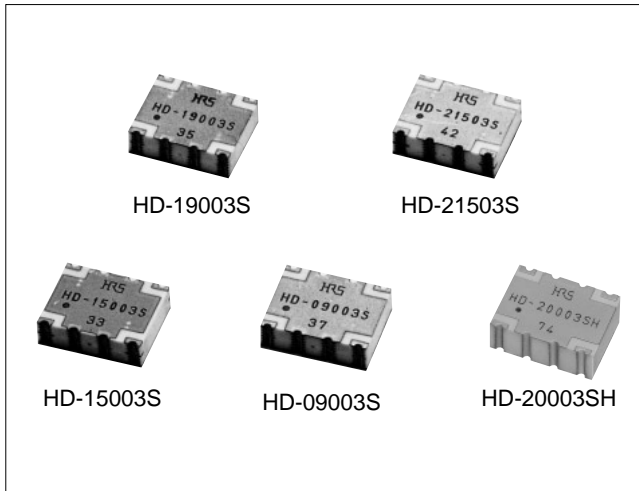


Subminiature Ceramic Couplers(SMT type)

HD-S Series



■ Features

1.Subminiature Design

Hirose Electric's expertise in miniaturization and matching technology has permitted a subminiature, lightweight design.

2.High Performance

The high frequency characteristics feature extremely low loss and a high degree of matching which makes these couplers ideal for a wide variety of wireless phone base station applications.

3.Suited to Automatic Mounting

Embossed tape packaging permits automatic mounting.(Individual delivery can also be accommodated.)

■ Product Specifications

Ratings	Frequency range (Note) Characteristic impedance Maximum Input Power (Note)	800 to 2300 MHz 50 ohms 10 to 50 W	Operating temperature range Operating relative humidity	-10°C to +65°C 95% Max.
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Note: The frequency range and the maximum input power will differ depending on the products.

Item	Standard	Conditions
1.Insulation resistance	1000 Mohms min.	100 V DC
2.Vibration	No electrical discontinuity of 1 μ s or more Contact resistance: 1000 m ohms max. No damage, cracks, or parts dislocation	Frequency of 10 to 500 Hz, overall amplitude of 1.52 mm, acceleration of 98 m/s ² for 2 hours in each of 3 directions
3.Shock		Acceleration of 980 m/s ² , sine half-wave waveform, 3 cycles in each of the 3 axis
4.Temperature cycle	Contact resistance: 1000 m ohms Max. Insulation resistance: 1000 M ohms min. No damage, cracks, or parts dislocation	Temperature : -55°C → +5°C to +35°C → +85°C → +5°C to +35°C Time : 30 → 15 max. → 30 → 15 max. (Minutes) 200 cycles

●The test method conforms to MIL-STD-202.

■ Materials

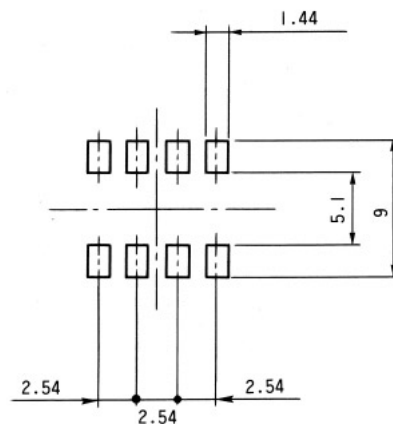
Part	Material	Finish
Case	Ceramic	Solder plating

■ Ordering Information

HD - 090 03 S
① ② ③ ④

① Series Name: HD (Directional Couplers)	③ Coupling 03 : 3dB 10 : 10dB 16 : 16dB 21 : 21dB 23 : 23dB
② Center Frequency 090 : 900MHz 150 : 1500MHz 190 : 1900MHz 200 : 2000MHz 215 : 2150MHz	④ Board Mounting Method S : SMT SH : SMT High Power

■ PCB Mounting Pattern



●Resist processing should be performed around the electrode pads.

Specifications

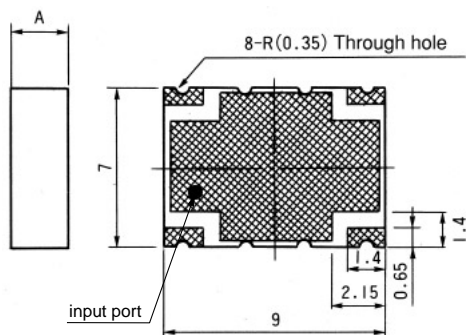
Part Number	Frequency Range (MHz)	Coupling (dB)	Frequency Sensitivity (dB)	Insertion Loss (dBMax)	Isolation (dB Min)	Directivity (dB Min)	V.S.W.R. (Max)	Weight (g)	Power (W)
HD-09003S	800~1000	3 ⁺⁸	±0.35	—	20	—	1.22	0.6	10
HD-09010S	840~ 960	10±1	±0.4	0.4	—	15	1.3	0.6	20
HD-09016S	840~ 960	16±1	±0.4	0.4	—	15	1.3	0.6	20
HD-09023S	840~ 960	23±1	±0.4	0.4	—	15	1.3	0.6	20
HD-15003S	1400~1600	3 ⁺⁸	±0.35	—	20	—	1.2	0.6	10
HD-15010S	1400~1600	11±1	±0.4	0.4	—	15	1.25	0.6	20
HD-15016S	1400~1600	16±1	±0.4	0.4	—	10	1.35	0.6	20
HD-15021S	1400~1600	21±1	±0.4	0.4	—	10	1.35	0.6	20
HD-19003S	1850~1950	3 ⁺⁸	±0.5	—	20	—	1.2	0.6	20
HD-21503S	1900~2300	3 ⁺⁸	±0.5	—	20	—	1.25	0.6	20
HD-20003SH	1900~2200	3 ⁺⁸	±0.4	—	20	—	1.25	0.7	50

- The coupling loss component is not included in the insertion loss. ●There is a 90° phase difference between the output and the coupling.
- When ordering embossed tape packaged items, affix (06) to the end of the product number. One reel contains 1,000 pieces.

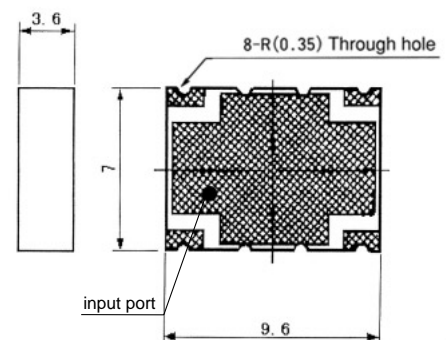
External Dimensions

HD-09003S HD-09023S HD-15016S HD-21503S
 HD-09010S HD-15003S HD-15021S
 HD-09016S HD-15010S HD-19003S

HD-20003SH



Coupling	A
3dB	2.6
10dB	1.6
16dB	1.6
21dB	1.8
23dB	1.8



Precautions

1. Soldering (1) Recommended temperature profile	<p>Note 1: Up to 2 cycles of reflow soldering are possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle.</p> <p>Note 2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals (for surface mounted receptacle).</p>
(2) Recommended manual soldering	Manual soldering: 350°C for 5 seconds
(3) Recommended screen thickness	0.15 mm
2. Product Storage	<p>① After opening the package reseal promptly or store in a desiccator with a desiccant.</p> <p>② Store in a place that is not exposed to harmful gases which include sulfur or chlorine, etc.</p> <p>③ Use within one year of delivery.</p>