

Dual Junction Coaxial Isolator, X-Band, Operating from 9.0GHz to 11.0GHz

Technical Data Sheet

2B8NK-C

FEATURES:

- Dual junction isolator design
- X-band 9.0GHz – 11.0GHz operating range
- Maximum VSWR of 1.35:1
- Isolation of 40dB minimum
- Maximum insertion loss of 0.8dB
- Two SMA female ports, two internal terminations

APPLICATIONS:

- Super-conducting quantum systems

DESCRIPTION:

The **2B8NK-C** is a dual junction coaxial isolator designed for X-band RF systems operating across the 9.0 to 11.0 GHz frequency range, engineered specifically for use in cryogenic environments. By cascading two internally terminated ferrite junctions in a single coaxial package, the isolator delivers strong reverse isolation of ≥ 40 dB while maintaining a low insertion loss of ≤ 0.8 dB across the operating band. This architecture ensures stable, low-reflection performance, with a maximum VSWR of 1.35:1, making it well suited for sensitive, high-integrity signal paths. Rated for operation at cryogenic temperatures, the 2B8NK-C enables reliable performance in low-noise, superconducting, and quantum computing applications, and integrates into RF chains through two SMA female coaxial connectors.

ELECTRICAL CHARACTERISTICS:

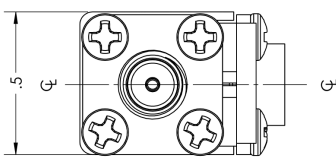
DESCRIPTION	MIN	TYP	MAX	UNITS
Frequency Range	9.0		11.0	GHz
Isolation	40			dB
Insertion Loss			0.8	dB
VSWR			1.35:1	
Impedance		50		Ω
Operating Temperature	Cryogenic			

MECHANICAL SPECIFICATIONS

SIZE

Length	1.05" [26.7 mm]
Width	0.50" [12.7 mm]
Height	0.56" [14.2 mm]
Connectors	SMA Female (2 ports)
Mounting	2× #2-56 UNC-2B
Impedance	50 Ω

REVISIONS			
REV.	ECO	DESCRIPTION	DATE
A	20251127	INITIAL RELEASE	10/16/2025
B	20260040	CHANGED CIRCUIT, FERRITES	4/15/2026



DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED	DRAWN: WAGNER		DATE: 10/16/2025		 RENAISSANCE ELECTRONICS & REC COMMUNICATIONS, LLC 12 LANCASTER COUNTY RD HARVARD, MA 01451 PHONE: (978)772-7774 FAX: (978)772-7775
	CHECKED:	NAME:	DATE:	DATE:	
	ENG APPR:	NAME:	DATE:	DATE:	
	CUSTOMER SPEC:.				
TOLERANCES ON: DECIMALS ANGLES .X ± .02 .XX ± .01 .XXX ± .005 UNLESS OTHERWISE SPECIFIED	MATERIAL:		TITLE:		DUAL JUNCTION ISOLATOR, COAXIAL, X-BAND
	FINISH:				
	PATH: YICAD/DRAFTING		SIZE DWG. NO.		
	USED ON:		B		
NOTE: THIS DWG INCORPORATES THIRD ANGLE PROJECTION 	CAGE IDENT NO:		SCALE: 3:1		2B8NK-C SHEET 1 OF 2
	ORJ02		WEIGHT:		