

FEATURES

- Single Schottky Diode Quad
- 5.5 dB Conversion Loss
- 35 dB Isolation
- Low VSWR

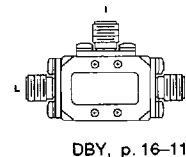
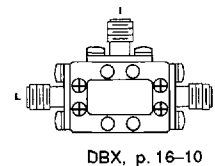
APPLICATIONS

- Ideal for 2 to 6 GHz and 3.7 to 4.2 GHz Downconversion
- Threat Warning Systems
- Self Protection Jammers
- Wideband Heterodyned Receivers

DESCRIPTION

The DBX/DBY Series uses precisely matched Schottky-barrier diodes and a "quasi-planar" physical construction for excellent overall symmetry. Construction

techniques result in high LO to RF isolation, extremely low single tone intermodulation distortion and very good amplitude and phase match characteristics.



ELECTRICAL SPECIFICATIONS (Measured in a 50-ohm system)

Symbol	Characteristic	Operating Frequencies GHz			Power Level			Specifications		Unit	
		f _{LO}	f _{RF}	f _{IF}	LO Port dBm (typ)	Model Suffix	RF Port dBm	Typical T _c = 25°C	Guaranteed T _c = -55° to +100°C		
BW	Operating Frequency Range	2.0-7.0	2.0-7.0	DC-1.5						GHz	
CL	SSB Conversion Loss	2.0-7.0	2.0-7.0	DC-0.5				5.5	7.5	dB max	
		2.0-7.0	2.0-7.0	DC-1.2				6.5	8.6		
		2.0-7.0	2.0-7.0	DC-1.5				7.5	9.5		
NF	SSB Noise Figure	2.0-7.0	2.0-7.0	0.03-0.5				5.5	7.5	dB max	
		2.0-7.0	2.0-7.0	0.03-1.2				6.5	8.5		
		2.0-7.0	2.0-7.0	0.03-1.5				7.5	9.5		
		2.0-7.0	2.0-7.0	—				—	—		
ISOL	Isolation Port-to-Port	L-R	—	—				25	20	dB min	
		L-R	3.0-7.0	—				35	25		
		R-L	—	2.0-7.0	—				35		—
		R-I	—	2.0-7.0	—				20		—
		L-I	2.0-7.0	—	—				25		20
—	VSWR (50 ohm)	L	2.0-7.0	—				1.7:1		max	
		R	4.0-7.0	—				1.5:1			
		R	2.0-3.0	—				3.0:1			
		R	3.0-4.0	—				2.0:1			
		I	—	—	≤1.5				1.5:1		
CC	Conversion Compression Point (1 dB)	2.0-7.0	2.0-7.0	≤1.5	≥+7	L		+2		dBm typ	
		2.0-7.0	2.0-7.0	≤1.5	≥+10	M		+6			
		2.0-7.0	2.0-7.0	≤1.5	≥+17	H		+12			
IP ₃	Third-Order Two-Tone Intercept Point	2.0-7.0	2.0-7.0	≤1.5	≥+7	L	—	+9	—	dBm typ	
		2.0-7.0	2.0-7.0	≤1.5	≥+10	L	—	+10	—		
		2.0-7.0	2.0-7.0	≤1.5	≥+17	M	—	+12	—		
		2.0-7.0	2.0-7.0	≤1.5	≥+20	H	—	+22	—		
—	LO Port Drive Level (typical)	2.0-7.0	2.0-7.0	DC-1.5	+7-+13	L				dBm	
		2.0-7.0	2.0-7.0	DC-1.5	+10-+17	M					
		2.0-7.0	2.0-7.0	DC-1.5	+17-+24	H					

NOTE: Specifications guaranteed at LO Power of +7 dBm for "L" model, +10 dBm for "M" model, and +17 dBm for "H" model.

MAXIMUM RATINGS

Peak Input Current @ 25°C	100 mA DC
Pin Temperature	260°C for 10 seconds
Operating Case Temperature	-55°C to +100°C
Storage Temperature	-65°C to +100°C
Continuous RF Input Power	200 mW @ +25°C 100 mW @ +100°C

WEIGHT: (typical) DBX — 22 grams; DBY — 16 grams (with connectors)

TYPICAL PERFORMANCE AT 25° C

Typical Single Tone Intermodulation Harmonic Suppression at 25°C (dB below desired output)

Harmonics of f_{RF}	4	>70	>70	>70	>70
	3	65	>70	55	>70
	2	50	55	50	58
	1	0	25	18	40
		1	2	3	4
		Harmonics of f_{LO}			

Typical Harmonic Intermodulation Suppression for mixer generated harmonics of the input signals. Suppression numbers are for a f_{RF} signal level at -10 dBm and f_{LO} signal level of:

- L Suffix +7 dBm
- M Suffix +10 dBm
- H Suffix +17 dBm

