Model X3C19F1-03S

Prelim

Xinger III

Hybrid Coupler
3 dB, 90°

Description

The X3C19F1-03S is a low profile, high performance 3dB hybrid coupler in a new easy to use, manufacturing friendly surface mount package. It is designed for AMPS, GSM, WCDMA and LTE band applications. The X3C19F1-03S is designed particularly for balanced power and low noise amplifiers, plus signal distribution and other applications where low insertion loss and tight amplitude and phase balance is required. It can be used in high power applications up to 25* watts.

Parts have been subjected to rigorous qualification testing and they are manufactured using materials with coefficients of thermal expansion (CTE) compatible with common substrates such as FR4, G-10, RF-35, RO4003 and polyimide. Produced with 6 of 6 RoHS compliant tin immersion finish.

Features:

- **1700-2300 MHz**
- **AMPS, GSM, WCDMA & LTE**
- **High Power**
- **Very Low Loss**
- **Tight Amplitude Balance**
- **High Isolation**
- **Production Friendly**
- **Tape and Reel**
- **Lead-Free**

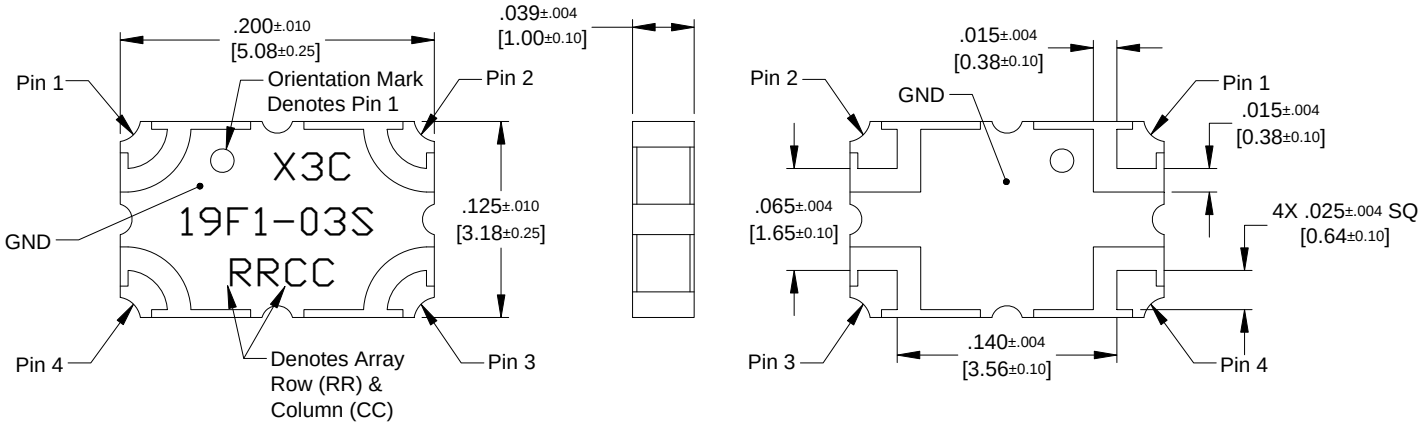
Electrical Specifications **

Frequency	Isolation	Insertion Loss	VSWR	Amplitude Balance
MHz	*dB Min*	*dB Max*	*Max : 1*	*dB Max*
1700-2000	23	0.20	1.15	± 0.3
1805-1880	26	0.15	1.12	± 0.3
1930-1990	26	0.15	1.12	± 0.3
2000-2300	20	0.25	1.22	± 0.4

Phase	Group Delay	Power	ΘJC	Operating Temp.
Degrees	*ns*	*Avg. CW Watts*	*ºC/Watt*	*ºC*
90 ± 4.0	0.14 ± 0.04	25*	TBD	-55 to +105
90 ± 2.0	0.14 ± 0.04	25*	TBD	-55 to +105
90 ± 2.0	0.14 ± 0.04	25*	TBD	-55 to +105
90 ± 4.0	0.14 ± 0.04	25*	TBD	-55 to +105

**Specification based on performance of unit properly installed on Anaren Test Board with small signal applied.
*Specifications subject to change without notice. Refer to parameter definitions for details.

Mechanical Outline



Dimensions are in Inches [Millimeters]
X3C19F1-03S Mechanical Outline

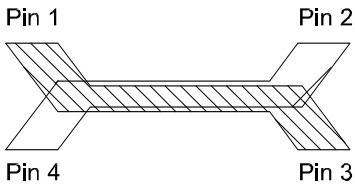
Tolerances are Non-Cumulative

Available on Tape and Reel for Pick and Place Manufacturing.

USA/Canada: (315) 432-8909
Toll Free: (800) 411-6596
Europe: +44 2392-232392

Hybrid Coupler Pin Configuration

The X3C19F1-03S has an orientation marker to denote Pin 1. Once port one has been identified the other ports are known automatically. Please see the chart below for clarification:

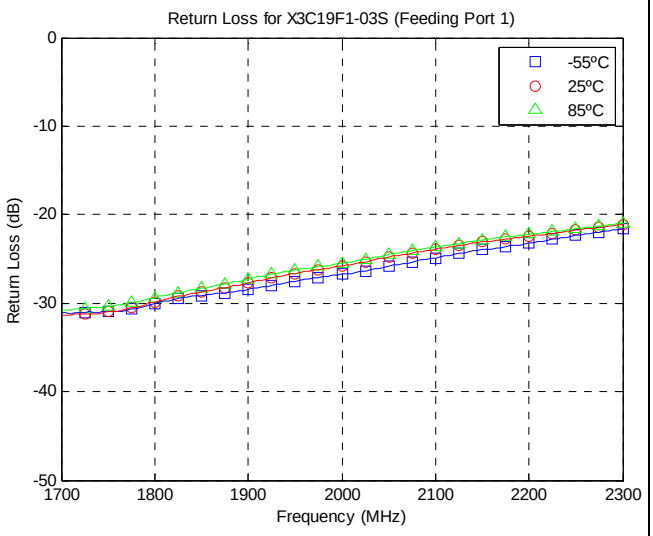


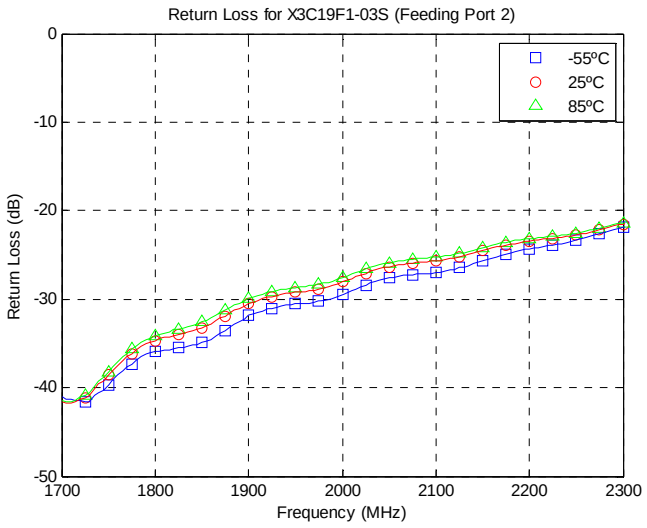
Configuration	Pin 1	Pin 2	Pin 3	Pin 4
Splitter	Input	Isolated	-3dB $\angle\theta - 90$	-3dB $\angle\theta$
Splitter	Isolated	Input	-3dB $\angle\theta$	-3dB $\angle\theta - 90$
Splitter	-3dB $\angle\theta - 90$	-3dB $\angle\theta$	Input	Isolated
Splitter	-3dB $\angle\theta$	-3dB $\angle\theta - 90$	Isolated	Input
***Combiner**	A $\angle\theta - 90$	A $\angle\theta$	Isolated	Output
***Combiner**	A $\angle\theta$	A $\angle\theta - 90$	Output	Isolated
***Combiner**	Isolated	Output	A $\angle\theta - 90$	A $\angle\theta$
***Combiner**	Output	Isolated	A $\angle\theta$	A $\angle\theta - 90$

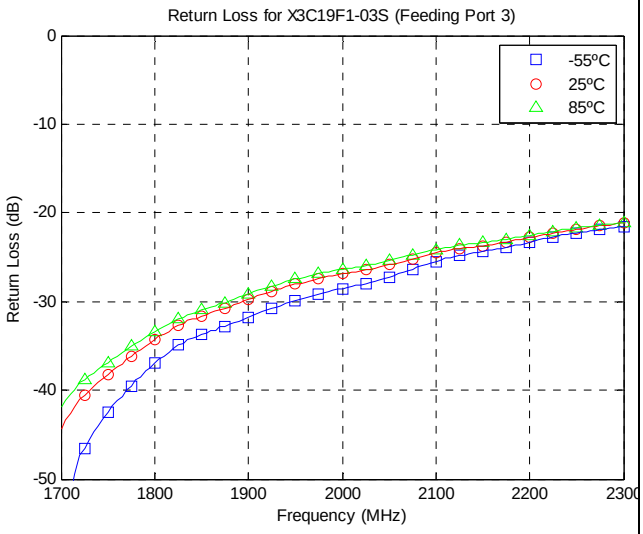
*Notes: “A” is the amplitude of the applied signals. When two quadrature signals with equal amplitudes are applied to the coupler as described in the table, they will combine at the output port. If the amplitudes are not equal, some of the applied energy will be directed to the isolated port.

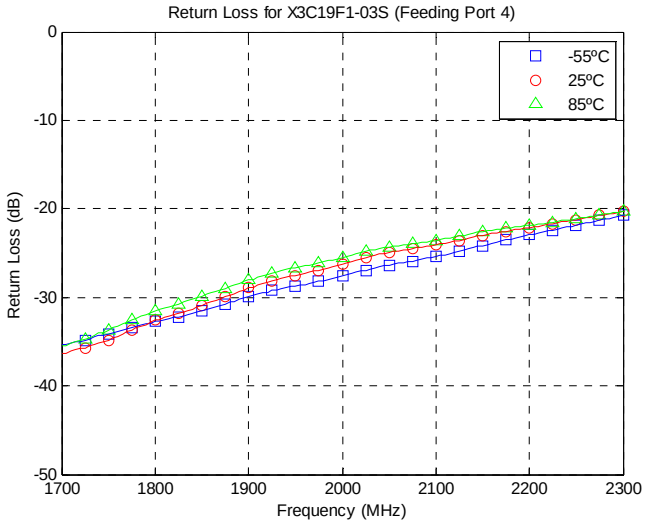
The actual phase, $\angle\theta$, or amplitude at a given frequency for all ports, can be seen in our de-embedded s-parameters, that can be downloaded at www.anaren.com.

Typical Performance (-55°C, 25°C & 85°C): 1700-2300 MHz





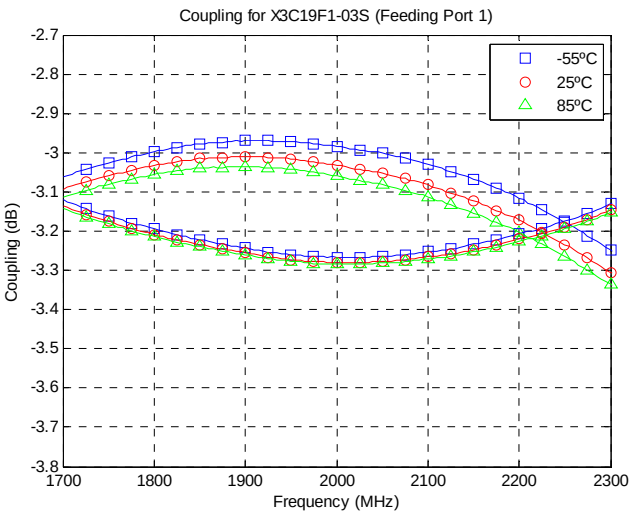


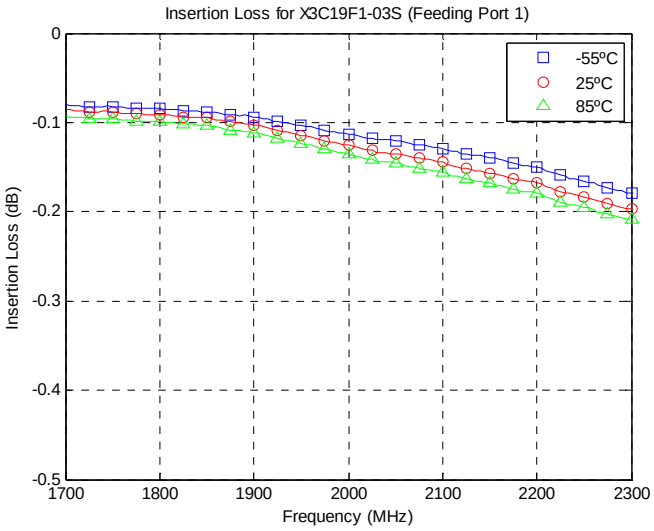


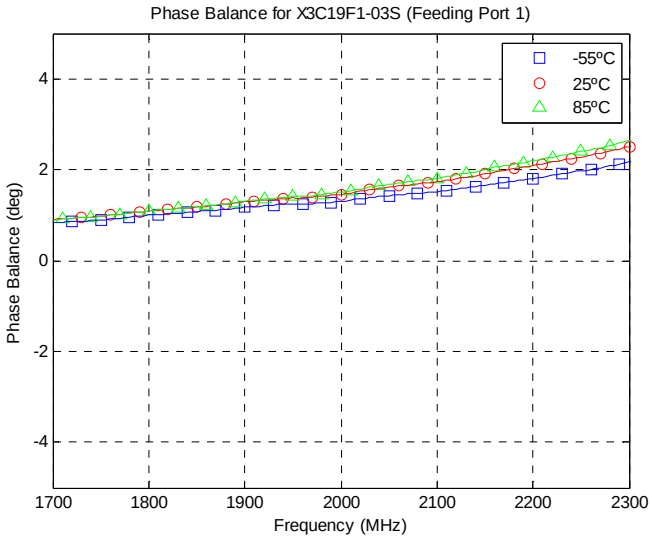
Available on Tape and Reel for Pick and Place Manufacturing.

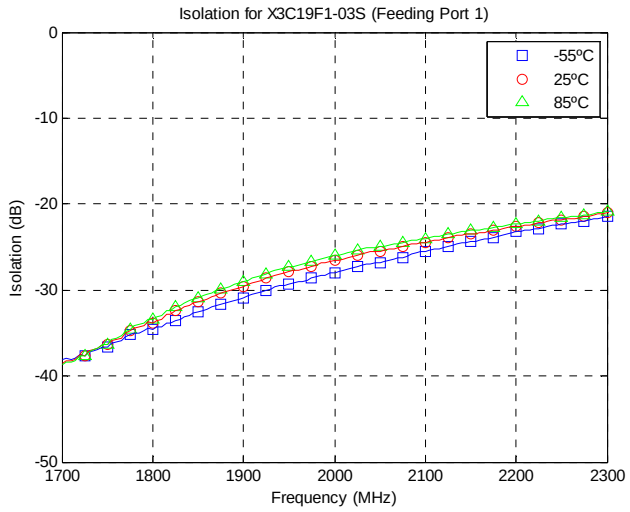
USA/Canada: (315) 432-8909
Toll Free: (800) 411-6596
Europe: +44 2392-232392

Typical Performance (-55°C, 25°C & 85°C): 1700-2300 MHz









USA/Canada: (315) 432-8909
Toll Free: (800) 411-6596
Europe: +44 2392-232392

Available on Tape and Reel for Pick and Place Manufacturing.