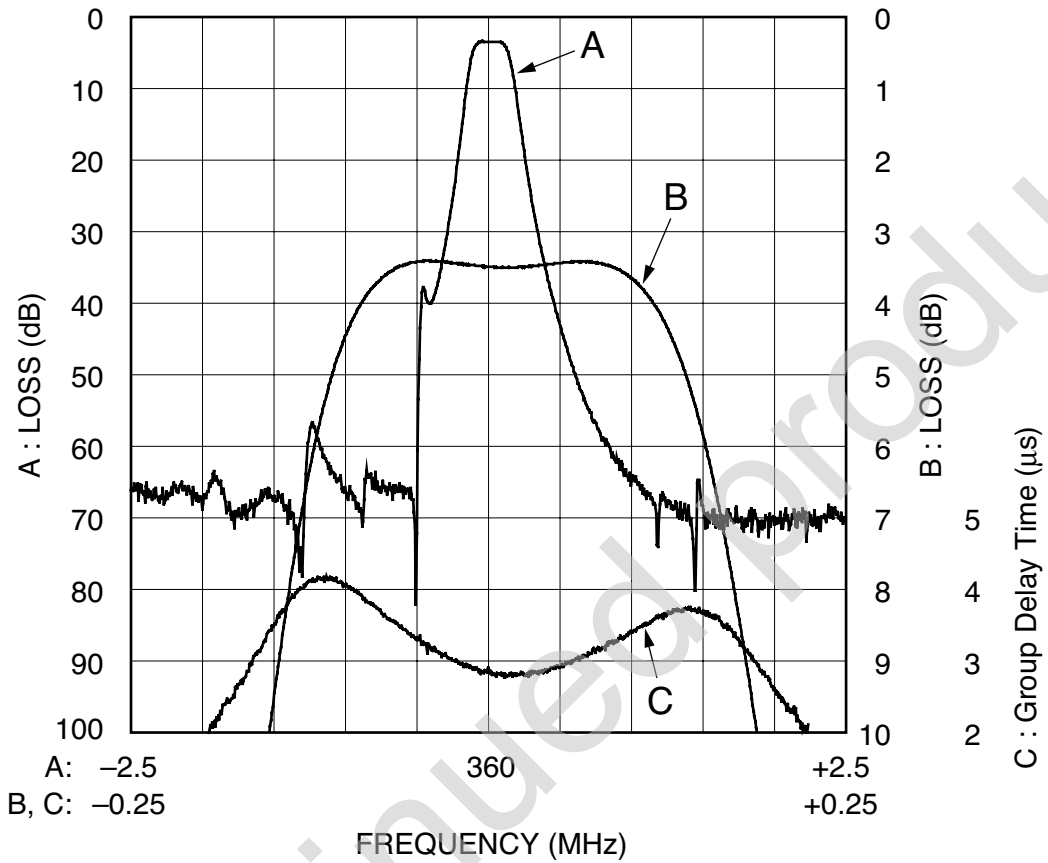


Surface Acoustic Wave Filter (SAW Filter)

IF Filter for Cellular Phone
GSM system

TQS-665A-7R
360 MHz

■ Electrical Data



Discontinued Product