

Dual Junction Drop-In Isolator Operating from 4GHz to 8GHz

Technical Data Sheet

2E7BA-C

FEATURES:

- Dual junction ferrite design
- Wide 4GHz – 8GHz operating range
- Silver-plated stainless steel housing
- Isolation of 35dB minimum
- Maximum insertion loss of 1.0dB

APPLICATIONS:

- Super-conducting quantum systems

DESCRIPTION:

This dual junction drop-in isolator is designed for RF systems operating in the 4–8 GHz frequency range, engineered specifically for use in cryogenic environments. Utilizing a dual junction ferrite-based design, the isolator delivers strong reverse isolation of up to 35 dB while maintaining a low insertion loss of ≤ 1.0 dB across the operating band. This architecture ensures stable, low-reflection performance, with a maximum VSWR of 1.25:1, making it well suited for sensitive, high-integrity signal paths. The isolator supports up to 1 W of input power and is rated for operation at cryogenic temperatures, enabling reliable performance in low-noise, superconducting, and quantum computing applications where components must function reliably at extremely low temperatures. Designed for straightforward integration into cryogenic RF chains, the drop-in isolator offers a compact, connectorless footprint suited for easy incorporation.

ELECTRICAL CHARACTERISTICS:

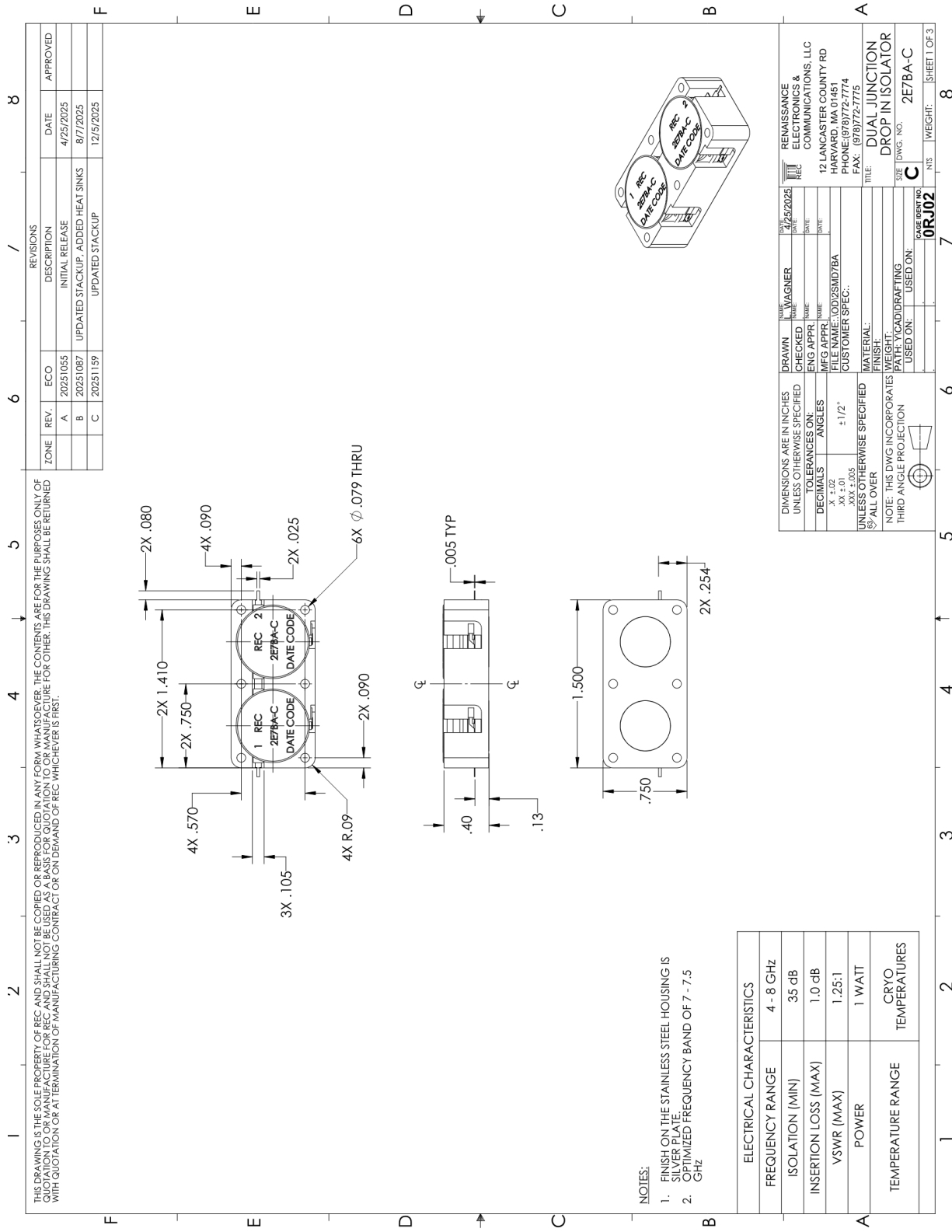
DESCRIPTION	MIN	TYP	MAX	UNITS
Frequency Range	4		8	GHz
Isolation	35			dB
Insertion Loss			1.0	dB
VSWR			1.25:1	
Impedance		50		Ω
Power Rating (CW)			1.0	W
Operating Temperature	Cryogenic			

MECHANICAL SPECIFICATIONS

SIZE

Length	1.50" [38.1 mm]
Width	0.75" [19.05 mm]
Height	0.40" [10.16 mm]
Connectors	Drop-In / Solder Tab
Finish	Silver Plate over Stainless Steel
Mounting	6× Ø0.079" THRU

R0 (March 5th 2026)



REVISIONS							
ZONE	REV.	ECO	DESCRIPTION	DATE			
	A	20251055	INITIAL RELEASE	4/25/2025			
	B	20251087	UPDATED STACKUP - ADDED HEAT SINKS	8/7/2025			
	C	20251159	UPDATED STACKUP	12/5/2025			

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED				DRAWN	CHECKED	DATE	DATE
TOLERANCES ON:				NAME	NAME	DATE	DATE
DECIMALS	ANGLES			ENG APPR	NAME		
XX ± .01	± 1/2°			FILE NAME	100125MD7BA		
XXX ± .005				CUSTOMER SPEC.			
ALL OVER				MATERIAL			
UNLESS OTHERWISE SPECIFIED				FINISH			
NOTE: THIS DWG INCORPORATES				WEIGHT			
THIRD ANGLE PROJECTION				PATH: YCADIADRAFTING			
				USED ON:			
				DATE DWT NO			
				ORJ02			
				SIZE	DWG. NO.	NTS	WEIGHT
				C	2E7BA-C		

ELECTRICAL CHARACTERISTICS		
FREQUENCY RANGE	4 - 8 GHz	
ISOLATION (MIN)	35 dB	
INSERTION LOSS (MAX)	1.0 dB	
VSWR (MAX)	1.25:1	
POWER	1 WATT	
TEMPERATURE RANGE	CRYO TEMPERATURES	