

PHASE DETECTORS

Surface Mount □ Plug-In & Coaxial

High Output 1000 mV DC output, 1 to 400 MHz

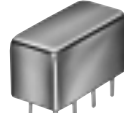
SURFACE MOUNT



SYPD



MPD



RPD

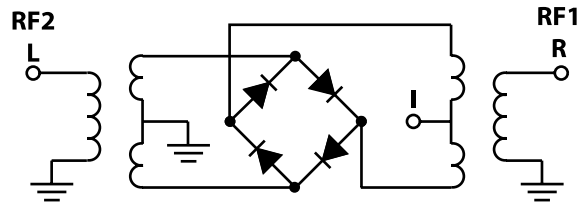


ZRPD

MODEL NO.	FREQUENCY MHz		POWER IN RF1 RF2 (dBm)	SCALE FACTOR mV/deg.	IMPEDANCE (ohms) output load I	ISOLATION (dB) RF1-RF2 Min.	OUTPUT POLARITY RF1/RF2 in-phase	DC OUTPUT (mV) note2				FIGURE-OF-MERIT M Typ.	CASE STYLE Note B	ENVIRONMENTAL NOISE	PRICE \$ Qty. (1-9)
	RF1	RF2						I	Max. Typ.	Offset Typ.	Max.				
SYPD-1	1-100	DC-50	7	8	500	40	neg.	1000	700	0.2	1	143	TT1167	ec	14.95
SYPD-2	10-200	DC-50	7	8	500	40	neg.	1000	700	0.3	1	143	TT1167	ec	18.95
MPD-1	1-100	DC-50	7	8	500	40	neg.	1000	700	0.2	1	143	A11	ea	21.45
MPD-2	10-200	DC-50	7	8	500	40	neg.	1000	700	0.3	1	143	A11	ea	24.95
MPD-21	50-400	DC-50	7	7	500	40*	neg.	800	500	0.5	1	120	A11	ea	26.95
RPD-1	1-100	DC-50	7	8	500	40	neg.	1000	700	0.2	1	143	A01	ea	18.45
RPD-2	5-150	DC-50	7	8	500	40	neg.	1000	700	0.3	1	143	A01	ea	20.95
ZRPD-1	1-100	DC-50	7	8	500	40	neg.	1000	700	0.2	1	143	M22	gg	57.95

NOTES:

- Non-hermetic
- * 30 dB from 200 to 400 MHz
- A. General Quality Control Procedures, Environmental Specifications, Hi-Rel and MIL description are given in General Information (Section 0).
- B. Connector types and case mounted options, case finishes are given in section 0, see "Case Styles & Outline Drawings".
- C. Prices and Specifications subject to change without notice.
 1. Absolute maximum power, voltage and current rating:
 - 1a. RF Input power, 50mW
 - 1b. Peak IF current, 20mA
 2. For MPD-1, RPD-1 & ZRPD-1 DC output decreases to 550 mV over 1-10 MHz as temperature decreases to -55°C



pin connections

see case style outline drawings for pin locations

PORT	ea	ec	gg
RF REF (RF2)	8	2	1
RF IN (RF1)	1	1	3
DC OUT (I)	3,4	3	2
GND EXT.	2,5,6,7	4,5,6	—
CASE GND	2	—	—

NSN GUIDE

MCL NO.	NSN
MPD-1	6625-01-294-7152
MPD-21	5895-01-389-3572
RPD-1	5895-01-250-8525

PHASE SHIFTERS

Plug-In & Surface Mount □

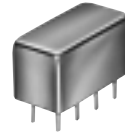


180° VOLTAGE VARIABLE 8 to 1000 MHz

SURFACE MOUNT



JSPHS



SPH

MODEL NO. ◆	FREQUENCY (MHz)	PHASE RANGE (Degrees)	INSERTION LOSS (dB)		CONTROL VOLTAGE (V)	CONTROL BANDWIDTH	VSWR (:1)		CASE STYLE	CON- FIG- NO.	PRICE \$
			Typ.	Max.			Typ.	Max.			
NEW JSPHS-12	8-12	180	0.9	2.5	0-15	DC-50KHz	1.2	1.8	BK276	jh	29.95
	18-26	180	1.2	3.0	0-12	DC-50 KHz	1.2	1.7	BK276	jh	29.95
	100-150	180	1.2	2.5	0-12	DC-30 KHz	1.2	1.7	BK276	jb	31.95
	366-446	180	1.2	2.5	0-12	DC-50 KHz	1.2	1.7	BK276	jb	32.95
NEW JSPHS-1000	700-850	180	1.2	2.3	0-15	DC-50 KHz	1.2	2.6	BK276	jh	32.95
	850-1000	160	1.2	2.0	0-15	DC-50 KHz	1.2	2.0			
SPH-16	13-16	180	1.2	2.5	0-7	DC-50 KHz	1.2	1.7	A01	jh	29.95

features

- JSPHS, J-lead surface mount
- SPH, plug-in hermetically sealed
- good vswr, 20% bandwidth
- low voltage bias control, up to 15V
- low insertion loss, 1.2 dB typ.

pin connections

see case style outline drawings

PORT	jb	jh
IN	14	1
OUT	8	7
BIAS	1,7	4,6
GND	all other pins	all other pins

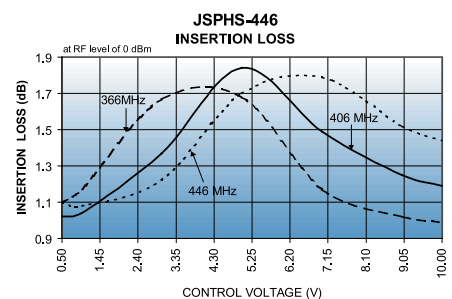
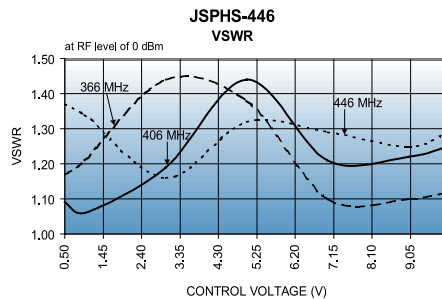
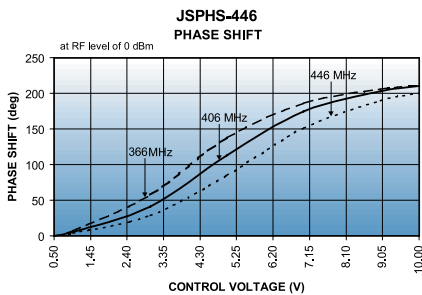
NOTES:

- ◆ JSPHS models, Aqueous washable.
- Non-hermetic
- A. Environmental specifications and re-flow soldering information available in General Information Section.
- B. Connector types and case mounted options, case finishes are given in section 0, see "Case Styles & Outline Drawings".
- C. Prices and Specifications subject to change without notice.
- 1. Maximum input power, 0 dBm
- 2. Absolute maximum power, voltage and current ratings:
 - 2a. Max. RF input power; +20 dBm
 - 2b. Max. control voltage: 20V

JSPHS-446

Control Voltage (V)	Phase Shift* (Deg)			VSWR (:1)			INSERTION LOSS (dB)		
	366 MHz	406 MHz	446 MHz	366 MHz	406 MHz	446 MHz	366 MHz	406 MHz	446 MHz
0.5	0.05	0.03	0.01	1.17	1.09	1.37	1.10	1.02	1.10
1	7.65	5.43	4.14	1.21	1.06	1.34	1.17	1.04	1.08
3	57.73	41.01	29.01	1.44	1.19	1.16	1.67	1.37	1.22
5	137.57	112.81	84.75	1.38	1.44	1.32	1.68	1.84	1.70
7	186.22	174.91	151.47	1.10	1.21	1.29	1.17	1.49	1.79
9	205.93	203.06	189.91	1.10	1.22	1.25	1.02	1.25	1.52
10	211.22	210.59	200.96	1.12	1.25	1.29	0.99	1.19	1.44

* Normalized at control voltage=0.5V



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