

# Q3XA-5000R



## APPLICATIONS

- Signal Splitting/Combining
- Balanced Amplifier Circuit
- I/Q Modulators/Demodulators
- Analog Phase Shifters
- Analog Variable Attenuators
- Microwave Mixers
- Image Reject Mixers
- Integrated Circuits
- And More...

## FEATURES

- Excellent RF performance; low insertion loss, tight coupling, low amplitude balance, close phase tracking
- Compact and low profile
- Industry standard sizes and footprint
- Optimized for thermal and RF performance
- Dimensionally stable materials for best CTE match

## SPECIFICATIONS

TABLE 1: TYPICAL SPECIFICATIONS\*

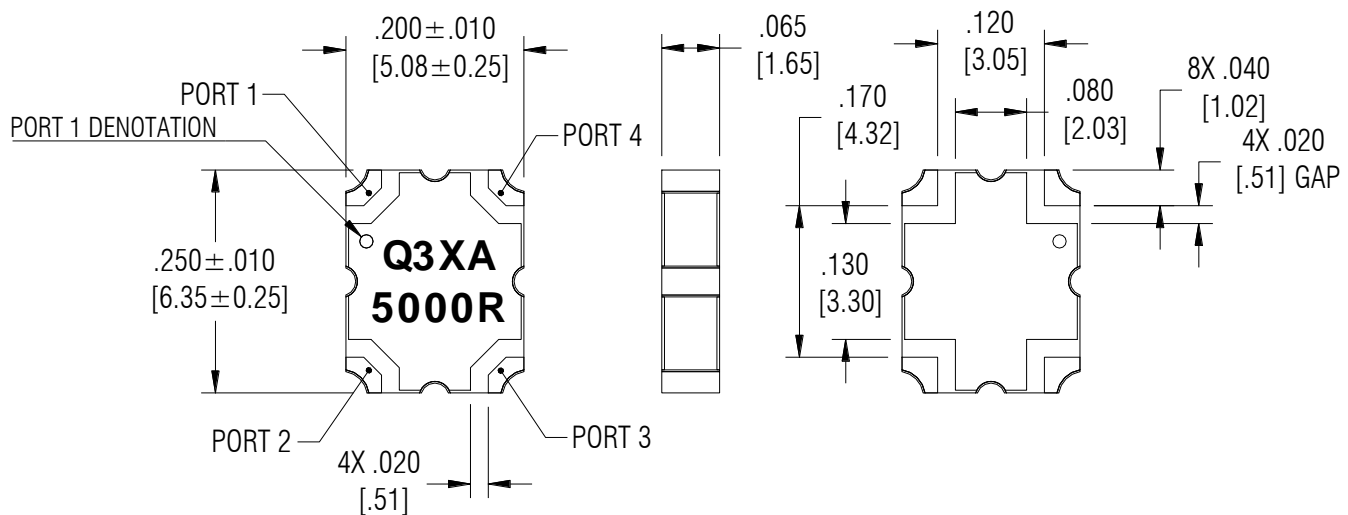
FREQ (MHz)	POWER (W)	PART NUMBER	INSERTION LOSS (dB)	AMPLITUDE BALANCE (dB)	ISOLATION (dB)	VSWR	PHASE BALANCE	OPERATING TEMP (°C)	ΘJC (°C/W)
4000-6000	20	<b>Q3XA-5000R</b>	0.30	± 0.6	22	1.25	± 3°	-55 to +95	66.1

\* Units tested with small signal using Electro-Photonics test board at 25°C. Specifications subject to change without notice.

† Please consult sales ([sales@electro-photonics.com](mailto:sales@electro-photonics.com)) for custom footprints, sizes, and/or specifications.

## MECHANICAL OUTLINE

\* Dimensions are inches [millimeters].

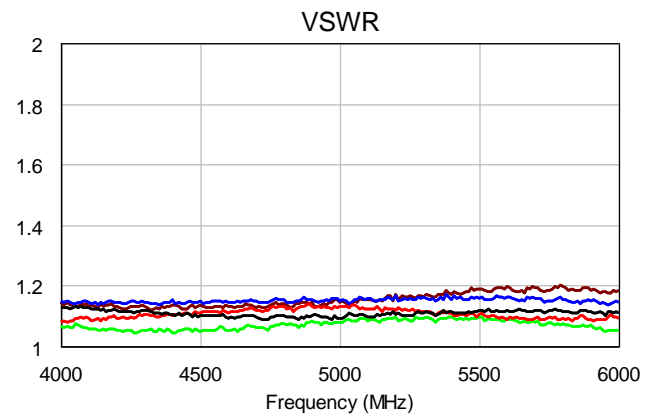
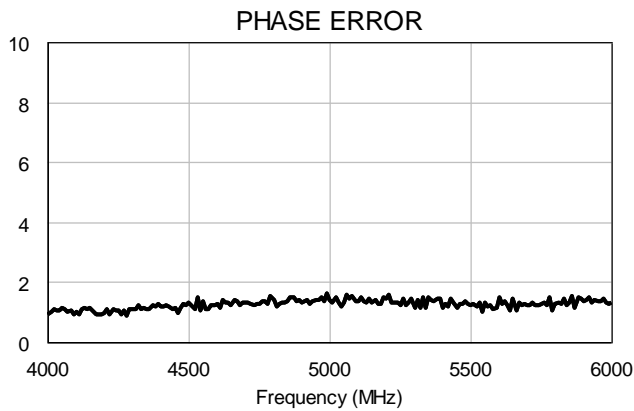
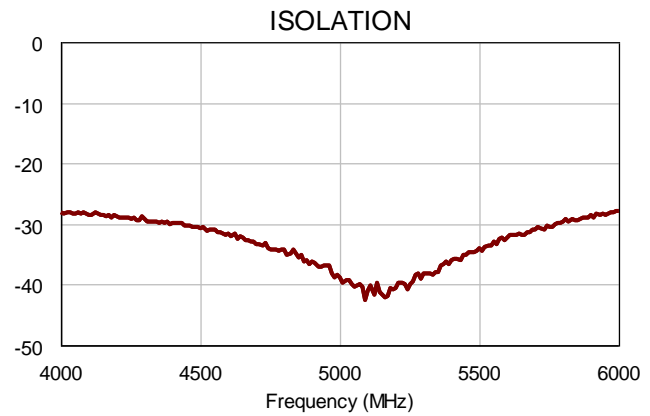
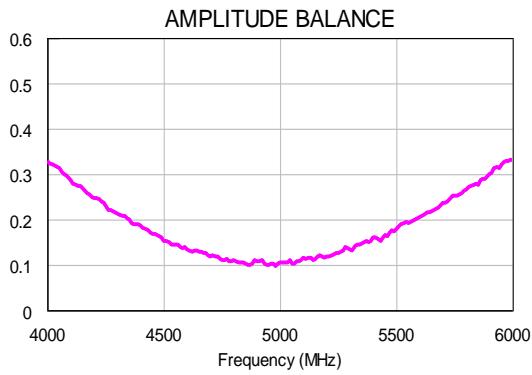
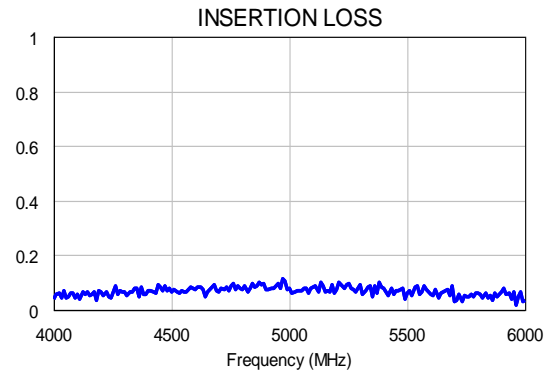
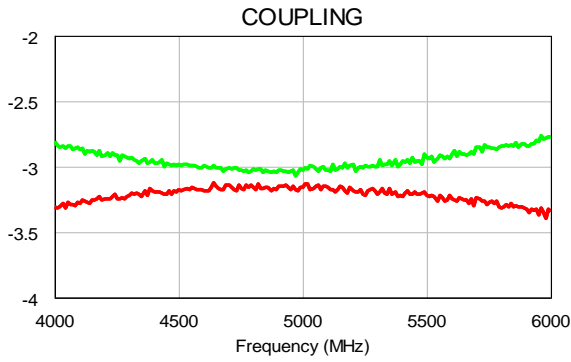


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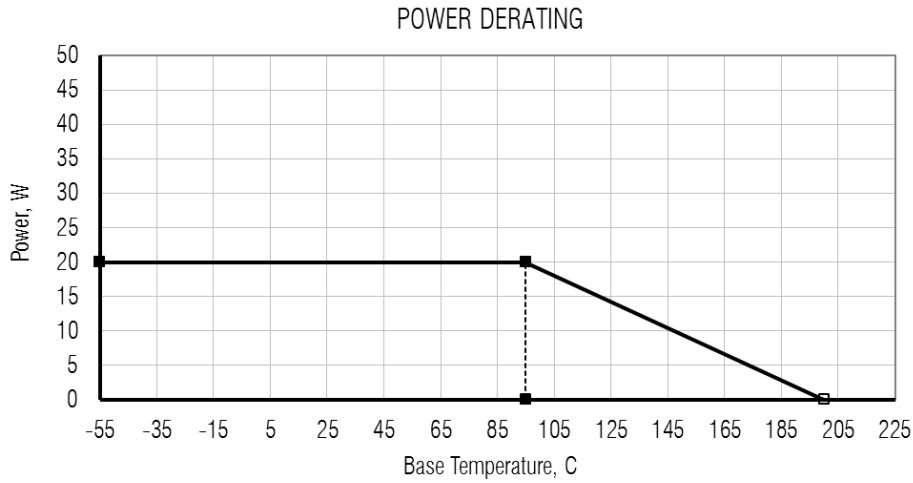
SURFACE MOUNT 3dB 90° HYBRID COUPLERS

REV 1.1.0

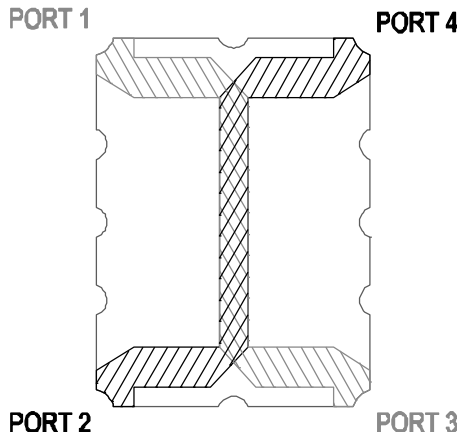
## TYPICAL PERFORMANCE



## POWER DERATING



## PIN CONFIGURATION



**TABLE 2: SPLITTER CONFIGURATION\***

PORT 1	PORT 2	PORT 3	PORT 4
IN	ISO	-90°	0°
ISO	IN	0°	-90°
-90°	0°	IN	ISO
0°	-90°	ISO	IN

\* Signals will split into -3dB amplitude in quadrature. A small fraction of the signal will appear at the isolated port due to non-ideal isolation.

**TABLE 3: COMBINER CONFIGURATION†**

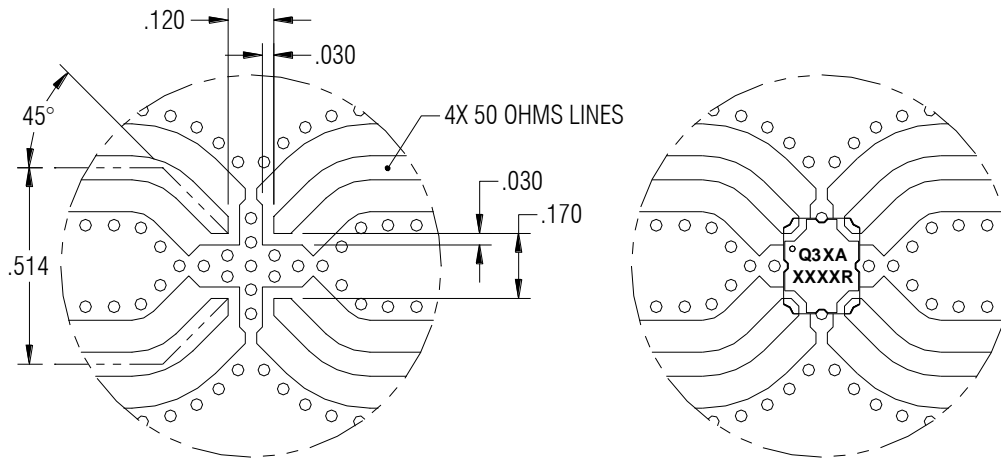
PORT 1	PORT 2	PORT 3	PORT 4
-90°	0°	ISO	OUT
0°	-90°	OUT	ISO
ISO	OUT	-90°	0°
OUT	ISO	0°	-90°

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† Combining signals are applied in quadrature with equal amplitude. Unequal amplitude signals will generate small signal appearing at the isolated port.

## MOUNTING FOOTPRINT

Electro-Photonics test board is designed using 30 mil RO4350B material. Land pattern design must be taken into consideration when using a different thickness and/or dielectric constant in order to achieve optimal performance.



## ORDERING INFO\*

\* Consult sales ([sales@electro-photonics.com](mailto:sales@electro-photonics.com)) for custom configuration, size, footprint, and/or specifications. Tape & Reel available upon request (with minimum order quantities).

**Q 3 X   A   -   5 0 0 0   R**  
①            ②                            ③            ④

① PRODUCT CODE	② SIZE	③ FREQUENCY	④ PLATING
QUADRATURE 3dB CROSSOVER HYBRID	A = .250 X .200 B = .560 X .200 G = .560 X .350 D = .650 X .480	MHz  (SEE TABLE 1)	R = IMMERSION TIN



The Q3XA-5000R is lead free, RoHS compliant product.