MMIC SURFACE MOUNT

Directional Coupler

EDC10-273+

50Ω 10 dB 6 to 26.5 GHz

THE BIG DEAL

- Wideband, 6-26.5 GHz
- Excellent Coupling Flatness 10 ± 1.5 dB Typ.
- Highly Repeatable Performance (GaAs Based Design)
- Small Size, 4x4 mm
- No External Termination Required



Generic photo used for illustration purposes only

CASE STYLE: DG1847

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our website for RoHS Compliance methodologies and qualifications

APPLICATIONS

- Satellite Communications
- Wireless Infrastructure
- Test and Measurements

PRODUCT OVERVIEW

Mini-Circuits' EDC10-273+ is a 10 dB directional coupler that operates from 6 to 26.5 GHz and is packaged in an MCLP 4x4 mm, 24-lead package. It provides excellent coupling flatness over a broad bandwidth and good return loss. This coupler also provides a quadrature phase shift between the signal at the through port and coupler port. Manufactured using GaAs Technology, this model is highly repeatable in volume manufacturing.

KEY FEATURES

Feature	Advantages
Wideband, 6-26.5 GHz	EDC10-273+ can be used in many applications, saving component count. Also ideal for wideband applications such as military and instrumentation.
Excellent Coupling Flatness	Excellent coupling flatness yields higher accuracy.
Small Size, 4x4 mm MCLP Package	Tiny footprint saves space in dense layouts while providing low inductance, repeatable transitions, and excellent thermal contact to the PCB.

REV. A
ECO-012570
EDC10-273+
MCL NY
250904

Directional Coupler

EDC10-273+

ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		6000		26500	MHz
Mainline Loss	6000 - 10000		1.0	2.2	dB
	10000 - 18000		1.4	2.3	
	18000 - 23000		1.5	3.2	
	23000 - 26500		1.8		
Nominal Coupling	6000 - 10000	9.2	10.3	12.5	dB
	10000 - 18000	9.5	10.4	11.9	
	18000 - 23000	9.8	11.4	13.3	
	23000 - 26500	8.6	10.1	13.0	
Coupling Flatness (±)	6000 - 26500		1.5		dB
Directivity	6000 - 10000	10	16		dB
	10000 - 18000	8.9	15		
	18000 - 23000	8.5	14		
	23000 - 26500		11		
Return Loss (Input)	6000 - 10000		24		dB
	10000 - 18000		17		
	18000 - 23000		15		
	23000 - 26500		15		
Return Loss (Output)	6000 - 10000		22		dB
	10000 - 18000		16		
	18000 - 23000		16		
	23000 - 26500		19		
Return Loss (Coupled)	6000 - 10000		24		dB
	10000 - 18000		16		
	18000 - 23000		14		
	23000 - 26500		14		

1. Measured on Mini-Circuits Characterization test board TB-EDC10-273+ with testboard loss deducted.

Directional Coupler

EDC10-273+

ABSOLUTE MAXIMUM RATINGS

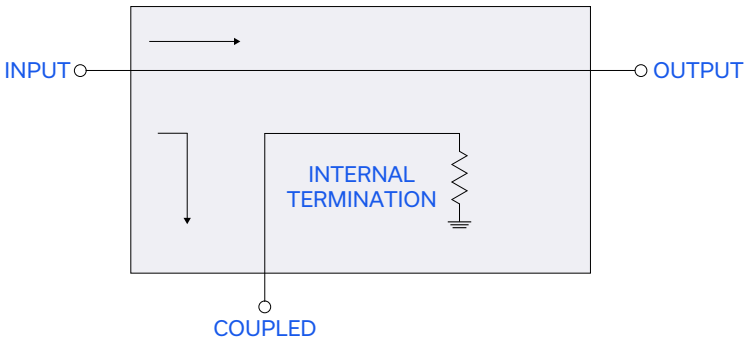
Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Input Power	+28 dBm (5 minutes max.) +25 dBm (continuous)
Power at Internal Termination	+19 dBm (5 minutes max.) +16 dBm (continuous)

Permanent damage may occur if any of these limits are exceeded.

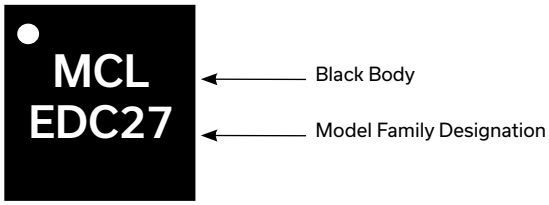
PAD CONNECTIONS

Function	Pad Number
INPUT	5
COUPLED	2
OUTPUT	14
GROUND	Paddle
NC (GROUND EXTERNALLY)	1,3,4,6-13,15-24

ELECTRICAL SCHEMATIC



PRODUCT MARKING



Marking may contain other features or characters for internal lot control.

ADDITIONAL DETAILED TECHNICAL INFORMATION IS AVAILABLE ON OUR DASHBOARD. TO ACCESS CLICK HERE

Performance Data	Data Table Swept Graphs S-Parameter (S3P Files) Data Set (.zip file)
Case Style	DG1847 Plastic package, exposed paddle Lead Finish: Matte-Tin
Tape & Reel **Standard Quantities Available on Reel**	F68 7" Reels with 20, 50, 100, 200, 500 or 1000 devices
Suggested Layout for PCB Design	PL-614
Evaluation Board	TB-EDC10-273+
Environmental Ratings	ENV08T2

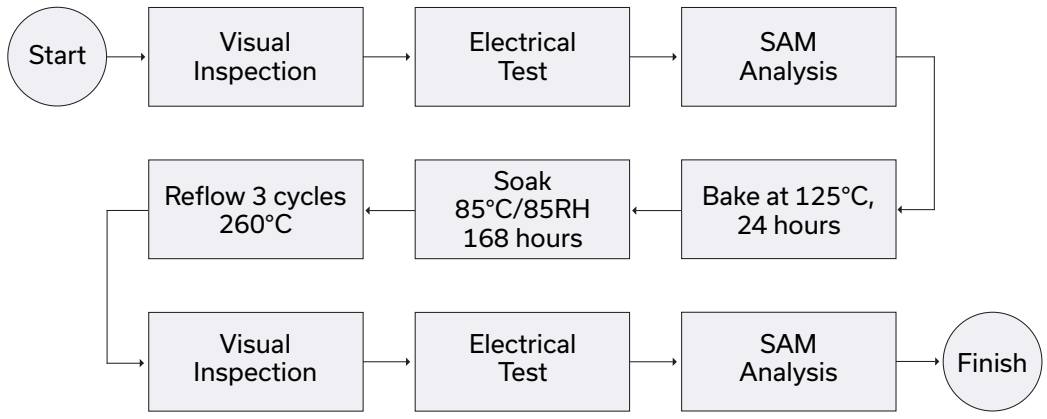
ESD RATING

Human Body Model (HBM): Class 1B (Pass 500 V) in accordance with ANSI/ESD STM 5.1 - 2001

MSL RATING

Moisture Sensitivity: MSL1 in accordance with IPC/JEDEC J-STD-020E /JEDEC J-STD-033C

MSL TEST FLOW CHART



NOTES

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html