

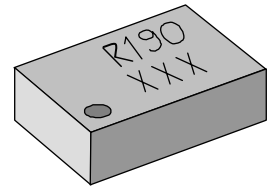


## Datasheet (Version 2.2)

# NWR190 CDMA RX BAW-filter for PCS Band

### Features

- Low-loss and high-selectivity Bulk-Acoustic-Wave Filter
- Passband: PCS CDMA Rx 1930 .. 1990 MHz
- High selectivity and low temperature drift (TCF = -18 ppm/K)
- Leadless Plastic Package for **Surface Mounted Technology (SMT)**
- **Thin Small Leadless Plastic Package**
- Small Package dimensions of 2.0 x 1.6 mm<sup>2</sup>
- Package height 0.6 mm
- “Green” package, suitable for 260°C reflow temperature
- Excellent ESD robustness, pyroelectric charge generation does not occur



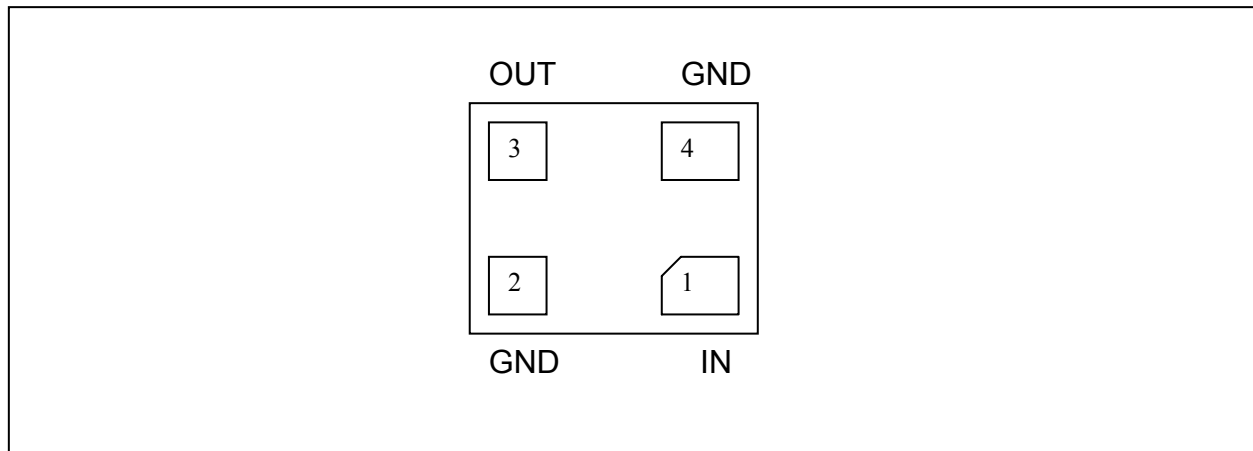
**P-TSLP-4-5**

Type	Marking	Ordering Code	Package
NWR190	R190	available on request	P-TSLP-4-5

### Description:

NWR190 is a full-band Rx Filter for PCS US-CDMA and US W-CDMA handset applications utilizing Bulk-Acoustic-Wave Filter technology from Infineon Technologies. The benefits of NWR190 compared to conventional SAW-filter are reduced insertion loss, very low temperature drift and increased steepness of the filter skirts in lower and upper transition bands. The reduced filter insertion loss allows to reduce the power consumption of the RX LNA. NWR190 is packaged in a low profile plastic package.

**Pin Configuration**  
(bottom view)



**Pin Definitions and Functions**

Pin No.	Symbol	Function
1	IN	unbalanced RX Input
2	GND	Ground
3	OUT	unbalanced Output
4	GND	Ground

Absolute Maximum Ratings		Unit
Operating temperature range	-30 .. +85	°C
Storage temperature range	-65 .. +150	°C
ESD (Machine Model)	100	V
ESD (Human Body Model)	1	kV
Power handling capability (10kh)	20	dBm

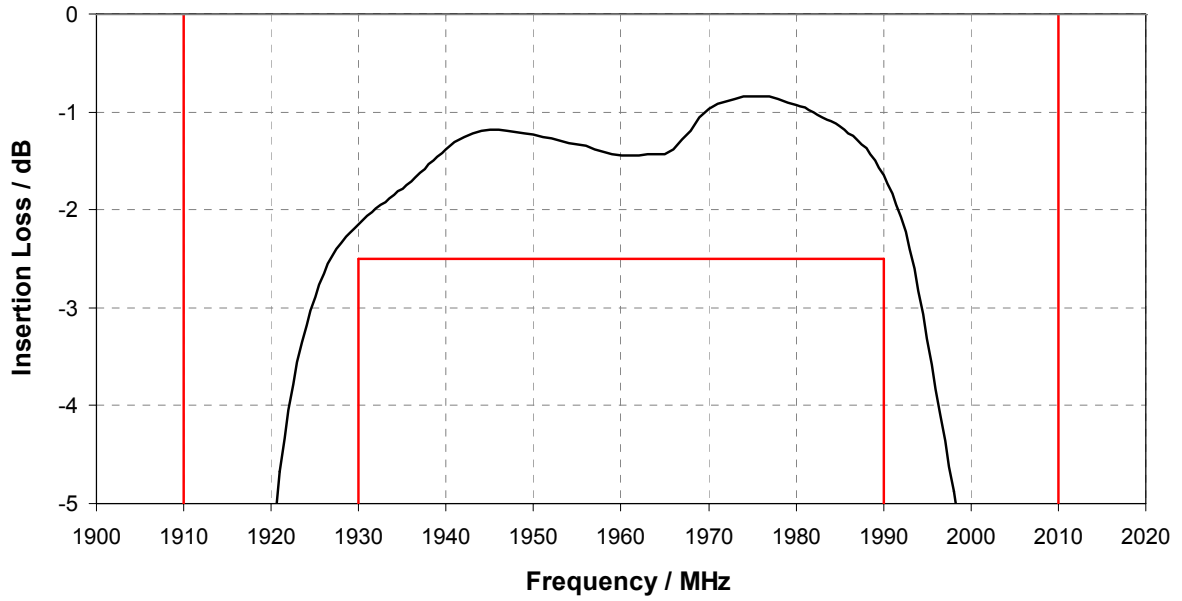
## Electrical specifications

All parameters are valid over full operating temperature range unless otherwise stated. Parameters are tested at room temperature, variations over temperature are considered by temperature margins.

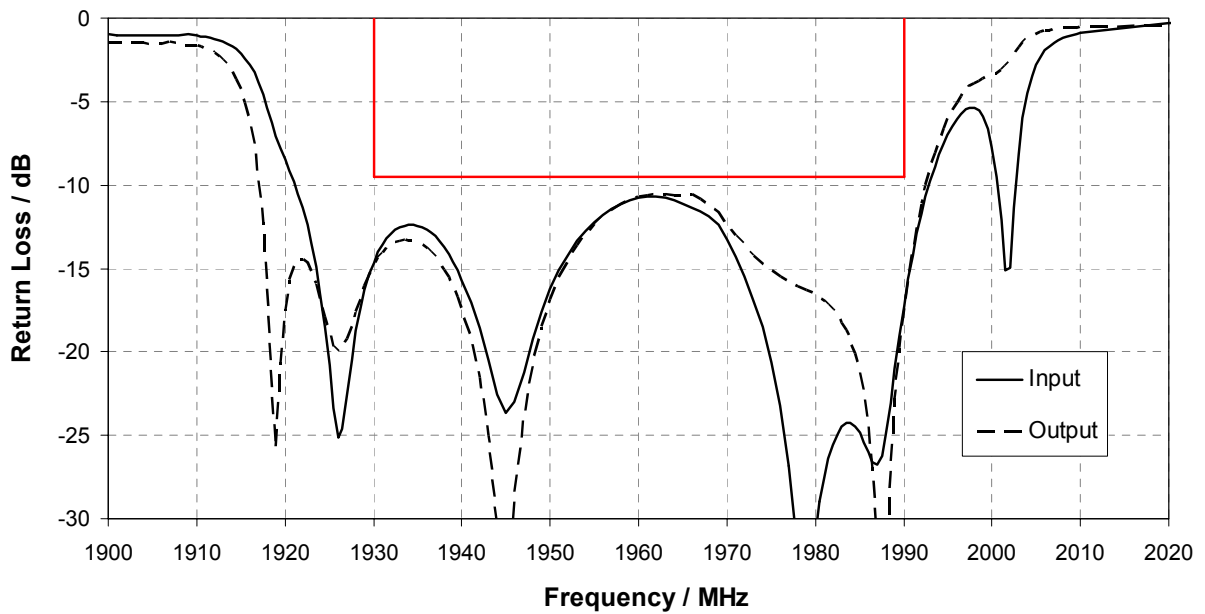
Passband Parameter	Min.	Typ.	Max.	Unit
Frequency	1930.6		1989.4	MHz
Insertion loss (25°C) (-30 ... +85°C) (1935 to 1985 MHz)		2.0 2.5 1.8	3.0	dB
Total ripple over frequency		1.5	2.0	dB
Input impedance		50		Ω unbal.
Output impedance		50		Ω unbal.
Return loss	9.5	11		dB
Input/Output DC bias RF performance must not change			5	V

Stopband Parameter	Min.	Typ.	Max.	Unit
attenuation 0.3 to 1850 MHz	25			dB
attenuation 1850 to 1900 MHz	30	35		dB
attenuation 1900 to 1910 MHz	27	30		dB
attenuation 2010 to 2070 MHz	20	30		dB
attenuation 2070 to 2400 MHz	25			dB
attenuation 2400 to 2500 MHz	30			dB
attenuation 2500 to 4000 MHz	25			dB
attenuation 4000 to 6000 MHz	10			dB

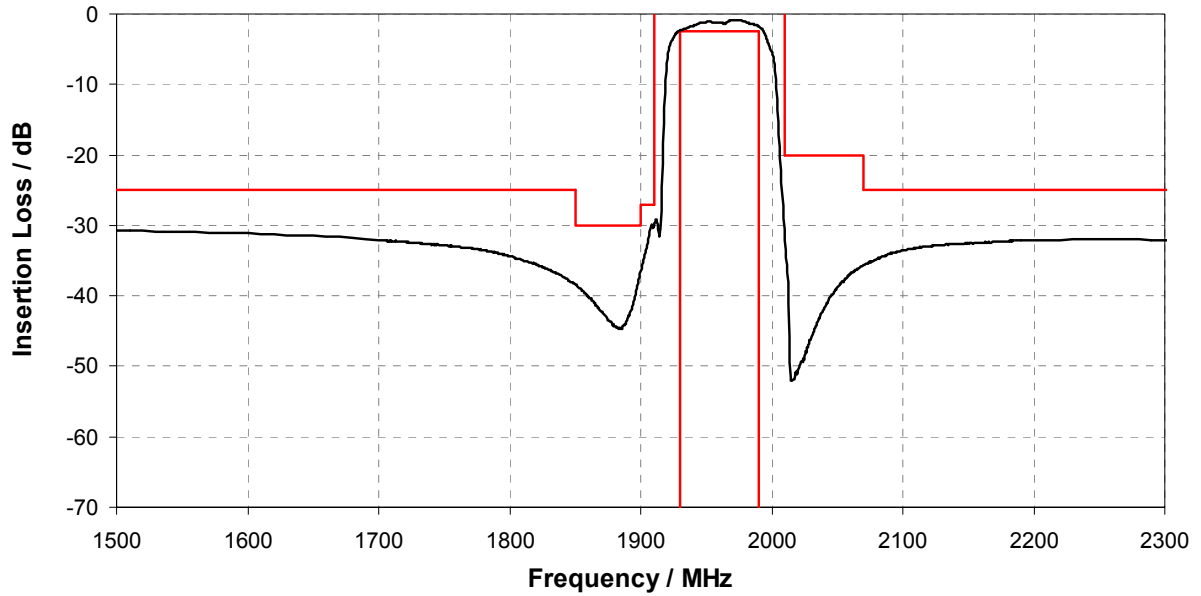
### Insertion Loss (Passband)



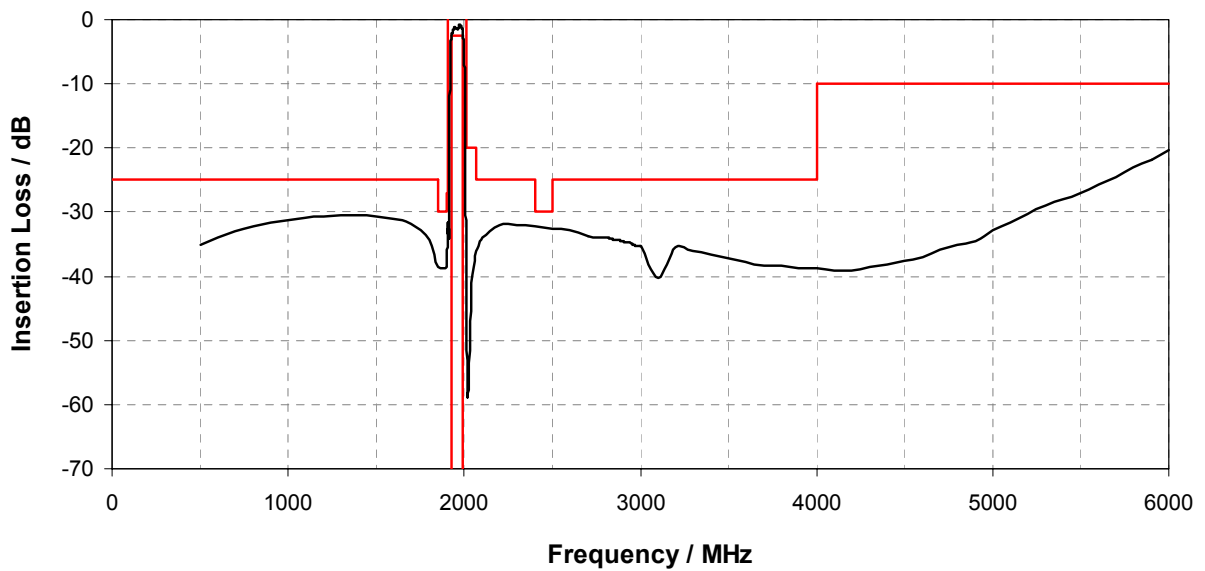
### Return Loss (Passband)



### Insertion Loss (Narrowband)

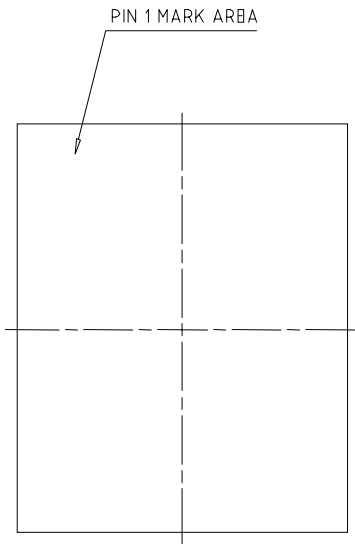


### Insertion Loss (Wideband)

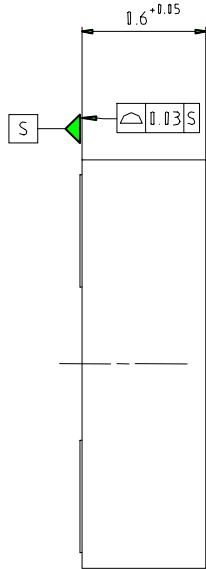


### Package Dimensions

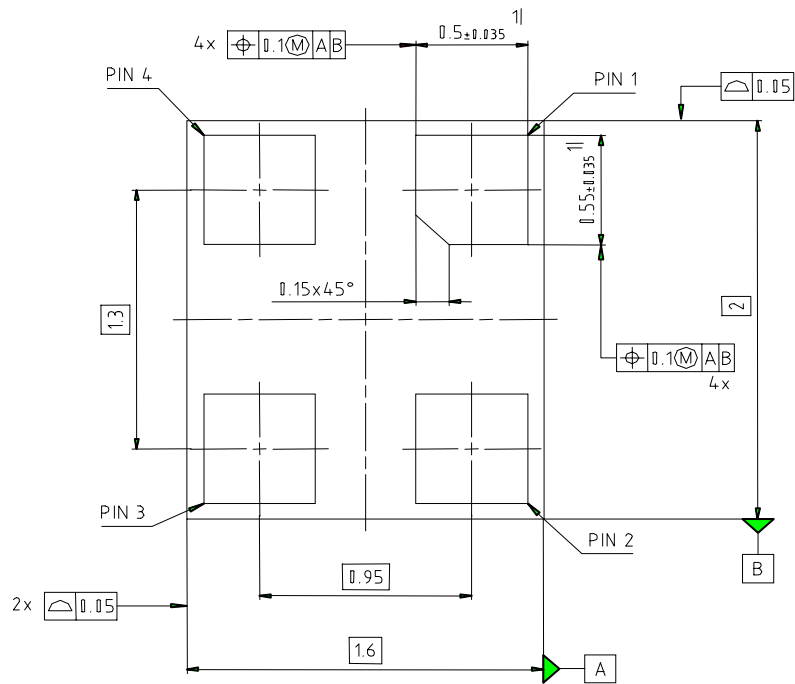
**Top View**



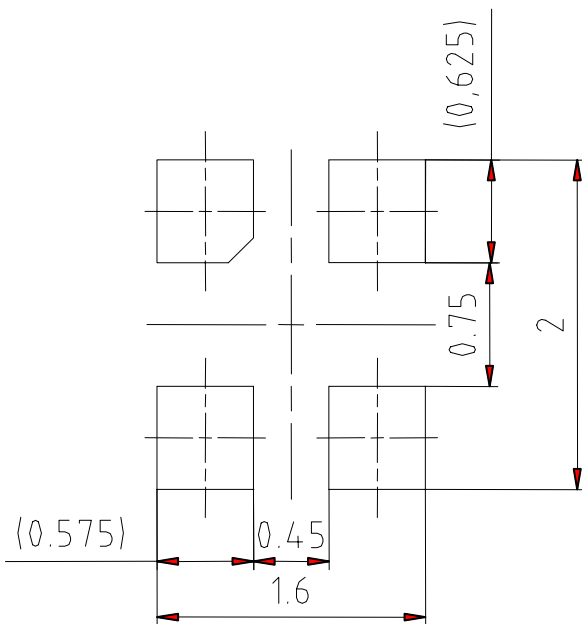
**Side View**



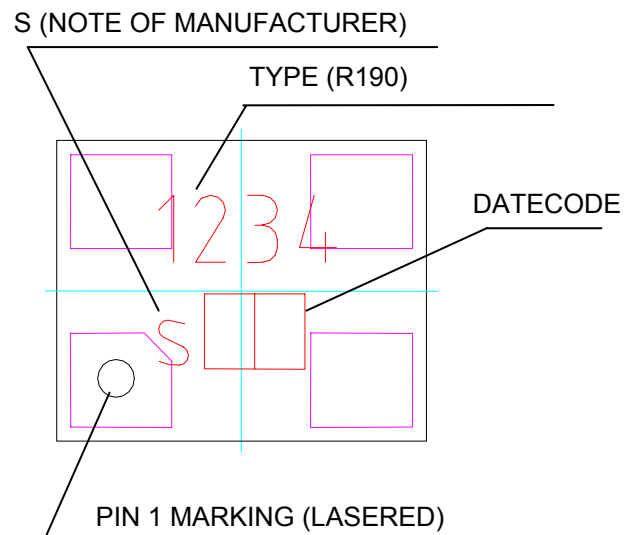
**Bottom View**



### Recommended Landing Pad



### Pin 1 Marking / Labeling



Published by Infineon Technologies AG, Marketing-Kommunikation, Balanstraße 73, D-81541 München.

copyright Infineon Technologies AG 2003. All Rights Reserved.

As far as patents or other rights of third parties are concerned, liability is only assumed for components per se, not for applications, processes and circuits implemented within components or assemblies.

The information describes the type of component and shall not be considered as assured characteristics.

Terms of delivery and rights to change design reserved.

For questions on technology, delivery, and prices please contact the Offices of Semiconductor Group in Germany or the Infineon Technologies Companies and Representatives worldwide (see address list).

Due to technical requirements components may contain dangerous substances. For information on the type in question please contact your nearest Infineon Technologies Office.

Infineon Technologies AG is an approved CECC manufacturer.

---