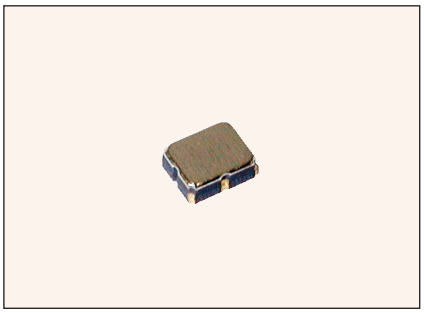
TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-507A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High selectivity

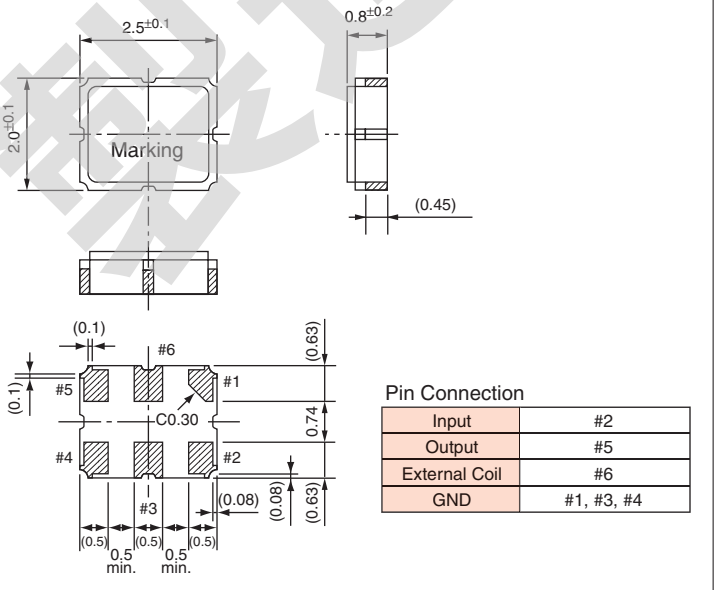
Application

- RF filter for Cellular Phone
  N-CDMA system (Rx)

Specifications

Type	TQS-507A-7G
Nominal frequency	851 MHz
Pass band	832 to 870 MHz
Insertion loss	4.0 dB max.
Pass band ripple	2.0 dB max.
VSWR	3.0 max.
Stop band attenuation (Referred to through Level) 608 to 651 MHz 702 to 761 MHz 887 to 925 MHz	 48 dB min. 45 dB min. 18 dB min.
Terminating impedance	Input : 50 Ω , Output : 50 Ω External coil : 8.2nH
Operating temperature range)	-20 °C to +75 °C

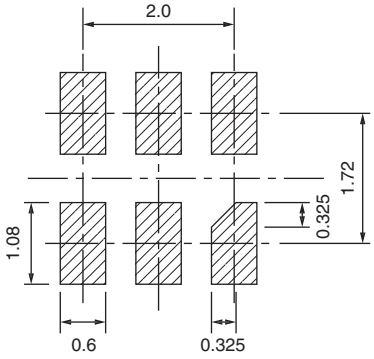
Package Outlines [Dimensions in mm]



Pin Connection

Input	#2
Output	#5
External Coil	#6
GND	#1, #3, #4

Footprint [Dimensions in mm]

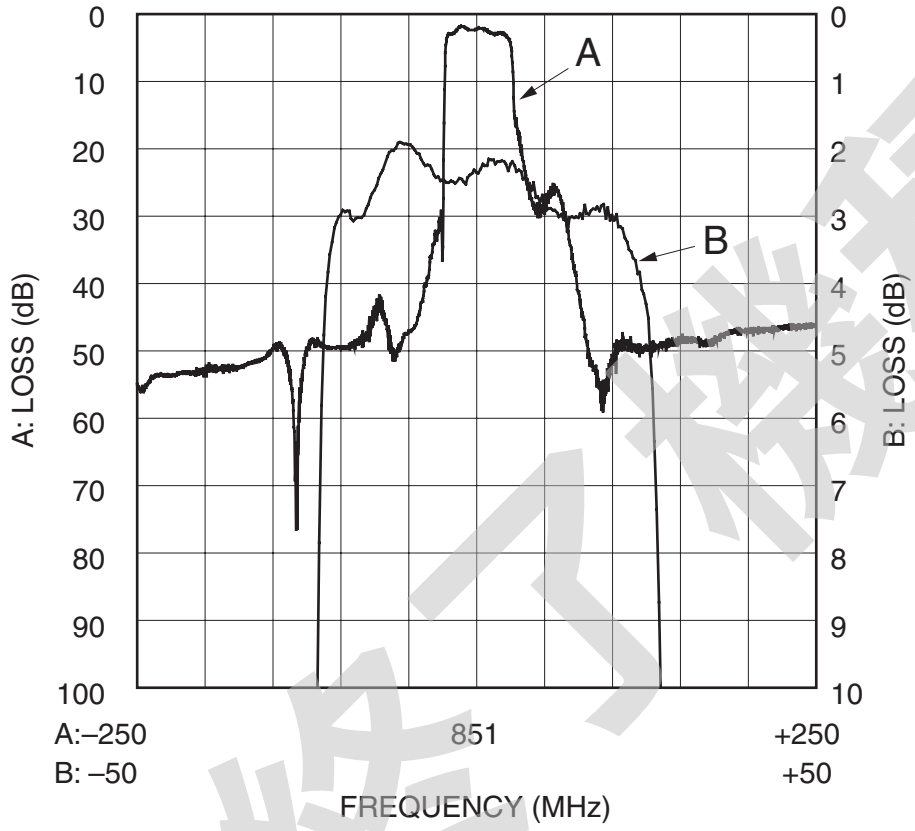


(2001. 6.)

RF Filter for Cellular Phone
N-CDMA system (Rx)

TQS-507A-7G
851 MHz

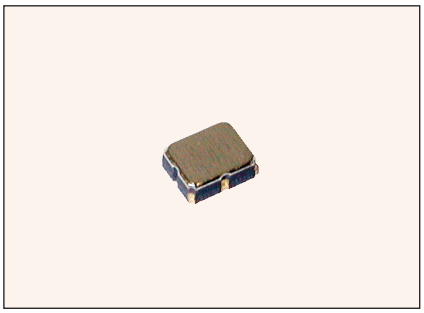
Electrical Data



(2001. 6.)

TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-508A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High selectivity

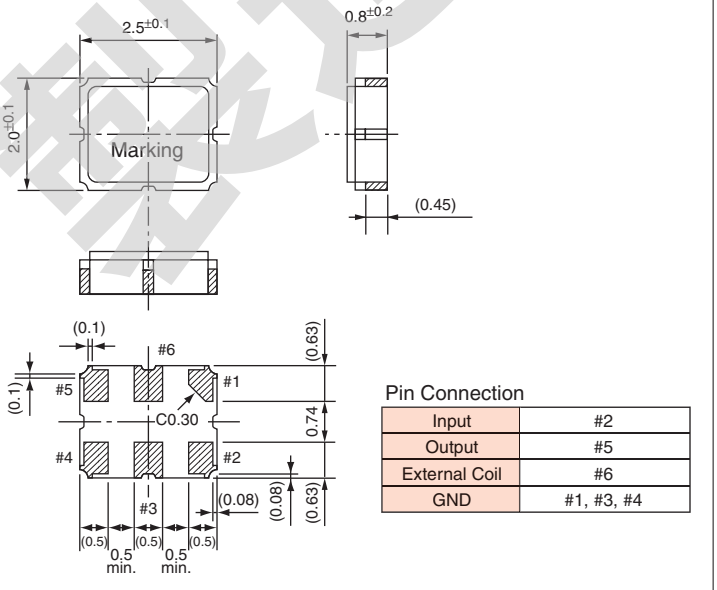
Application

- RF filter for Cellular Phone
  N-CDMA system (Tx)

Specifications

Type	TQS-508A-7G
Nominal frequency	906 MHz
Pass band	887 to 925 MHz
Insertion loss	4.0 dB max.
Pass band ripple	2.0 dB max.
VSWR	3.0 max.
Stop band attenuation (Referred to through Level) DC to 761 MHz 761 to 870 MHz 1051 to 1092 MHz 1092 to 3000 MHz	 45 dB min. 38 dB min. 40 dB min. 25 dB min.
Terminating impedance	Input : 50 Ω , Output : 50 Ω External coil : 8.2nH
Operating temperature range)	-20 °C to +75 °C

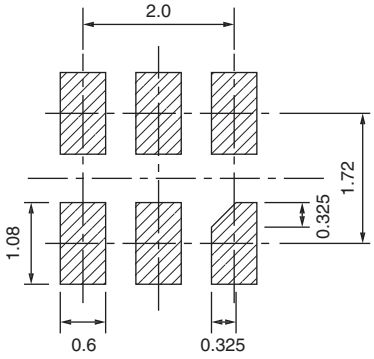
Package Outlines [Dimensions in mm]



Pin Connection

Input	#2
Output	#5
External Coil	#6
GND	#1, #3, #4

Footprint [Dimensions in mm]

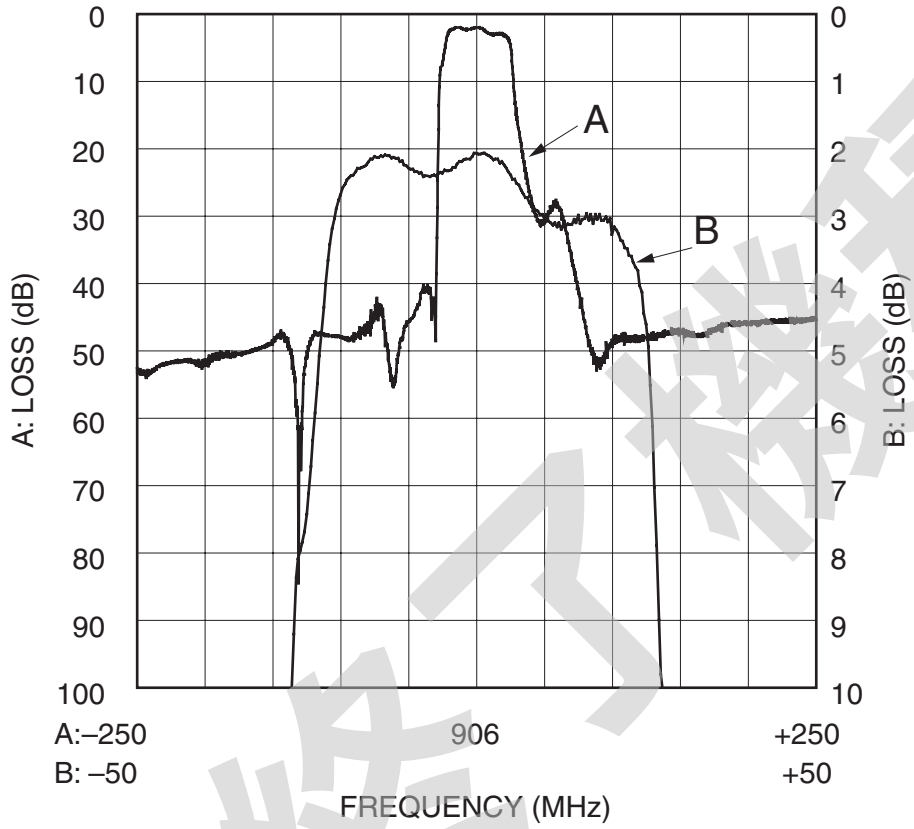


(2001. 6.)

RF Filter for Cellular Phone
N-CDMA system (Tx)

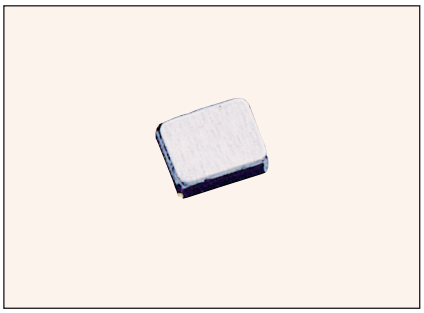
TQS-508A-7G
906 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-509A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High selectivity

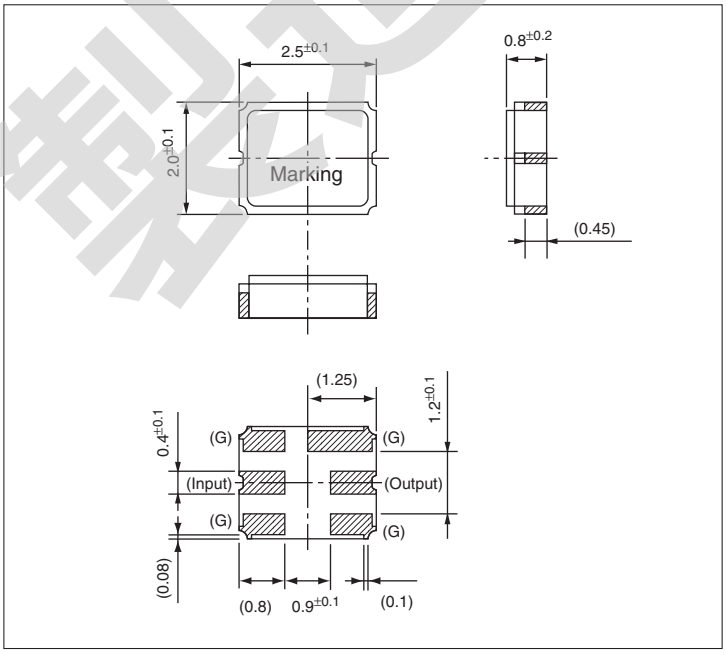
Application

- RF filter for Cellular Phone
  N-CDMA system (Rx)

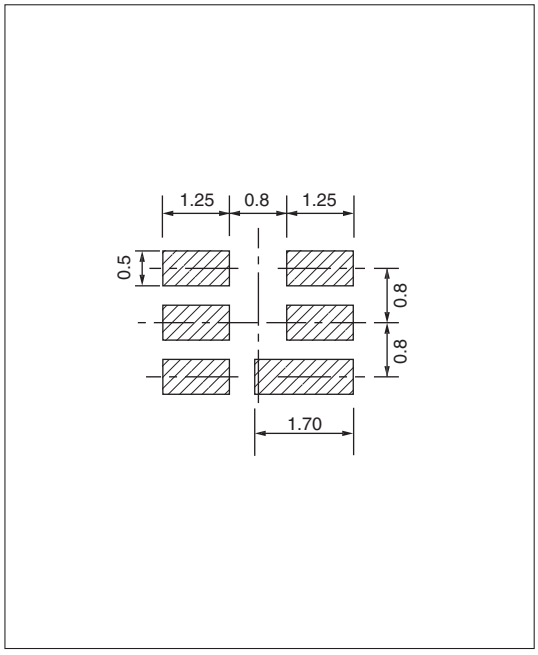
Specifications

Type	TQS-509A-7G
Nominal frequency	851 MHz
Pass band	832 to 870 MHz
Insertion loss	3.0 dB max.
Pass band ripple	2.0 dB max.
VSWR	2.5 max.
Stop band attenuation (Referred to through Level) 608 to 651 MHz 720 to 761 MHz 887 to 925 MHz	 40 dB min. 30 dB min. 18 dB min.
Terminating impedance	Input : 50 Ω//12nH , Output : 50 Ω
Operating temperature range	-20 °C to +75 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

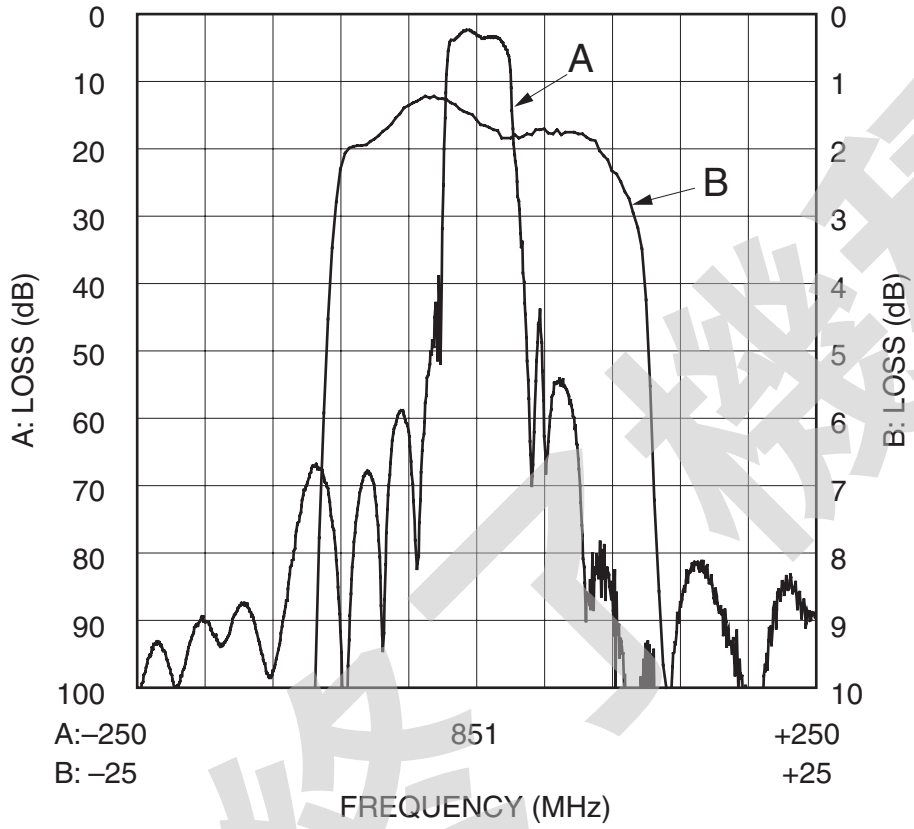


(2001. 6.)

RF Filter for Cellular Phone
N-CDMA system (Rx)

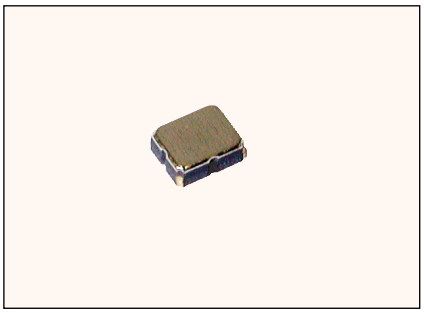
TQS-509A-7G
851 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-513A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High attenuation

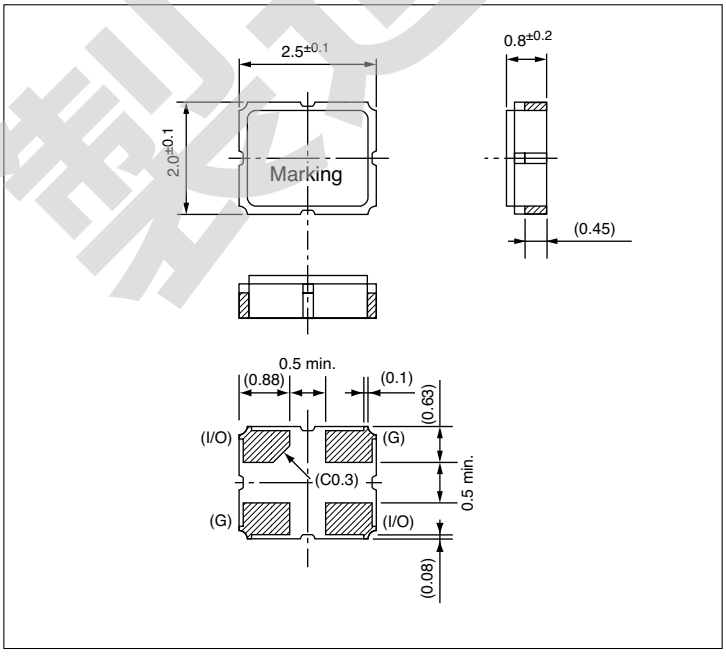
Application

- RF filter for Cellular Phone
  E-GSM system (Rx)

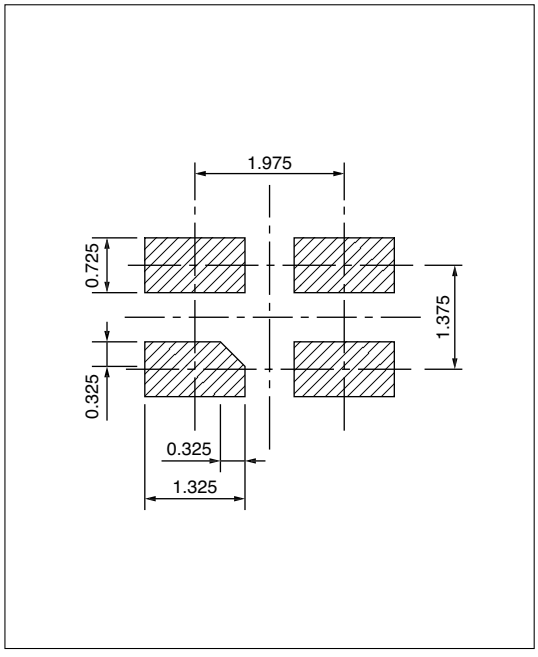
Specifications

Type	TQS-513A-7G
Nominal frequency	942.5 MHz
Pass band	925 to 960 MHz
Insertion loss	2.7 dB max.
Pass band ripple	1.5 dB max.
VSWR	2.3 max.
Stop band attenuation (Referred to through Level) DC to 880 MHz 880 to 915 MHz 980 to 1100 MHz 1100 to 1500 MHz 1500 to 2000 MHz	 45 dB min. 20 dB min. 25 dB min. 45 dB min. 35 dB min.
Terminating impedance	50 Ω
Operating temperature range	-20 °C to +75 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

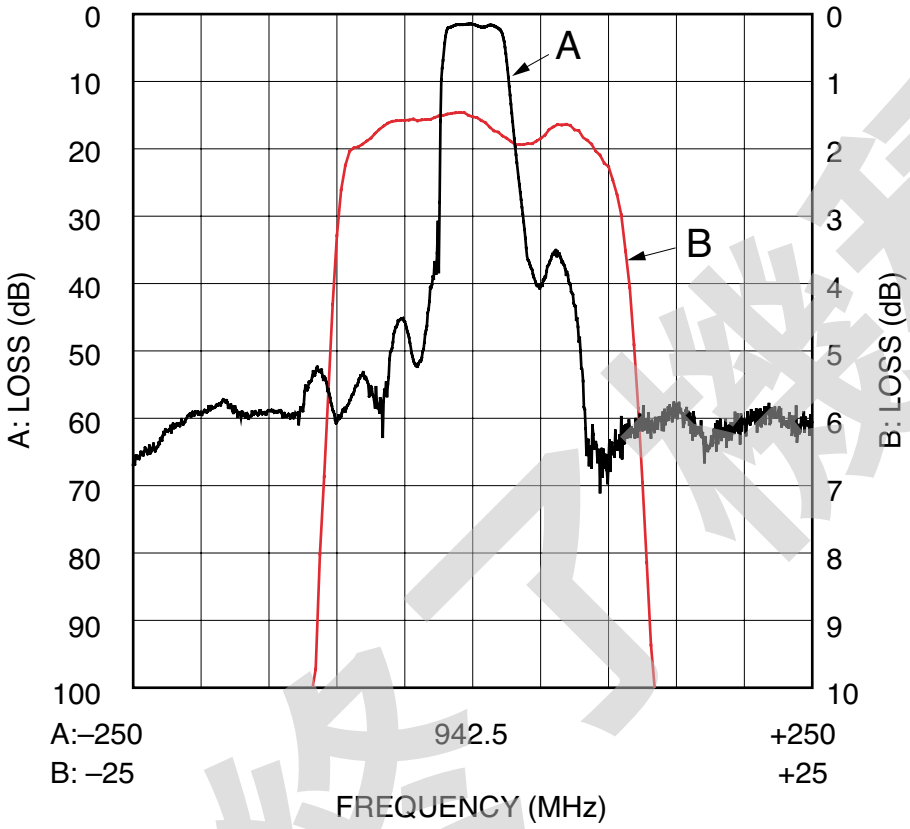


(2001.11.)

RF Filter for Cellular Phone
E-GSM system (Rx)

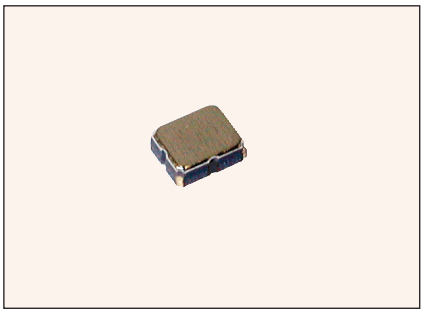
TQS-513A-7G
942.5 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-515A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High attenuation

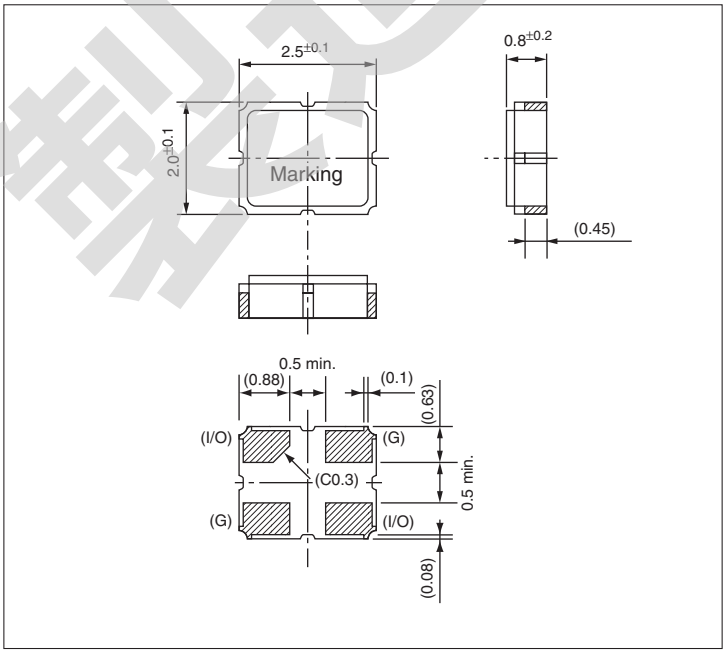
Application

- RF filter for Cellular Phone
  AMPS / TDMA / CDMA (Tx)

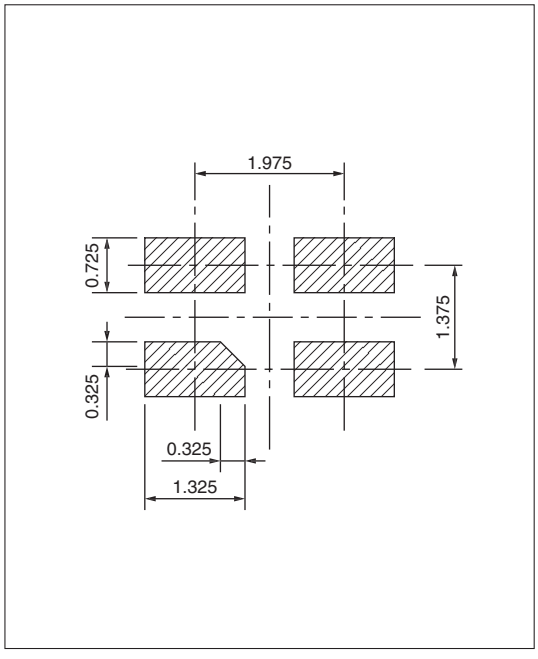
Specifications

Type	TQS-515A-7G
Nominal frequency	836.5 MHz
Pass band	824 to 849 MHz
Insertion loss	3.3 dB max.
Pass band ripple	1.8 dB max.
VSWR	2.2 max.
Stop band attenuation (Referred to through Level) DC to 800 MHz 869 to 910 MHz 910 to 2000 MHz 2000 to 3000 MHz	 45 dB min. 27 dB min. 40 dB min. 20 dB min.
Terminating impedance	50 Ω
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

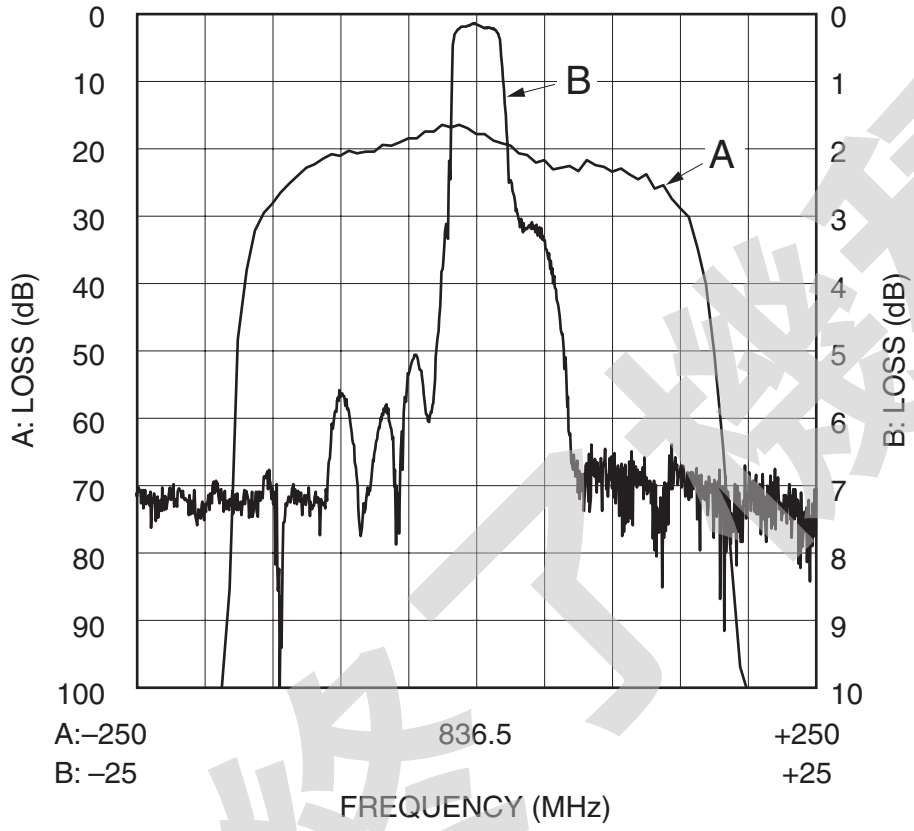


(2001. 5.)

RF Filter for Cellular Phone
AMPS / TDMA / CDMA system (Tx)

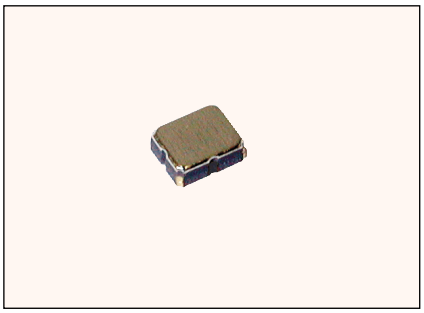
TQS-515A-7G
836.5 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-516C-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High attenuation

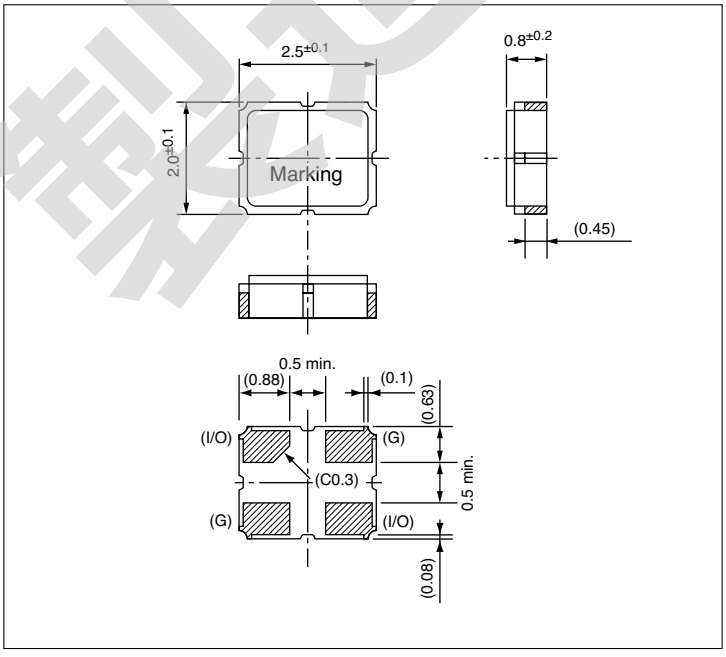
Application

- RF filter for Cellular Phone
  AMPS / TDMA / CDMA (Rx)

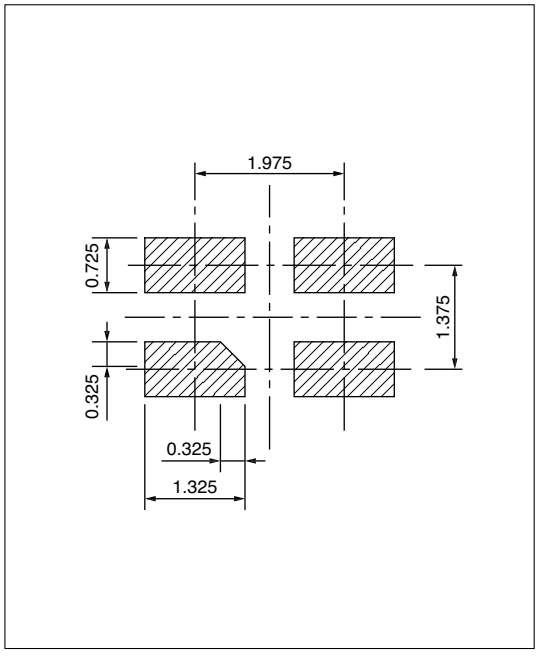
Specifications

Type	TQS-516C-7G
Nominal frequency	881.5 MHz
Pass band	869 to 894 MHz
Insertion loss	2.5 dB max.
Pass band ripple	1.5 dB max.
VSWR	2.0 max.
Stop band attenuation (Referred to through Level) DC to 849 MHz 914 to 954 MHz 954 to 1200 MHz 1200 to 2000 MHz 2000 to 3000 MHz	 40 dB min. 24 dB min. 50 dB min. 40 dB min. 20 dB min.
Terminating impedance	50 Ω
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

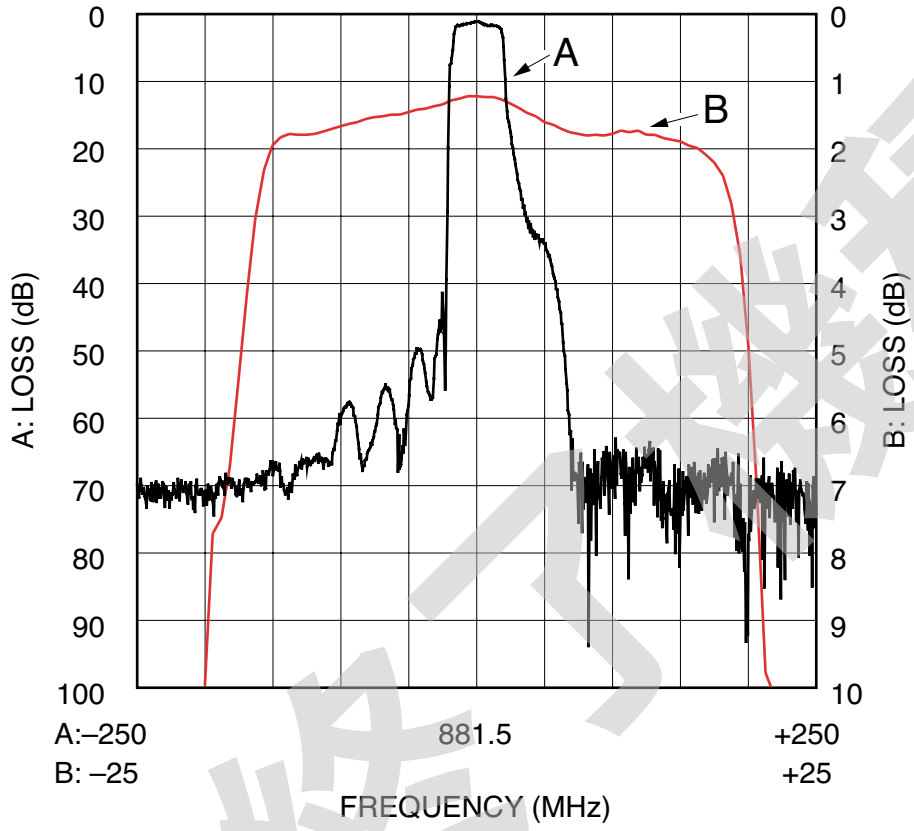


(2001.11.)

RF Filter for Cellular Phone
AMPS / TDMA / CDMA system (Rx)

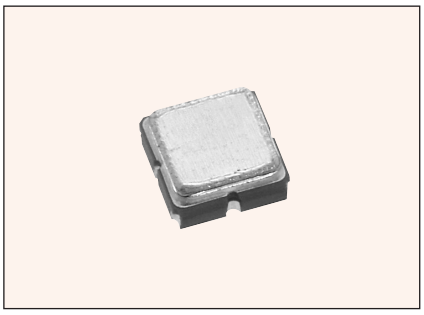
TQS-516C-7G
881.5 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-517A-7R

Features

- Miniature size : 3.0(W) x 3.0(D) x 1.1(H)mm
- High selectivity
- Dual Filter

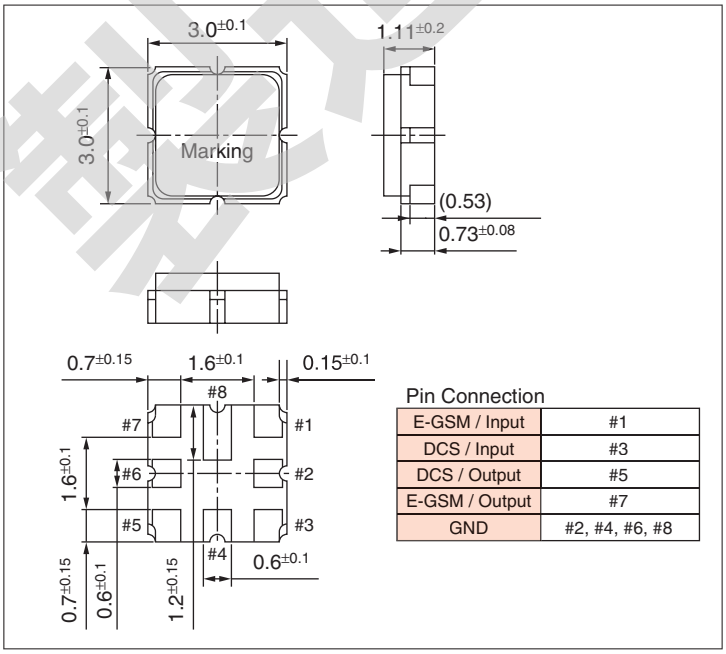
Application

- RF Dual Filter for Cellular Phone
  E-GSM and DCS system (Rx)

Specifications

Type	TQS-517A-7R	
Nominal frequency	942.5 MHz : E-GSM	1842.5 MHz : DCS
Pass band	925 to 960 MHz	1,805 to 1,880 MHz
Insertion loss	3.0 dB max.	4.0 dB max.
Pass band ripple	2.0 dB max.	2.0 dB max.
Stop band attenuation (Referred to through Level)	DC to 905 MHz : 22 dB min. 905 to 915 MHz : 10 dB min. 980 to 1,050 MHz : 13 dB min. 1,050 to 2,500 MHz : 25 dB min. 2,500 to 3,000 MHz : 15 dB min.	DC to 1,710 MHz : 25 dB min. 1,710 to 1,785 MHz : 12 dB min. 1,920 to 1,980 MHz : 14 dB min. 1,980 to 3,000 MHz : 15 dB min.
Terminating impedance	Input : 50 Ω , Output : 50 Ω	Input : 50 Ω , Output : 50 Ω
Operating temperature range)	-20 °C to +75 °C	

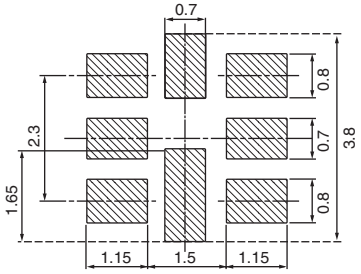
Package Outlines [Dimensions in mm]



Pin Connection

E-GSM / Input	#1
DCS / Input	#3
DCS / Output	#5
E-GSM / Output	#7
GND	#2, #4, #6, #8

Footprint [Dimensions in mm]

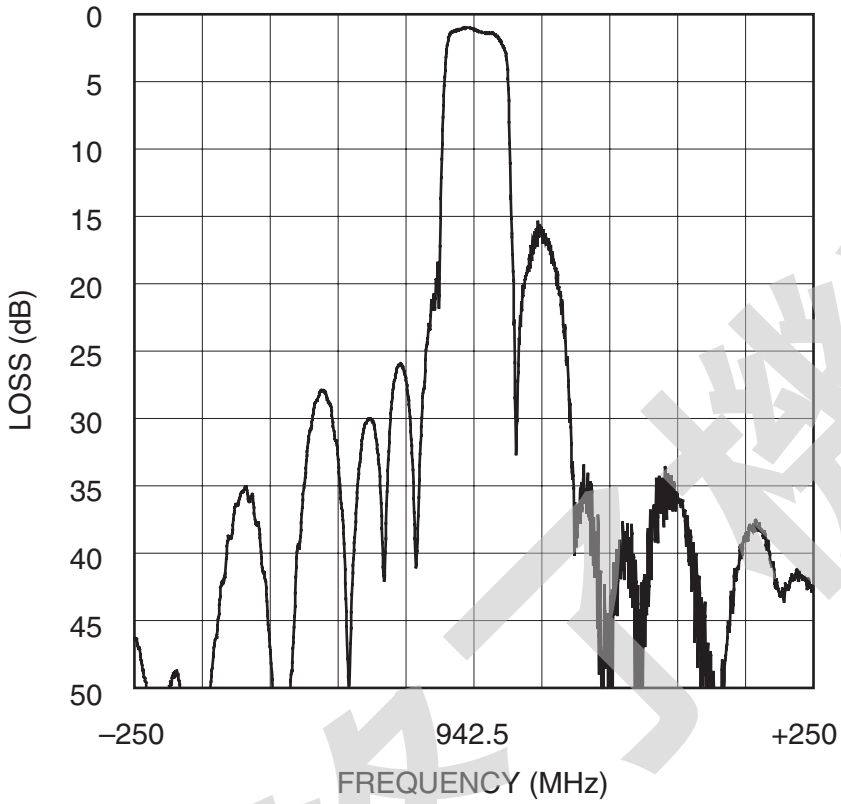


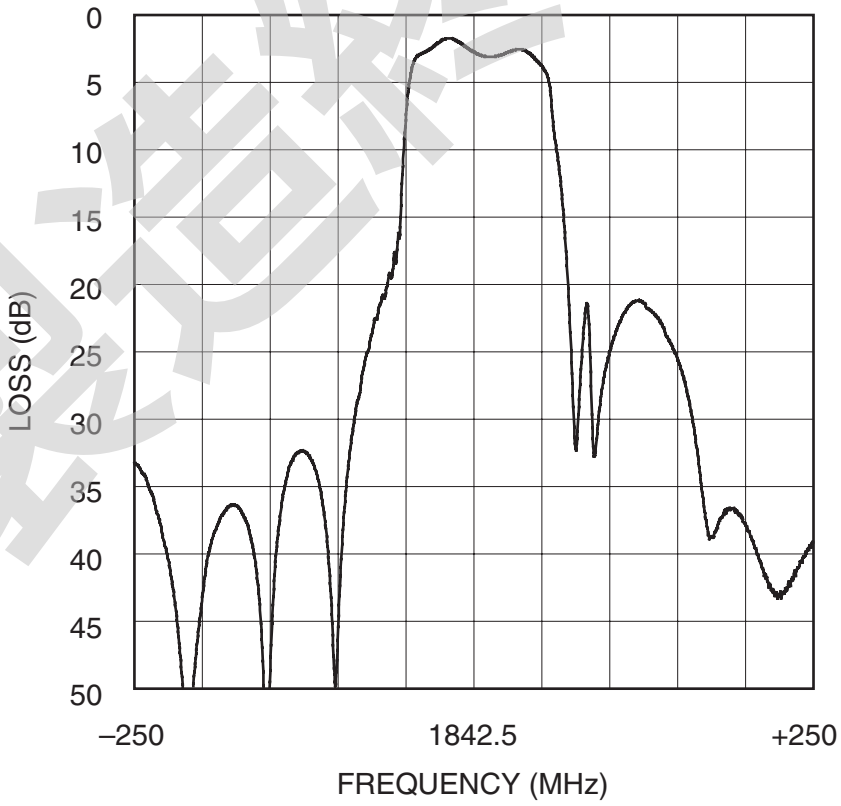
(2001. 2.)

RF Dual Filter for Cellular Phone
E-GSM and DCS system (Rx)

TQS-517A-7R
942.5 and 1842.5 MHz

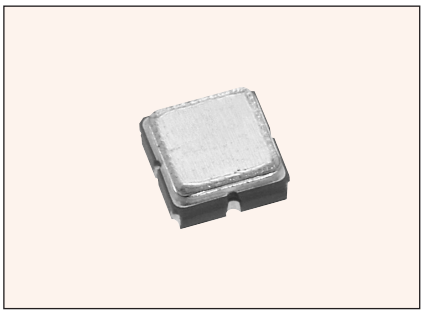
Electrical Data





TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-520A-7R

Features

- Miniature size : 3.0(W) x 3.0(D) x 1.1(H)mm
- High selectivity
- Dual Filter

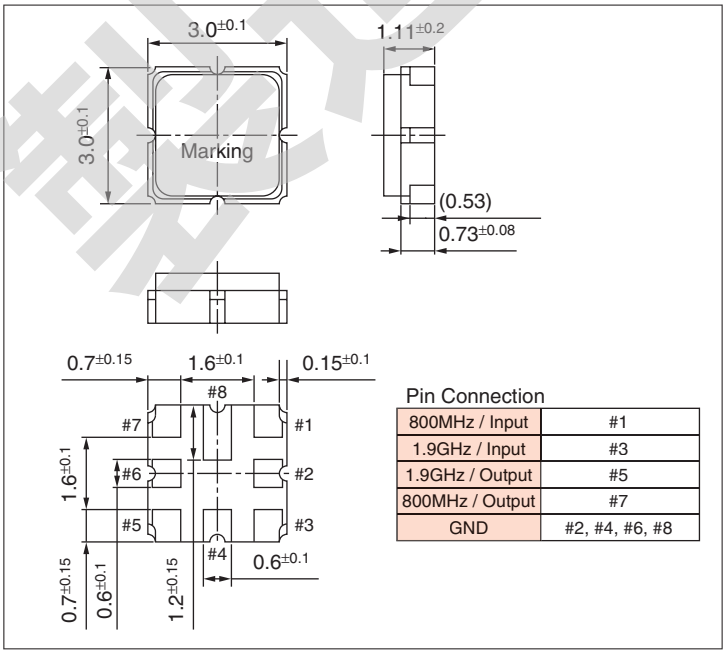
Application

- RF Dual Filter for Cellular Phone
  AMPS / CDMA / TDMA / GSM system (Rx)

Specifications

Type	TQS-520A-7R	
Frequency range	800 MHz	1.9 GHz
Pass band	869 to 894 MHz	1,930 to 1,990 MHz
Insertion loss	3.3 dB max.	3.5 dB max.
Pass band ripple	2.0 dB max.	2.0 dB max.
VSWR in pass band	2.0 dB max.	3.0 dB max.
Stop band attenuation (Referred to through Level)	DC to 849 MHz : 40 dB min. 914 to 954 MHz : 27 dB min. 954 to 1,500 MHz : 40 dB min. 1,500 to 3,000 MHz : 10 dB min.	DC to 1,850 MHz : 20 dB min. 1,850 to 1,910 MHz : 10 dB min. 2,070 to 2,130 MHz : 15 dB min. 2,130 to 3,000 MHz : 20 dB min. 3,000 to 6,000 MHz : 5 dB min.
Terminating impedance	Input : 50 Ω , Output : 50 Ω	Input : 50 Ω , Output : 50 Ω
Operating temperature range)	-30 °C to +85 °C	

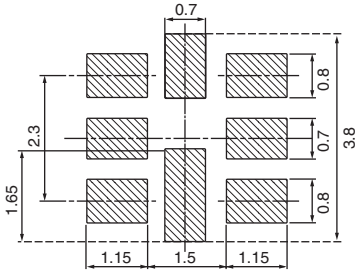
Package Outlines [Dimensions in mm]



Pin Connection

800MHz / Input	#1
1.9GHz / Input	#3
1.9GHz / Output	#5
800MHz / Output	#7
GND	#2, #4, #6, #8

Footprint [Dimensions in mm]

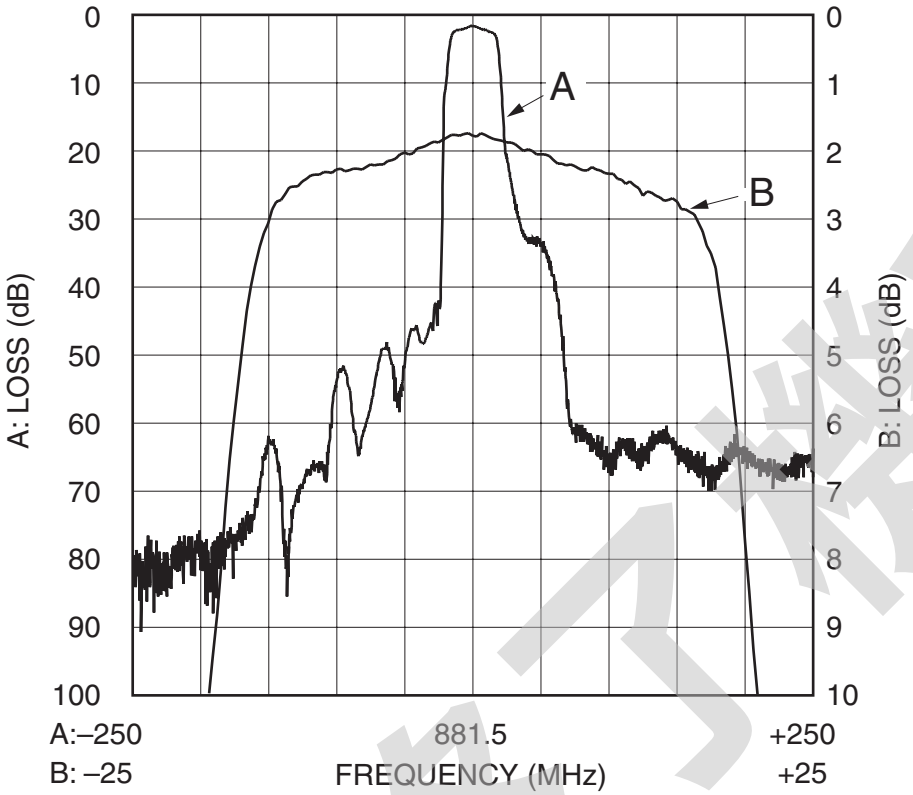


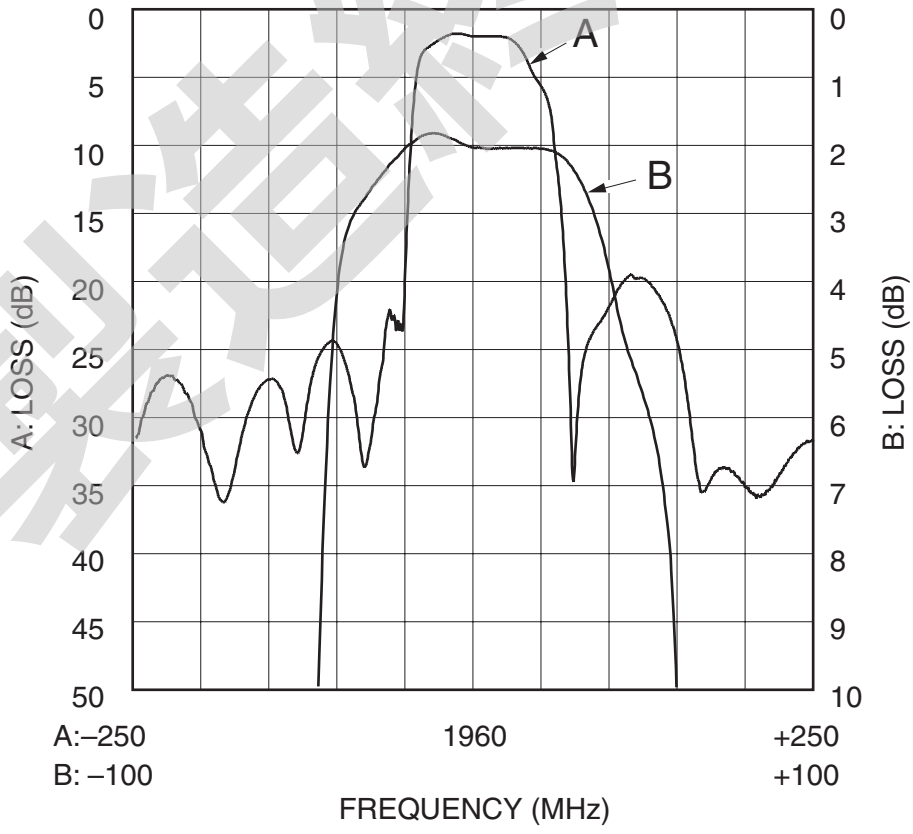
(2001. 6.)

RF Dual Filter for Cellular Phone
AMPS / CDMA / TDMA / GSM system (Rx)

TQS-520A-7R
800MHz and 1.9 GHz

Electrical Data

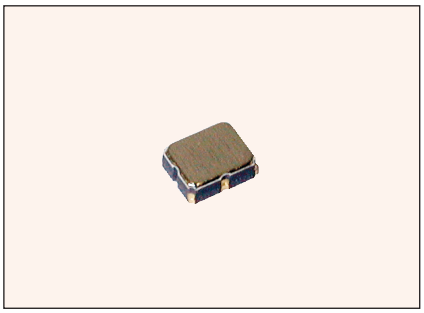




(2001. 6.)

TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-521A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- Low Insertion Loss
- Balanced Output

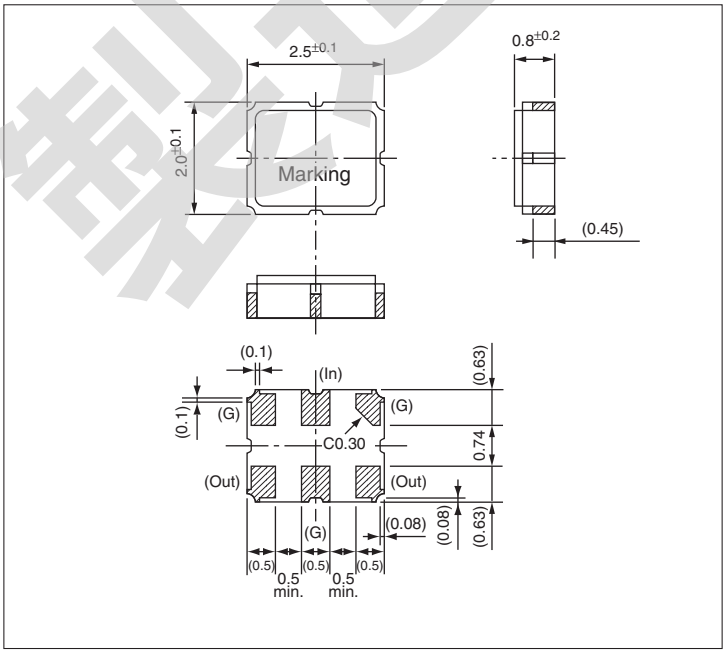
Application

- RF filter for Cellular Phone
  E-GSM system (Rx)

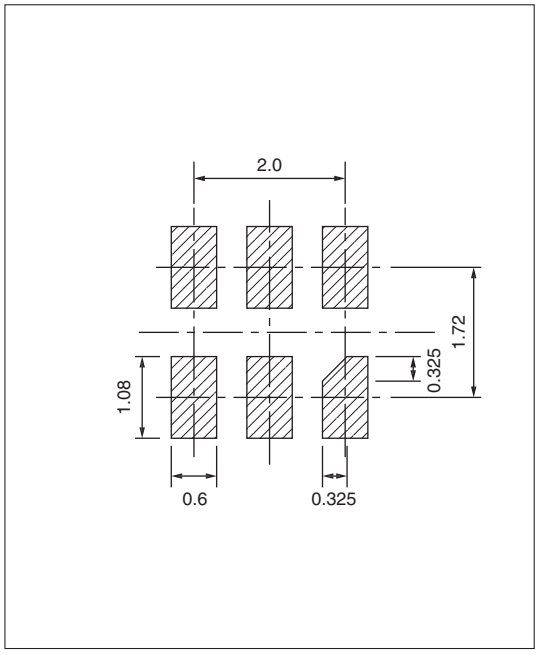
Specifications

Type	TQS-521A-7G
Nominal frequency	942.5 MHz
Pass band	925 to 960 MHz
Insertion loss	4.0 dB max.
Pass band ripple	2.0 dB max.
VSWR	2.5 max.
Stop band attenuation (Referred to through Level) DC to 880 MHz 880 to 915 MHz 980 to 1100 MHz 1100 to 2000 MHz 2000 to 3000 MHz	 50 dB min. 20 dB min. 25 dB min. 50 dB min. 40 dB min.
Terminating impedance	Input : Unbalanced 50 Ω Output : Balanced 200 Ω // 39nH
Operating temperature range	-20 °C to +75 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

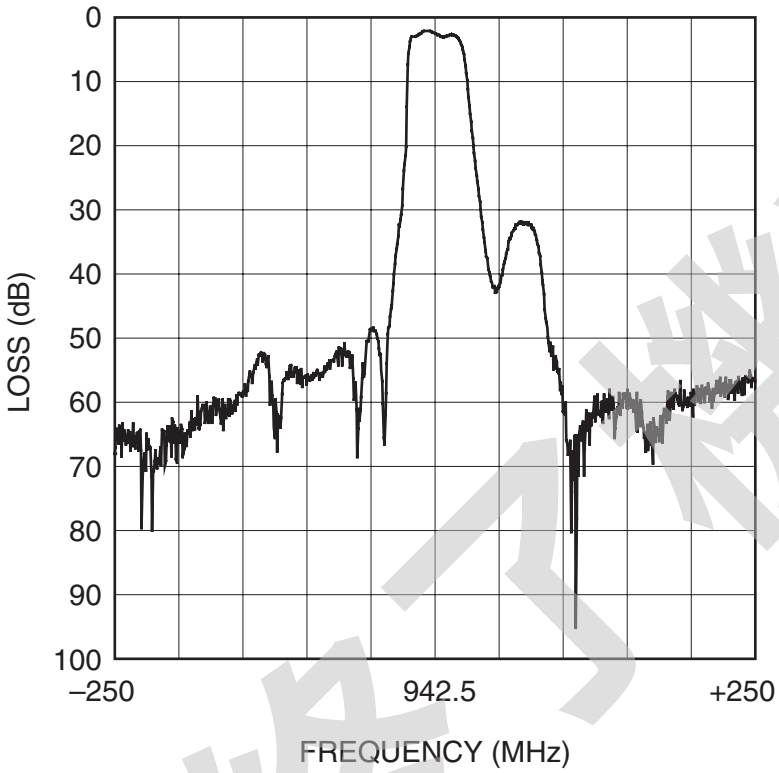


(2001. 7.)

RF Filter (Balanced Output) for Cellular Phone
E-GSM system (Rx)

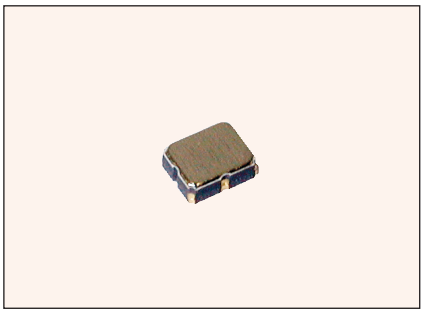
TQS-521A-7G
942.5 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-525A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- Low Insertion Loss
- Balanced Output

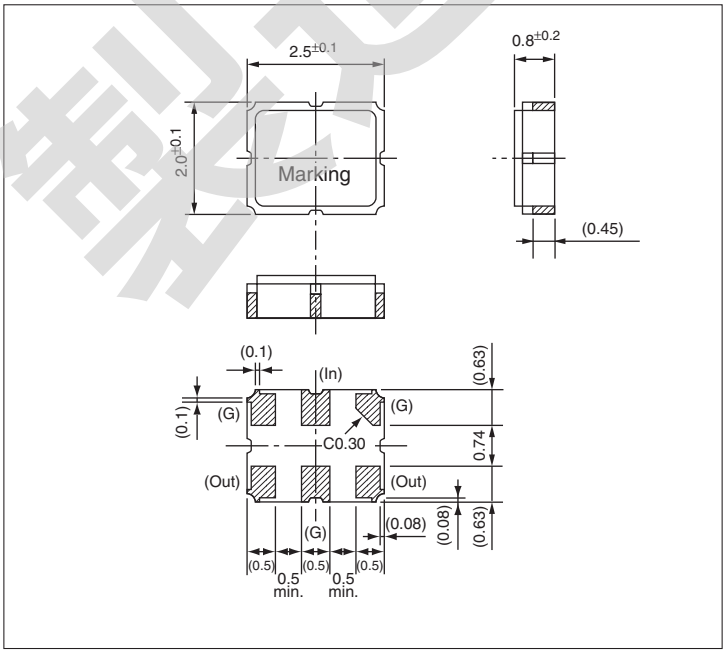
Application

- RF filter for Cellular Phone
  AMPS / TDMA / CDMA / GSM system (Rx)

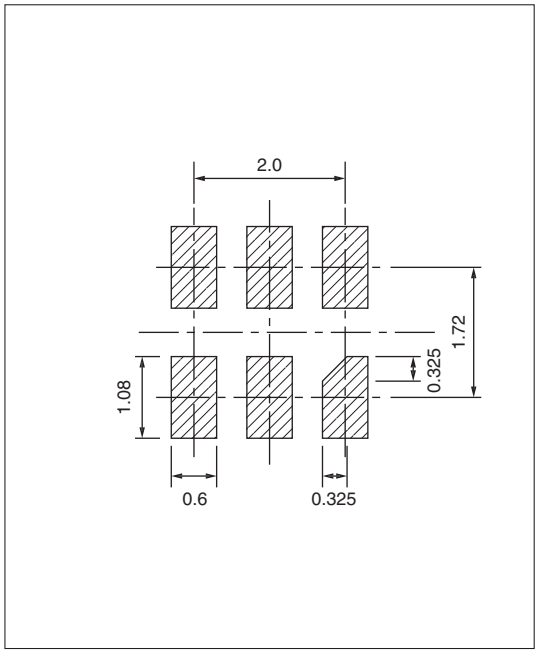
Specifications

Type	TQS-525A-7G
Nominal frequency	881.5 MHz
Pass band	869 to 894 MHz
Insertion loss	3.0 dB max.
Pass band ripple	1.3 dB max.
VSWR	2.0 max.
Stop band attenuation (Referred to through Level) DC to 849 MHz 914 to 954 MHz 954 to 1500 MHz 1500 to 3000 MHz	 40 dB min. 23 dB min. 40 dB min. 30 dB min.
Terminating impedance	Input : Unbalanced 50 Ω Output : Balanced 50 Ω
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

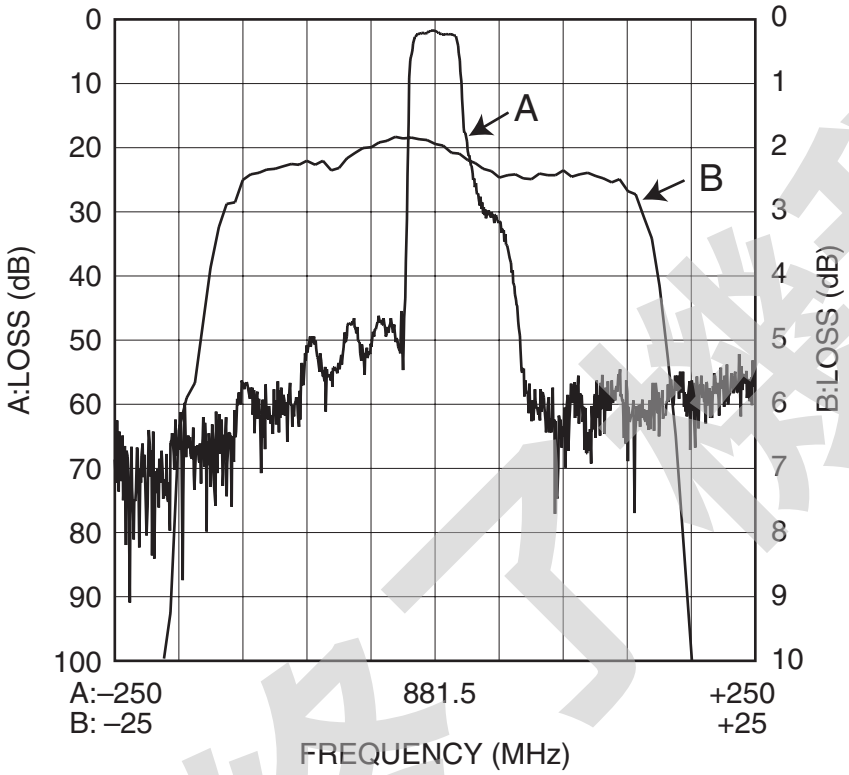


(2001. 7.)

RF Filter (Balanced Output) for Cellular Phone
AMPS / TDMA / CDMA / GSM system (Rx)

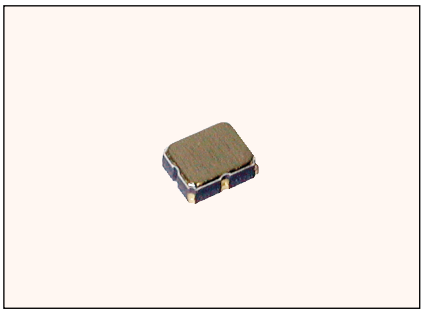
TQS-525A-7G
881.5 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-527A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High attenuation
- Balanced Output

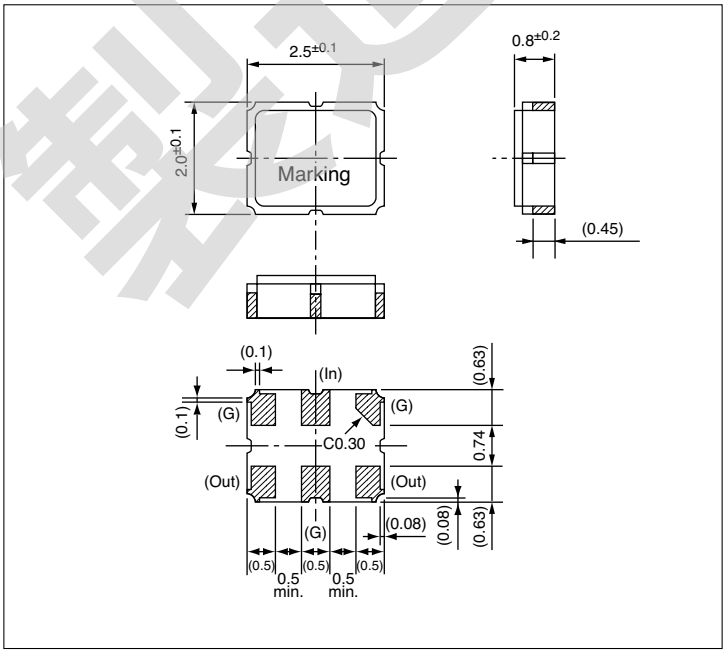
Application

- RF filter for Cellular Phone
  for E-GSM system (Rx)

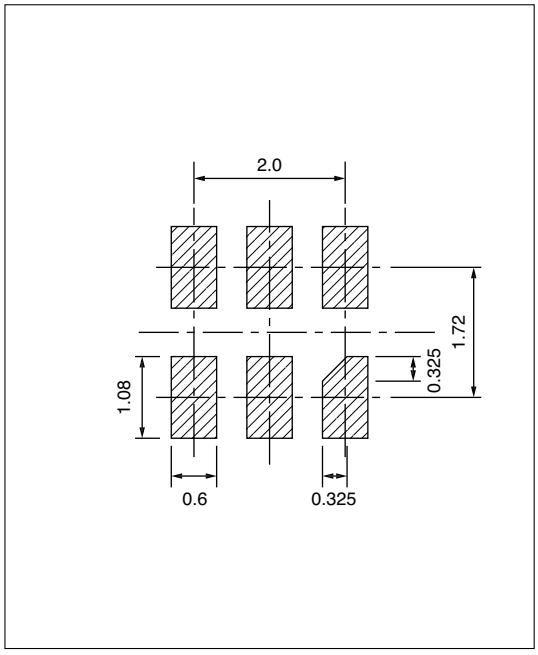
Specifications

Type	TQS-527A-7G
Nominal frequency	942.5 MHz
Pass band	925 to 960 MHz
Insertion loss	3.0 dB max.
Pass band ripple	1.5 dB max.
VSWR	2.5 max.
Phase imbalance	±10° max.
Amplitude imbalance	±1.0dB max.
Stop band attenuation (Referred to through Level) DC to 880 MHz 880 to 915 MHz 980 to 1100 MHz 1100 to 2000 MHz 2000 to 3000 MHz	 45 dB min. 20 dB min. 20 dB min. 40 dB min. 30 dB min.
Terminating impedance	Input : Unbalanced 50 Ω Output : Balanced 50 Ω
Operating temperature range	-20 °C to +75 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

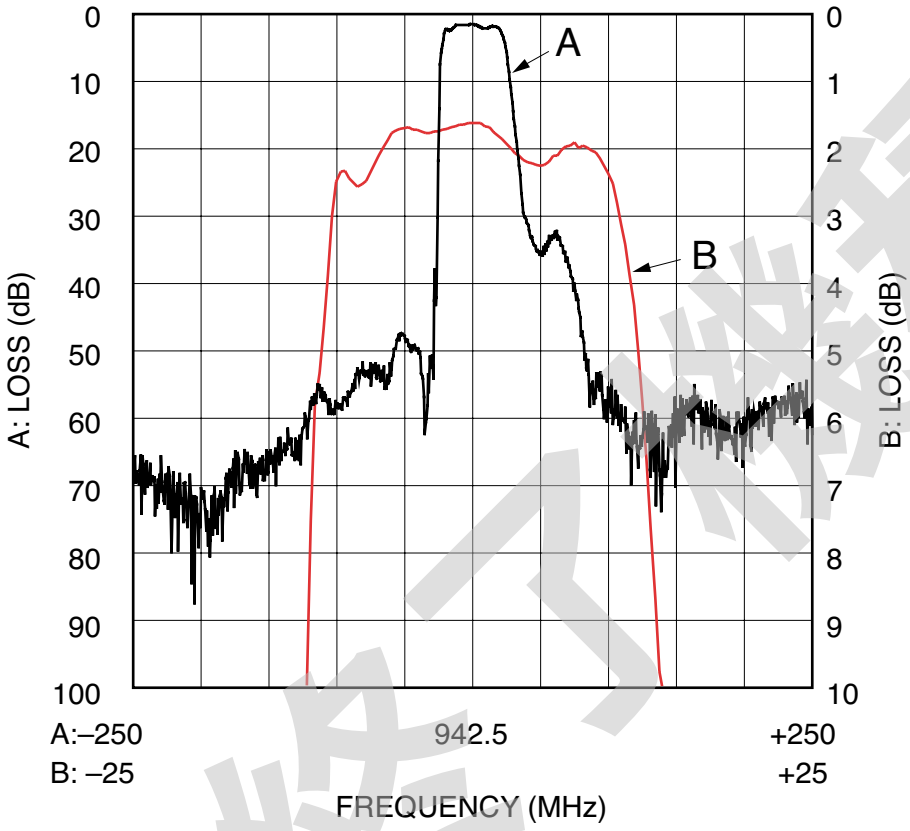


(2001.11.)

RF Filter (Balanced Output) for Cellular Phone
E-GSM system (Rx)

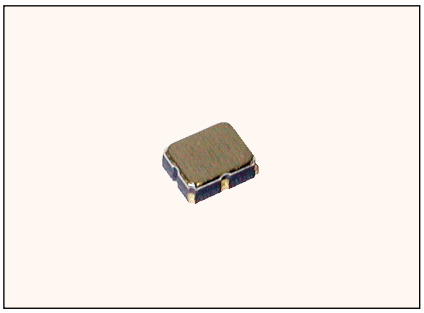
TQS-527A-7G
942.5 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-528A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High attenuation
- Balanced Output

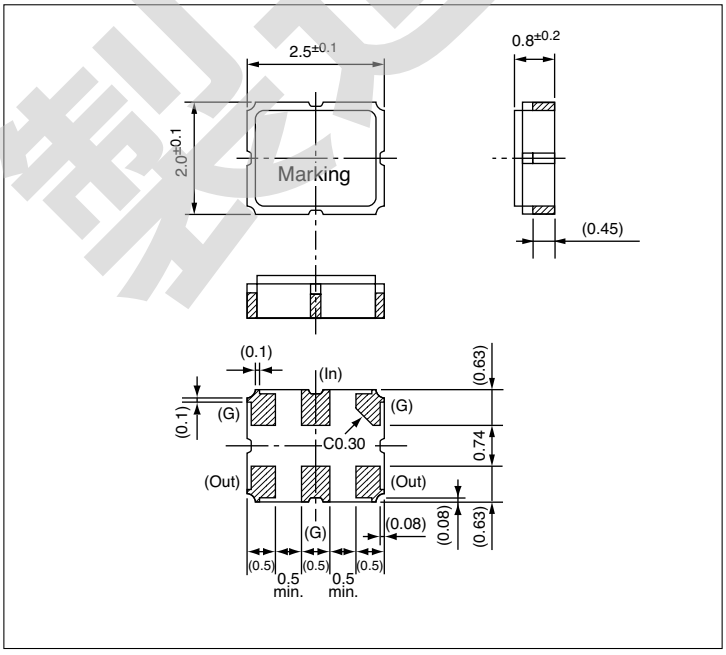
Application

- RF filter for Cellular Phone
  for E-GSM system (Rx)

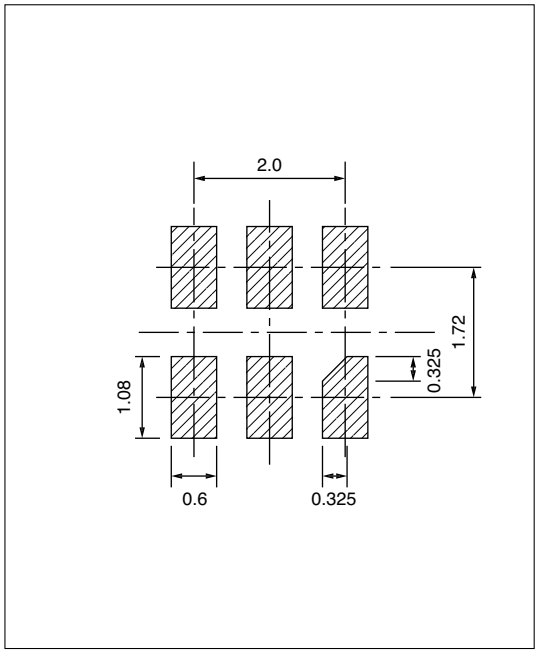
Specifications

Type	TQS-528A-7G
Nominal frequency	942.5 MHz
Pass band	925 to 960 MHz
Insertion loss	3.0 dB max.
Pass band ripple	1.5 dB max.
VSWR	2.5 max.
Phase imbalance	±10° max.
Amplitude imbalance	±1.0dB max.
Stop band attenuation (Referred to through Level) DC to 880 MHz 880 to 915 MHz 980 to 1100 MHz 1100 to 2000 MHz 2000 to 3000 MHz	 45 dB min. 20 dB min. 20 dB min. 40 dB min. 20 dB min.
Terminating impedance	Input : Unbalanced 50 Ω Output : Balanced 100 Ω
Operating temperature range	-20 °C to +75 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

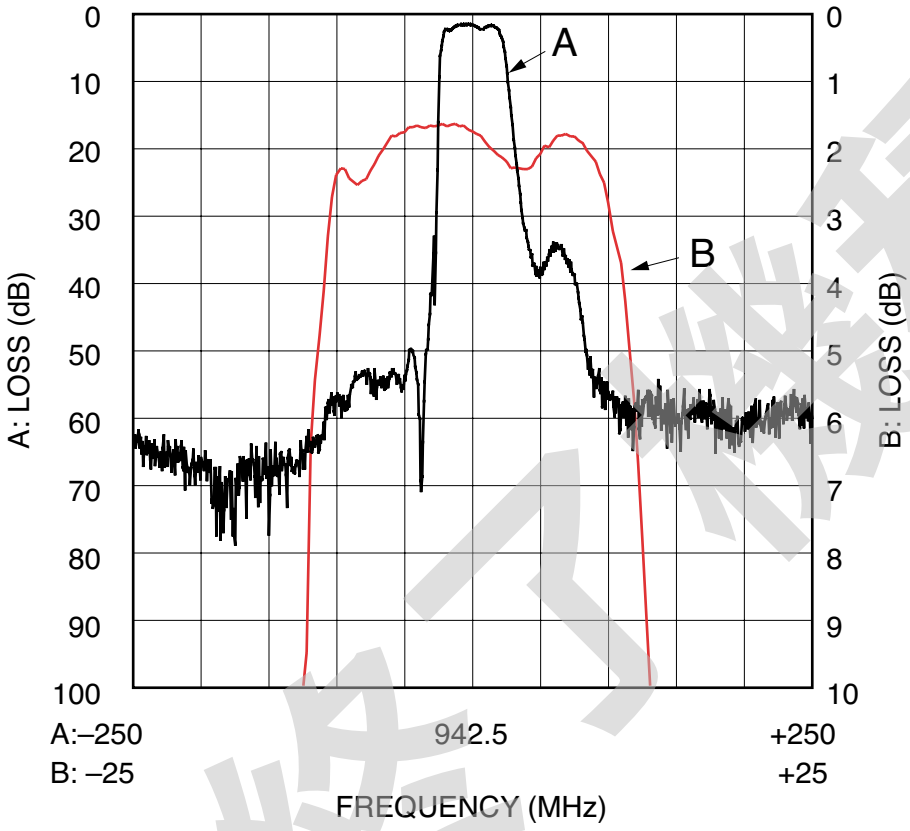


(2001.11.)

RF Filter (Balanced Output) for Cellular Phone
E-GSM system (Rx)

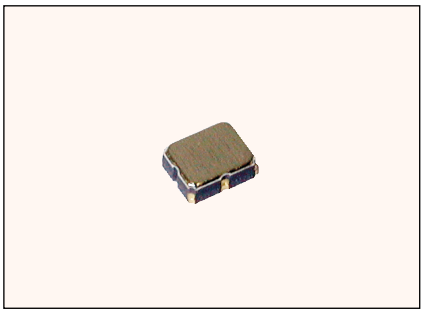
TQS-528A-7G
942.5 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-529A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- Low Insertion Loss
- Balanced Output

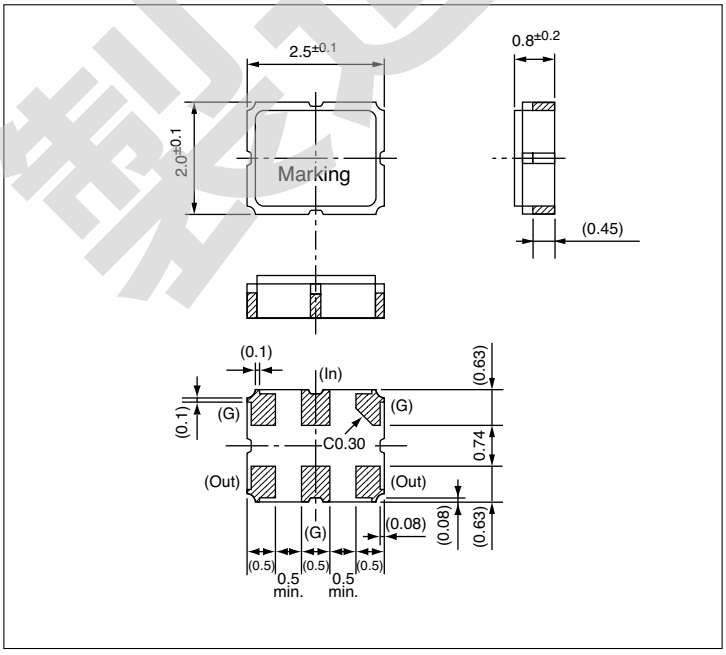
Application

- RF filter for GPS

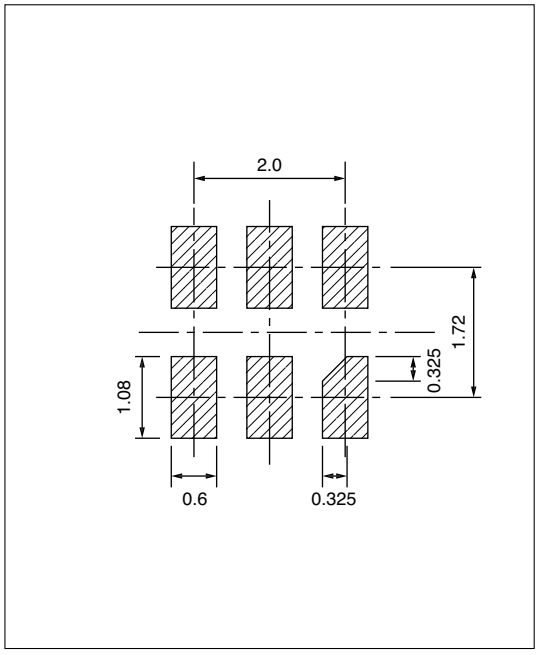
Specifications

Type	TQS-529A-7G
Nominal frequency	1575.42 MHz
Pass band	1573.42 to 1577.42 MHz
Insertion loss	1.7 dB max.
Pass band ripple	0.7 dB max.
VSWR	2.0 max.
Phase imbalance	±15° max.
Amplitude imbalance	±1.5dB max.
Stop band attenuation (Referred to through Level) DC to 1501 MHz 1501 to 1525 MHz 1626 to 1661 MHz 1661 to 2100 MHz 2100 to 2400 MHz 2400 to 6000 MHz	 24 dB min. 20 dB min. 15 dB min. 23 dB min. 20 dB min. 25 dB min.
Terminating impedance	Input : Unbalanced 50 Ω Output : Balanced 100 Ω
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

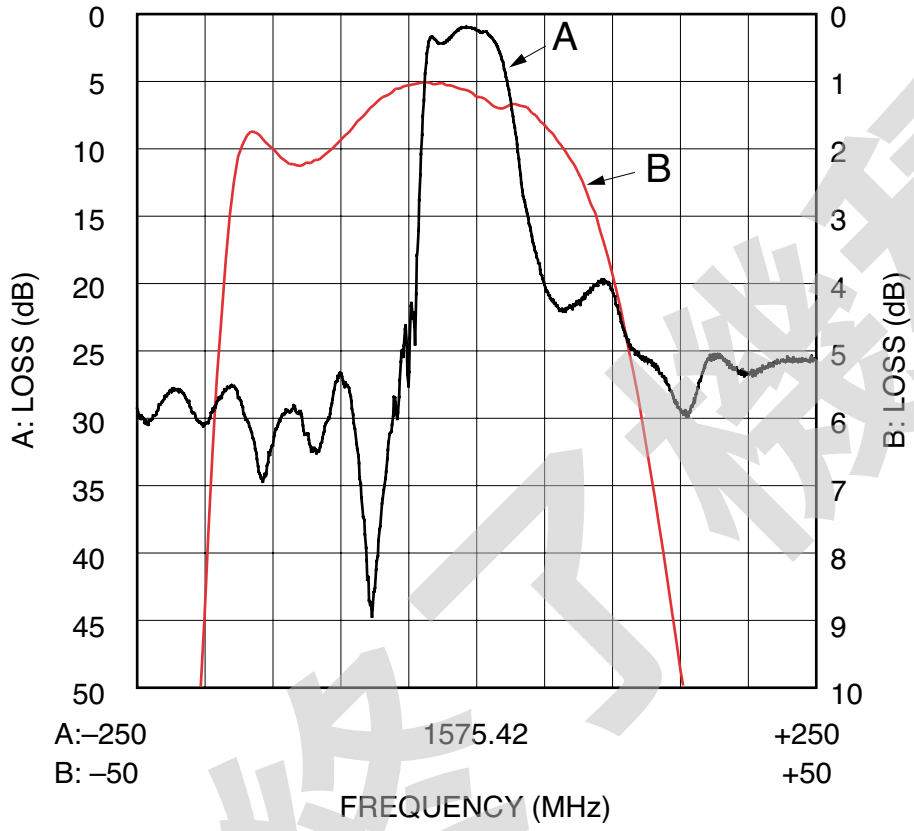


(2002. 1.)

RF Filter (Balanced Output)
for GPS

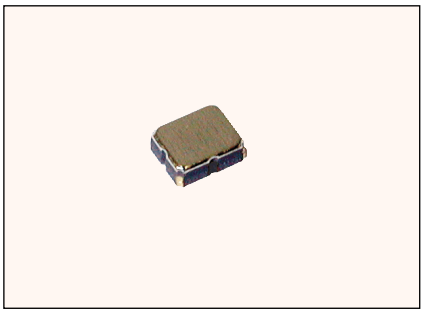
TQS-529A-7G
1575.42 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-530A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- High attenuation

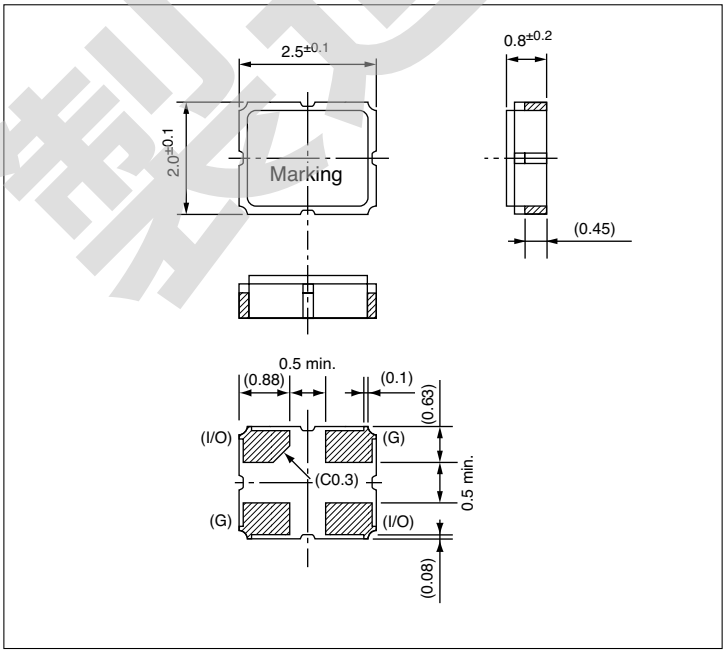
Application

- RF filter for Cellular Phone
  AMPS / TDMA / CDMA / GSM (Tx)

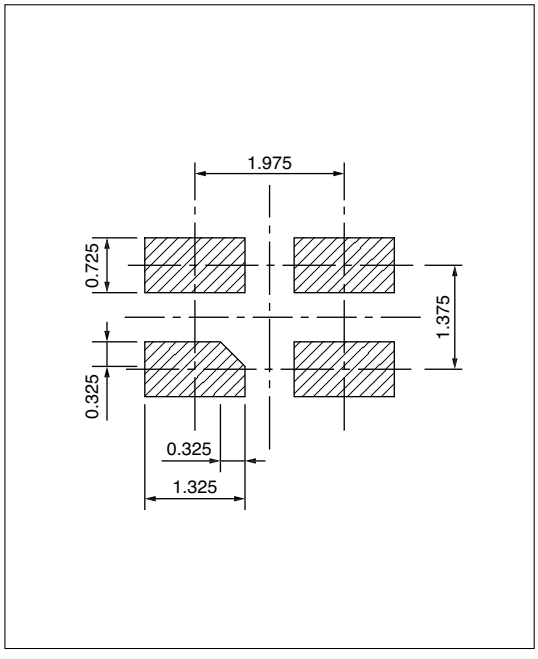
Specifications

Type	TQS-530A-7G
Nominal frequency	836.5 MHz
Pass band	824 to 849 MHz
Insertion loss	2.8 dB max.
Pass band ripple	1.6 dB max.
VSWR	2.0 max.
Stop band attenuation (Referred to through Level) DC to 800 MHz 869 to 910 MHz 910 to 2000 MHz 2000 to 3000 MHz	 45 dB min. 38 dB min. 45 dB min. 20 dB min.
Terminating impedance	50 Ω
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

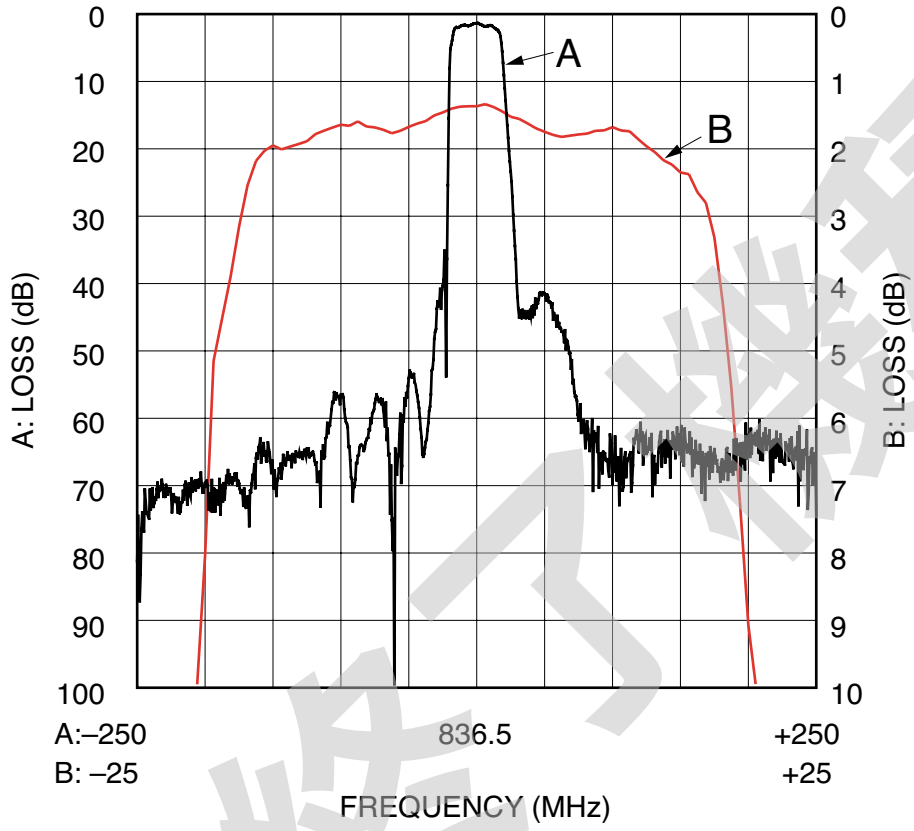


(2001.12.)

RF Filter for Cellular Phone
AMPS / TDMA / CDMA / GSM system (Tx)

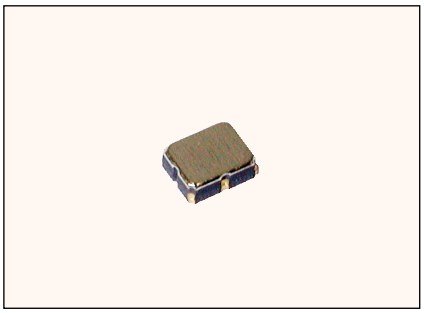
TQS-530A-7G
836.5 MHz

Electrical Data



TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-535A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- Low Insertion Loss
- Balanced Output

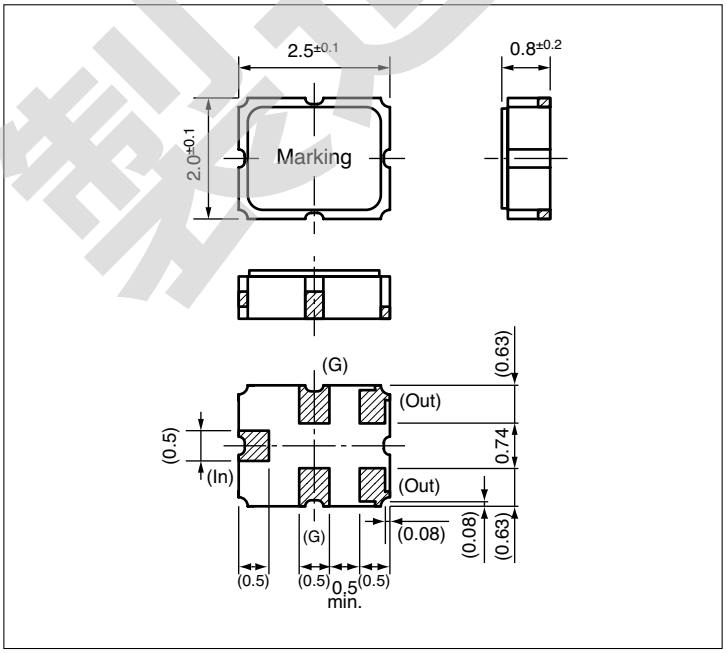
Application

- RF filter for Cellular Phone
  AMPS system (Rx)

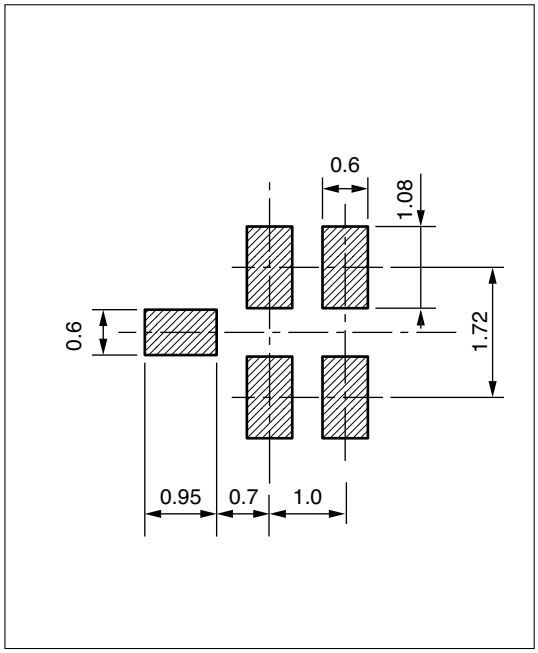
Specifications

Type	TQS-535A-7G
Nominal frequency	881.5 MHz
Pass band	869 to 894 MHz
Insertion loss	3.0 dB max.
Pass band ripple	1.5 dB max.
VSWR	2.0 max.
Phase imbalance	±10° max.
Amplitude imbalance	±1.0dB max.
Stop band attenuation (Referred to through Level) DC to 824 MHz 824 to 849 MHz 915 to 1000 MHz 1000 to 1738 MHz 1738 to 1788 MHz 1788 to 3000 MHz	 35 dB min. 30 dB min. 32 dB min. 40 dB min. 30 dB min. 37 dB min.
Terminating impedance	Input : Unbalanced 50 Ω Output : Balanced 100 Ω
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

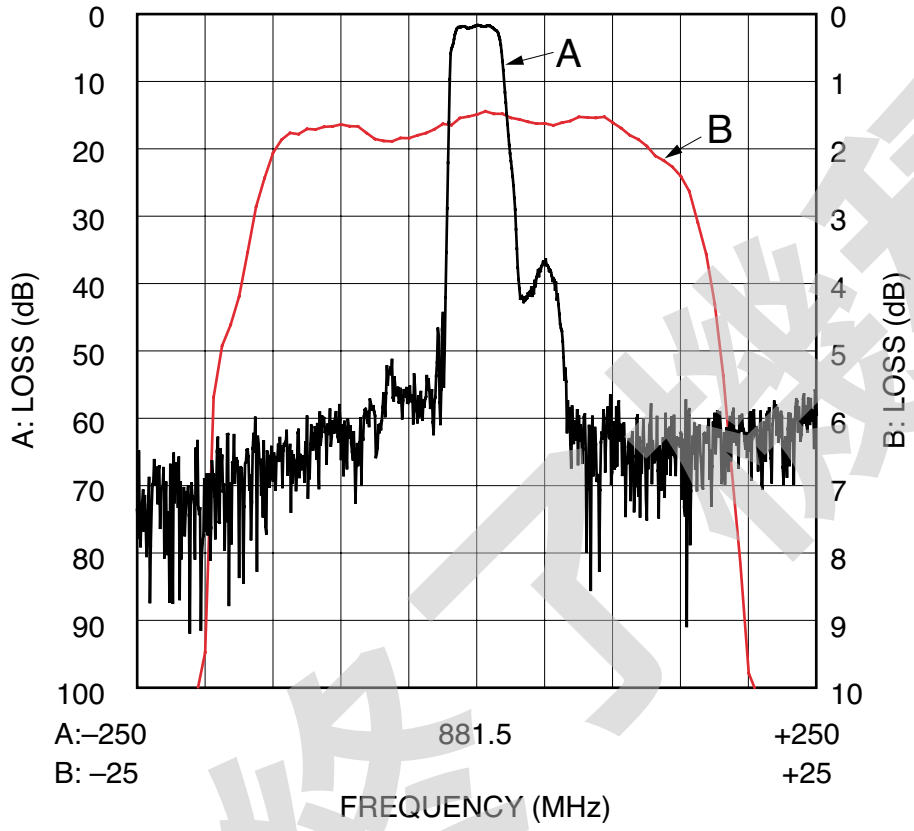


(2002. 6.)

RF Filter for Cellular Phone
AMPS system (Rx)

TQS-535A-7G
881.5 MHz

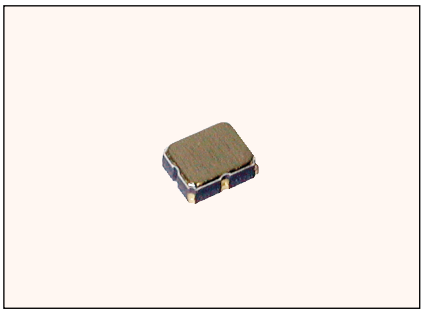
Electrical Data



(2002. 6.)

TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-536A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- Low Insertion Loss
- Balanced Output

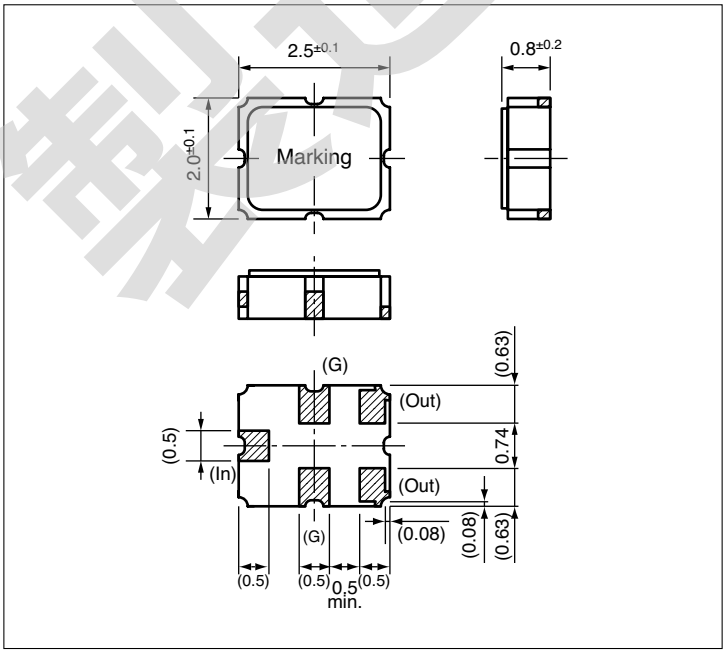
Application

- RF filter for Cellular Phone
  PCS system (Rx)

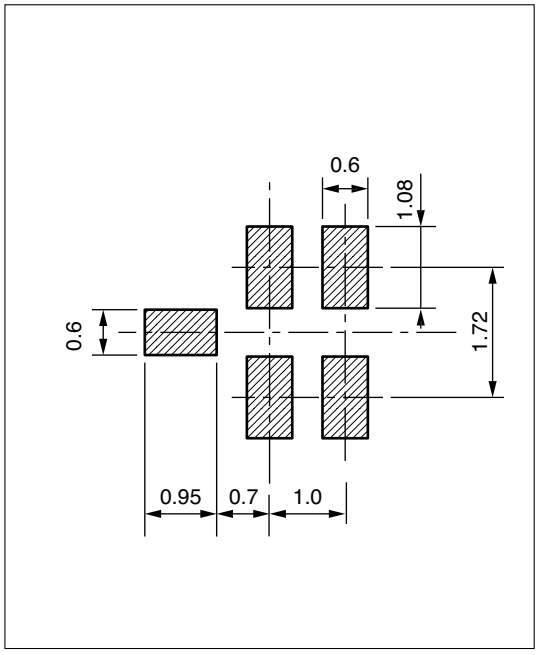
Specifications

Type	TQS-536A-7G
Nominal frequency	1960 MHz
Pass band	1930 to 1990 MHz
Insertion loss	4.1 dB max.
Pass band ripple	2.0 dB max.
VSWR	3.0 max.
Phase imbalance	±20° max.
Amplitude imbalance	±2.0dB max.
Stop band attenuation (Referred to through Level) DC to 1750 MHz 1850 to 1910 MHz 2040 to 2140 MHz 2140 to 3860 MHz 3860 to 3980 MHz 3980 to 6000 MHz	 30 dB min. 10 dB min. 17 dB min. 25 dB min. 20 dB min. 15 dB min.
Terminating impedance	Input : Unbalanced 50 Ω Output : Balanced 100 Ω
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]

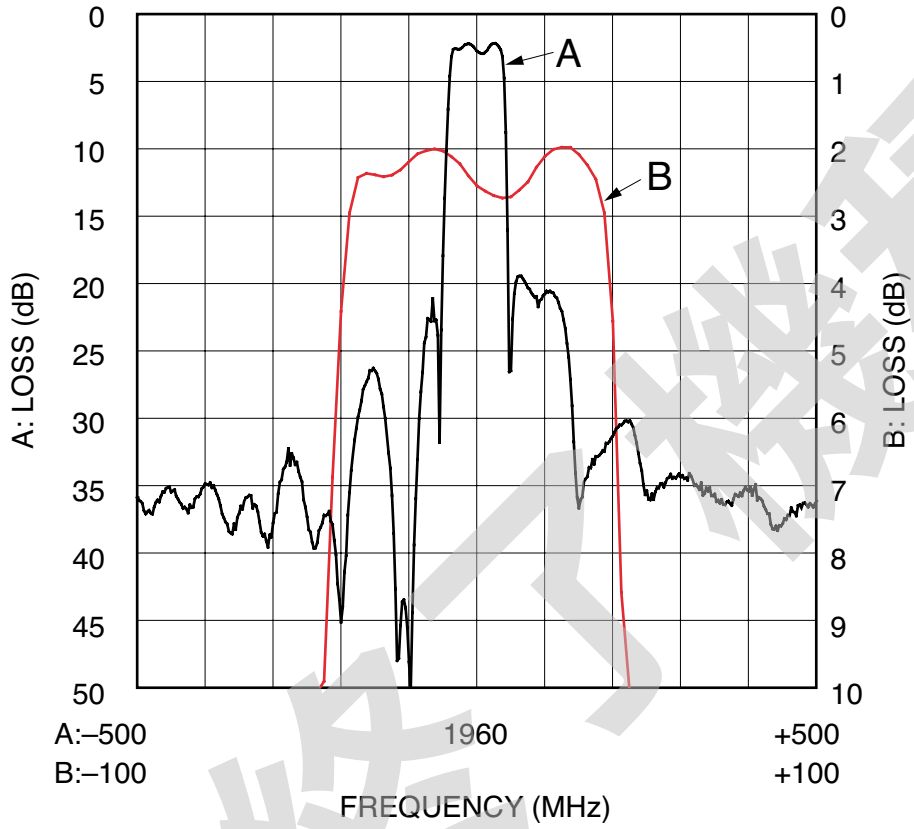


(2002. 6.)

RF Filter for Cellular Phone
PCS system (Rx)

TQS-536A-7G
1960 MHz

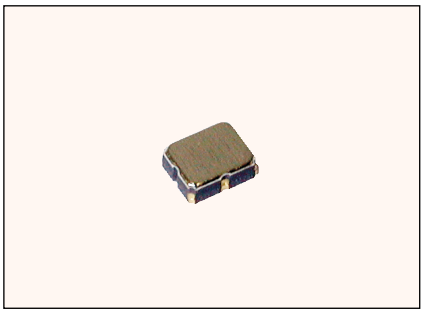
Electrical Data



(2002. 6.)

TOYOCOM

Surface Acoustic Wave Filter (SAW Filter)



TQS-537A-7G

Features

- Ultra miniature size : 2.5(W) x 2.0(D) x 0.8(H)mm
- Low Insertion Loss
- Balanced Output

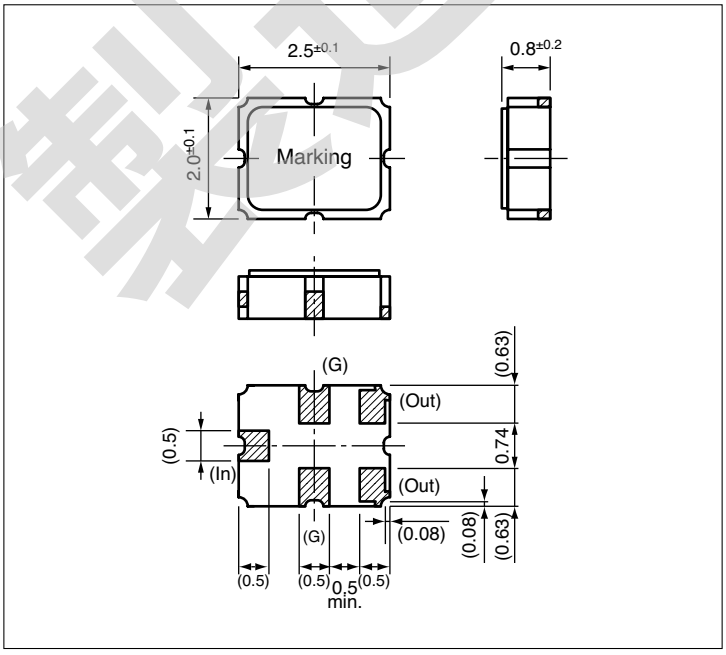
Application

- RF filter for GPS

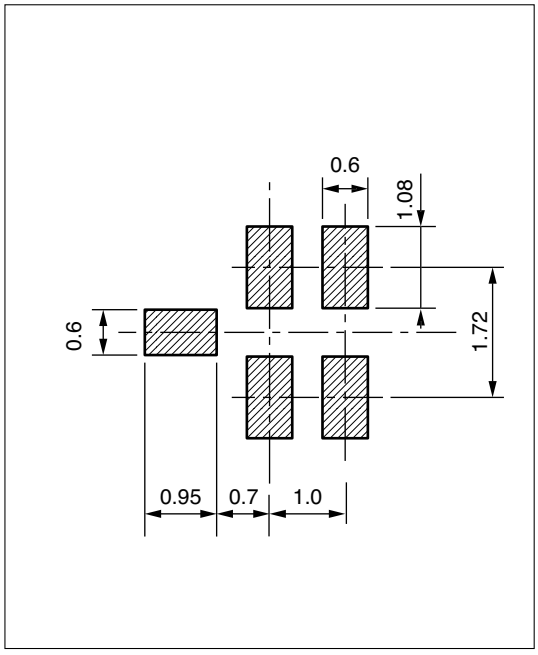
Specifications

Type	TQS-537A-7G
Nominal frequency	1575.42 MHz
Pass band	1574.42 to 1576.42 MHz
Insertion loss	1.8 dB max.
Pass band ripple	0.7 dB max.
Phase imbalance	±20° max.
Amplitude imbalance	±2.0dB max.
Stop band attenuation (Relative to attenuation at fo) DC to 1475 MHz 1475 to 1525 MHz 1625 to 1675 MHz 1675 to 2000 MHz 2000 to 2300 MHz 2300 to 3155 MHz 3155 to 6000 MHz	 30 dB min. 10 dB min. 10 dB min. 30 dB min. 28 dB min. 30 dB min. 20 dB min.
Terminating impedance	Input : Unbalanced 50 Ω Output : Balanced 100 Ω
Operating temperature range	-30 °C to +85 °C

Package Outlines [Dimensions in mm]



Footprint [Dimensions in mm]



(2002. 6.)

RF Filter
for GPS

TQS-537A-7G
1575.42 MHz

Electrical Data