

Schottky Diodes: MMD 00 Series

Phase Detectors

Description

The **MicroMetrics** MMD series Phase Detector is a hybrid circuit design. It contains a fast step recovery diode, two coupling capacitors and a matched Schottky diode pair. The detectors are available from 2-24 GHz and can be customized.

Applications

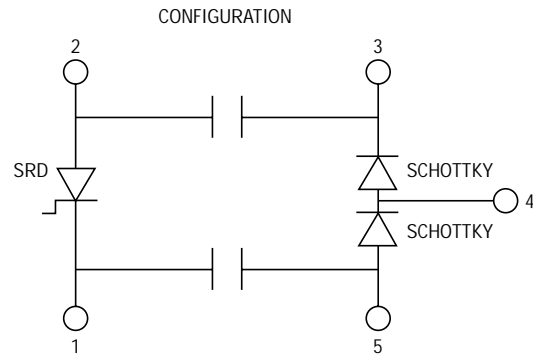
The **MicroMetrics** Phase Detectors are used in VCO and DRO's in the 500MHz reference frequencies.

Features

- Low Cost Design for Phase Lock
- Wide Frequency Range
- Rugged, Modular, Hybrid Construction

Packaging

- CS 99



Electrical Characteristics Sampling Phase Detectors

	Lifetime TI	Transition T _t	Capacitance C _j	Breakdown V _b	Resistance R _s	Part Number
2-6 GHz						MMD-001-99
Step Recovery Diode	17 nS	100 pS	.60 pf ¹	35 Vdc	8.0 Ohms	
Chip Capacitors			.50 ²	100 Vdc		
Schottky Pair			.20 ²	3 Vdc		
8-12 GHz						MMD-002-99
Step Recovery Diode	12 nS	80 pS	.60 pf ¹	35 Vdc	10.0 Ohms	
Chip Capacitors			.50 ²	100 Vdc		
Schottky Pair			.15 ²	3 Vdc		
14-16 GHz						MMD-003-99
Step Recovery Diode	10 nS	50 pS	.50 pf ¹	20 Vdc	12.0 Ohms	
Chip Capacitors			.50 ²	100 Vdc		
Schottky Pair			.10 ²	4 Vdc		
18-24 GHz						MMD-004-99
Step Recovery Diode	8 nS	45 pS	.35 pf ¹	15 Vdc	12.0 Ohms	
Chip Capacitors			.50 ²	100 Vdc		
Schottky Pair			.09 ²	4 Vdc		

Notes:

1. C_j @ -6 Vdc 1MHz
2. C_j @ 0 Vdc 1 MHz

High Performance Sampling Phase Detectors

Part Number	MAX Operating Frequency GHz	Monolithic Schottky Diode Pair			Beam Lead Coupling Capacitors C _T pf	Beam Lead Step Recovery Diode			
		V _F @1 mA mV	R _S Ω	Typ C _J @ 0V pf		C _J @ 6V pf	T _L nS	T _t pS	V _B V
MMD-005-99	4	250	3	0.40	1.0	0.35	25	50	14
MMD-006-99	12	275	6	0.25	0.6	0.35	25	50	14
MMD-007-99	18	300	10	0.12	0.5	0.35	25	50	14
MMD-008-99	20	325	14	0.08	0.5	0.35	25	50	14
MMD-009-99	4	350	3	0.40	1.0	0.35	25	50	14
MMD-010-99	12	400	6	0.25	0.6	0.35	25	50	14
MMD-011-99	18	425	10	0.12	0.5	0.35	25	50	14
MMD-012-99	20	450	14	0.08	0.5	0.35	25	50	14
MMD-013-99	4	575	3	0.40	1.0	0.35	25	50	14

Maximum Ratings

Operating Temperature	-55°C to + 150°C
Storage Temperature	-65°C to + 200°C
Reverse Voltage	See Voltage Ratings

