



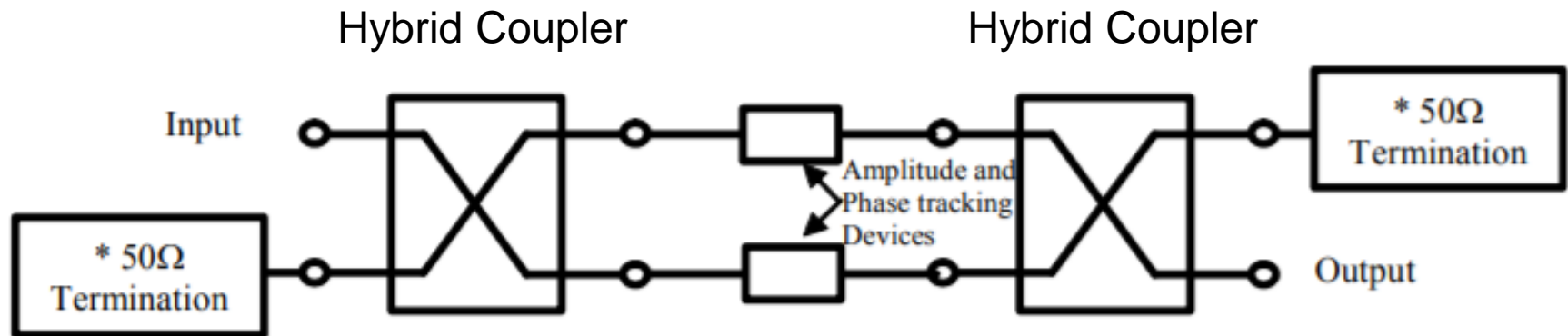
The Power of One



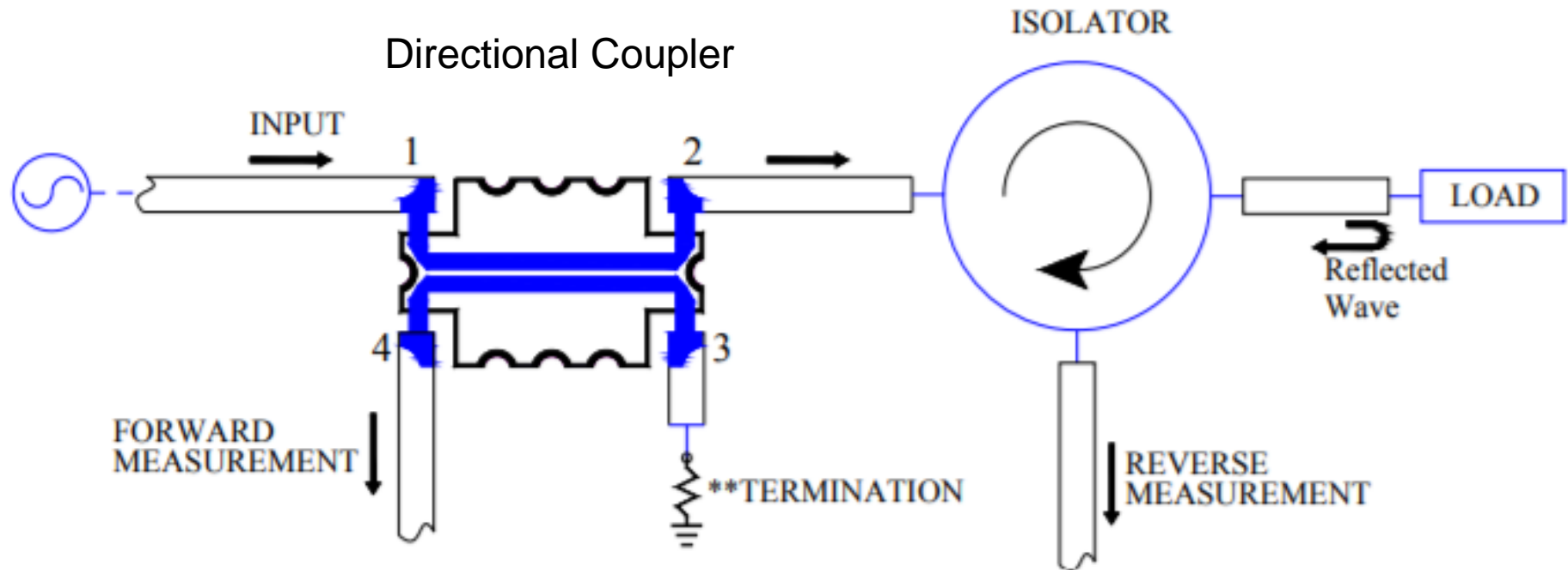
5G Component Portfolio Overview and of Typical Applications

Traditional Balanced Amplifier Configuration

2-Way Splitter/Combiner Network



Example of Sampling Circuitry Schematic



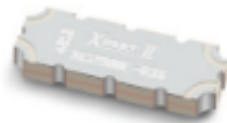
Xinger High Power Packages Styles

- A-Size is Anaren's longest running and most successful package with power handling as high as 600 Watts (with correct mounting and thermal management)
- E-Size parts handle powers to 300 Watts in couplers and 225 Watt in directional couplers with form factors at a staggering 14.22 x 5.08mm
- Pico Size parts are lower cost than E and A size but with smaller powers are well suited to modern distributed style amplifier designs
- Femto size parts are the most recent family members of the Xinger product range and bring the broadest range of frequencies to date.
- Atto size parts are the newest family members. This 3.18 x 2.54mm form factors makes these Atto parts the higher performance per millimeter in the market today



A-Size

14.22 x 8.89mm



E-Size

14.22 x 5.18mm



Pico

6.35x5.18mm



Femto







3.18 x5.08mm



Atto

3.18 x 2.54mm

Xinger Low Power 5G Package Styles

	5W	10W	25W
Hybrids	0805 (2 nd Gen)  2.04 x 1.29mm	Atto  3.18 x 2.54mm	Femto  3.18 x 5.08mm
Directionals	0805 (1 st Gen)  2.04 x 1.29mm	0805 (2 nd Gen)  2.04 x 1.29mm	Atto  3.18 x 2.54mm

- Femto is the package used for all Anaren current generation products
- Next Generation Hybrids & Directionals for 5G applications in Atto Size
- Anaren Atto is half the size of the current Femto package
- 5G focused 0805 couplers and directional with 5 watt power handling .

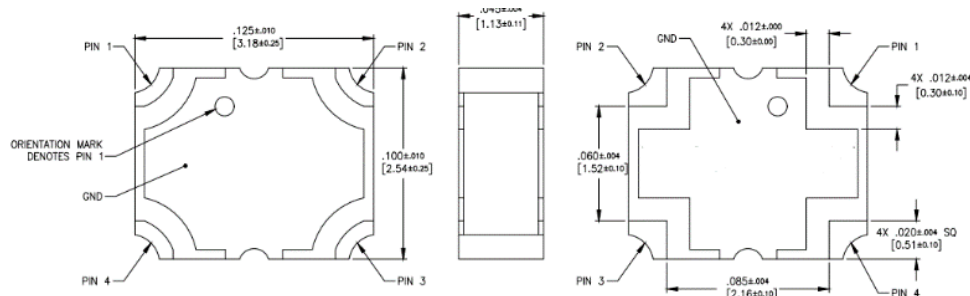
Femto Product Family



Frequency (MHz)	2dB	3dB	4dB	5dB	20dB	30dB	Phase Shifter
450-468						X4C09F1-30S (100W)	
575-655	X3C06F1-02S (10W)						
699-800	X3C07F1-02S (25W)	X3C07F1-03S (25W)		X3C07F1-05S (25W)	X3C09F1-20S (25W)	X4C09F1-30S (100W)	XPS10F190S (20W)
791-960	X3C07F1-02S (25W)	X3C09F1-03S (25W)		X3C07F1-05S (25W)	X3C09F1-20S (25W)	X4C09F1-30S (100W)	XPS10F190S (20W)
1427-1661	X3C14F1-02S (25W)	X3C14F1-03S (25W)			X3C19F1-20S (25W)	X4C20F1-30S (100W)	
1710-2200	X3C20F1-02S (25W)	X3C19F1-03S (25W)	X3C20F1-04S (25W)	X3C20F1-05S (25W)	X3C19F1-20S (25W)	X4C20F1-30S (100W)	XPS20F190S (20W)
2300-2690	X3C25F1-02S (25W)	X3C25F1-03S (25W)	X3C25F1-04S (25W)	X3C25F1-05S (25W)	X3C30F1-20S (25W)	X4C30F1-30S (100W)	XPS30F190S (20W)
3400-3800	X3C35F1-02S (25W)	X3C30F1-03S (25W) X3C35F1-03S (25W)	X3C35F1-04S (25W)	X3C35F1-05S (25W)	X3C30F1-20S (25W)	X4C30F1-30S (100W)	XPS30F190S (20W)
3600-5000	X3C45F1-02 (15W)	X3C45F1-03S (25W)			X3C50F1-20S (25W)		
5100-6300		X3C55F1-03S (25W)			X3C50F1-20S (25W)		
5500-8500		X3C70F1-03S (25W)			X3C70F1-20S (25W)		

5G Atto size Coupler Family

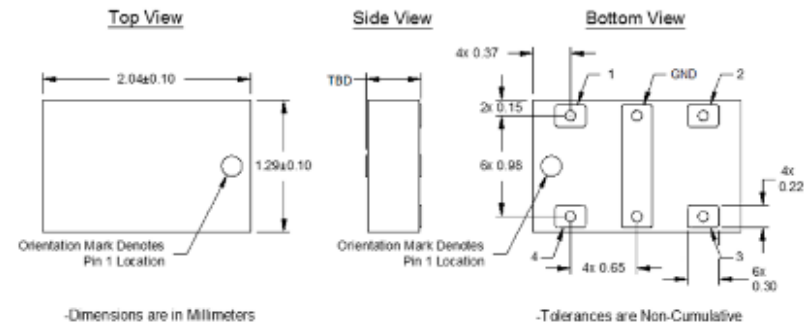
Sample Status*	November/ December 2018				
Frequency (MHz)	2dB	3dB	4dB	5dB	20dB
1700-2300	X4C20K1-02G (10W)	X4C20K1-03G (10W)	X4C20K1-04G (10W)	X4C20K1-05G (10W)	X4C20K1-20S (25W)
2300-2700	X4C25K1-02G (10W)	X4C25K1-03G (10W)	X4C25K1-04G (10W)	X4C25K1-05G (10W)	X4C30K1-20S (25W)
2500-3800	X4C30K1-02G (10W)	X4C30K1-03G (10W)	X4C30K1-04G (10W)	X4C30K1-05G (10W)	
3300-4200	X4C35K1-02G (10W)	X4C35K1-03G (10W)	X4C35K1-04G (10W)	X4C35K1-05G (10W)	X4C40K1-20S (25W)
3600-5000	X4C45K1-02G (10W)	X4C45K1-03G (10W)	X4C45K1-04G (10W)	X4C45K1-05G (10W)	
5100-6300	X4C55K1-02G (10W)	X4C55K1-03G (10W)	X4C55K1-04G (10W)	X4C55K1-05G (10W)	X4C60K1-20S (25W)



5G 0805 Coupler Family

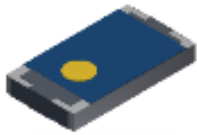
Frequency (MHz)	2dB	3dB	4dB	5dB	20dB
1700-2300	X4C20J1-02G (5W)	X4C20J1-03G (5W)	X4C20J1-04G (5W)	X4C20J1-05G (5W)	X4C20J1-20G (10W)
2300-2700	X4C25J1-02G (5W)	X4C25J1-03G (5W)	X4C25J1-04G (5W)	X4C25J1-05G (5W)	
3300-3800	X4C35J1-02G (5W)	X4C35J1-03G (5W)	X4C35J1-04G (5W)	X4C35J1-05G (5W)	X4C40J1-20G (10W)
3600-5000	X4C45J1-02G (5W)	X4C45J1-03G (5W)	X4C45J1-04G (5W)	X4C45J1-05G (5W)	
5100-6300	X4C55J1-02G (5W)	X4C55J1-03G (5W)	X4C55J1-04G (5W)	X4C55J1-05G (5W)	X4C60J1-20G (10W)

Mechanical Outline



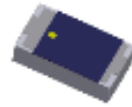
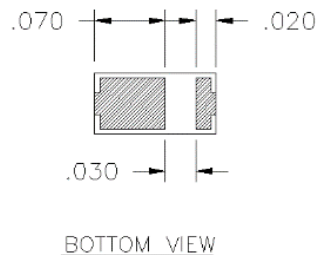
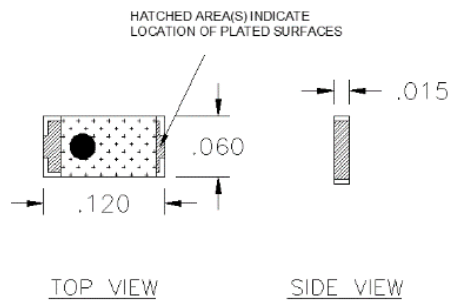
- Higher Power
- Enhanced Performance

Surface Mount Terminations



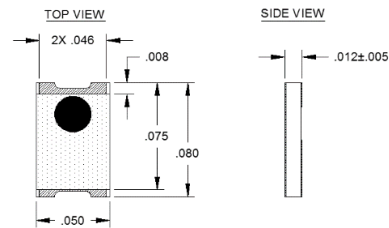
C8A50Z4A

- Surface Mount
- 0.060" x 0.120" (1.52x3.05mm)
- AL2O3 Ceramic
- 8W
- DC to 6.3GHz
- Return Loss: >18dB to 6.3GHz
- Available NOW

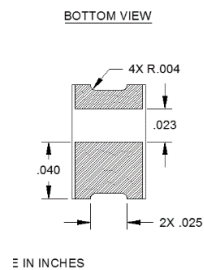


C3A50Z4

- Surface Mount
- 0.080" x 0.050" (2.03x1.27mm)
- AL2O3 Ceramic
- 3W
- DC to 6.3GHz
- Return Loss: >18dB to 6.3GHz
- Available NOW

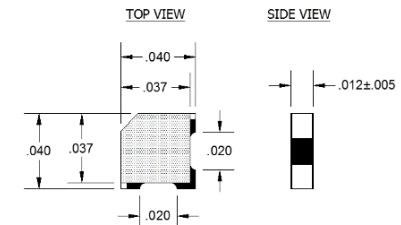


UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE

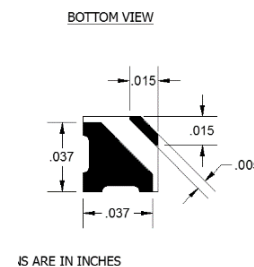


C1A50Z4

- Surface Mount
- 0.040" x 0.040" (1.02x1.02mm)
- AL2O3 Ceramic
- 1W
- DC to 8GHz
- Return Loss: >20dB to 8GHz
- In development



UNLESS OTHERWISE SPECIFIED, DIMENSION

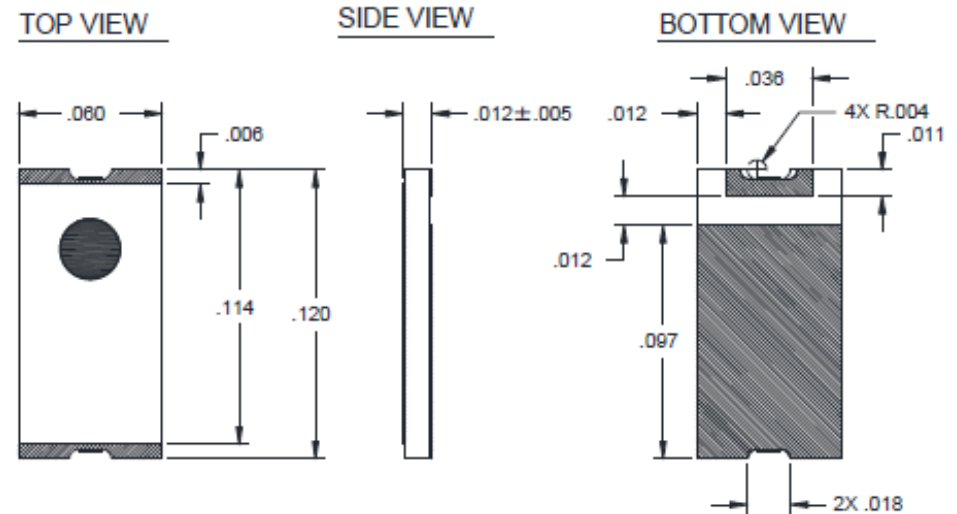


5G Millimeter Wave Terminations

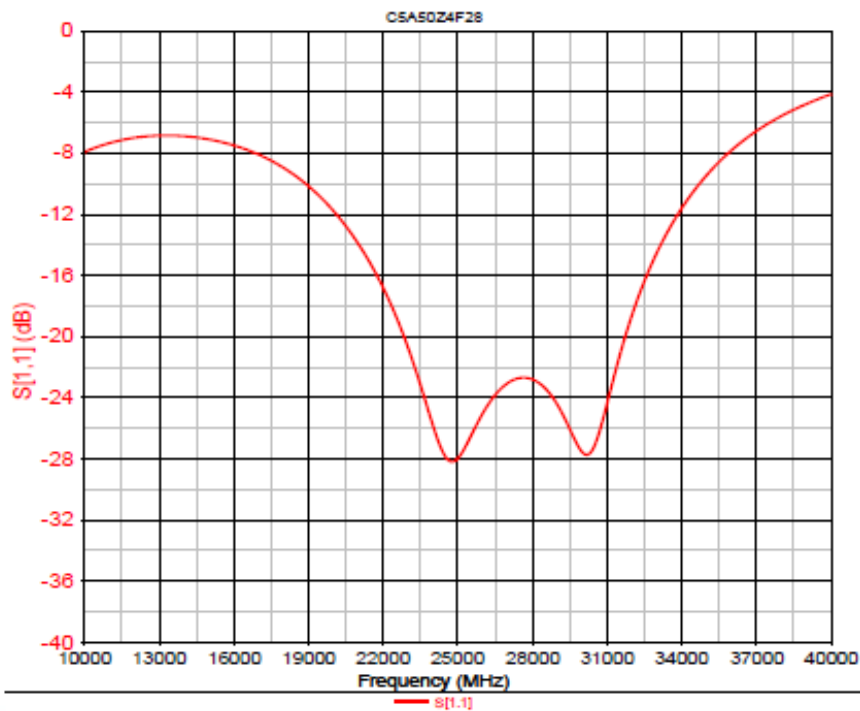
Projected Product Specification

Frequency	RL	Power	Operating Temp.
GHz	dB Max	Avg. CW Watts @85C	°C
26 – 30	20	3	-55 to +100
24 - 30	18		

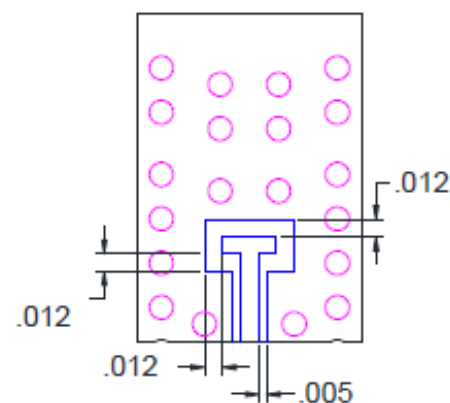
Mechanical Outline



Simulated Performance



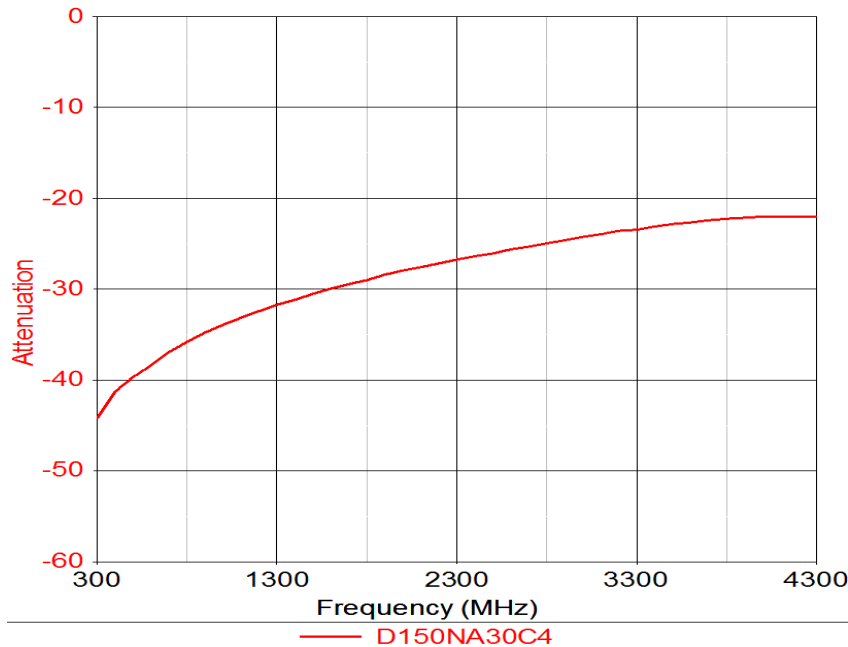
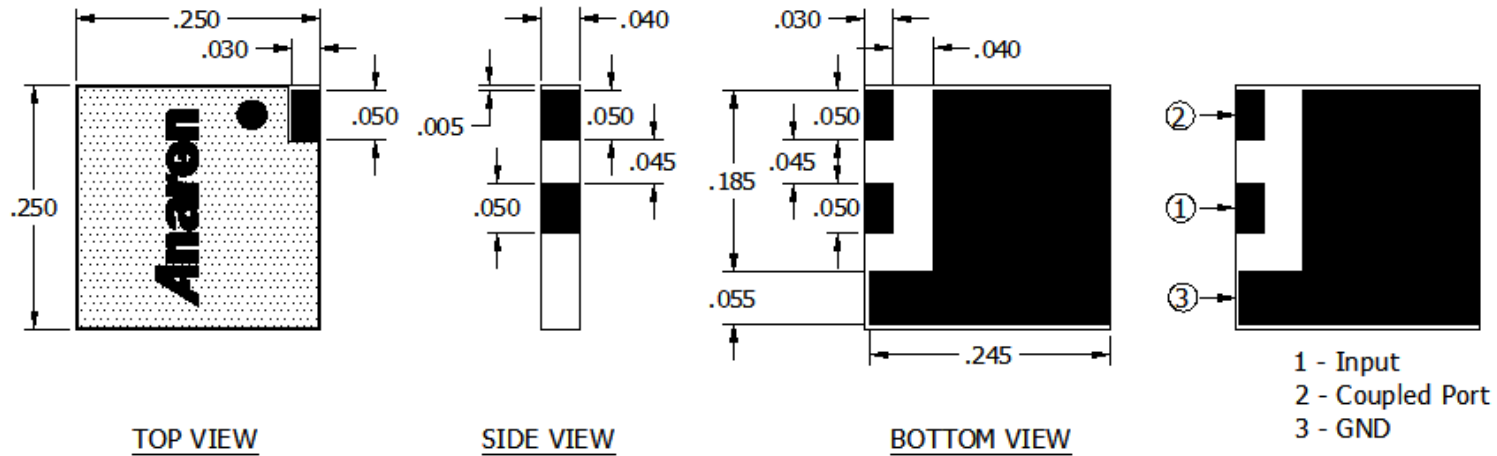
Recommended Footprint



In development



D150NA30C4 - 5G Attenuator



Specifications:
 Power Handling – 150W
 Return Loss >23 dB DC – 2.2GHz
 Return Loss >20 dB DC – 4.0GHz
 Coupling variation 30 +/- 1.5 dB

Availability: Full Production



The Power of One



Thank You

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