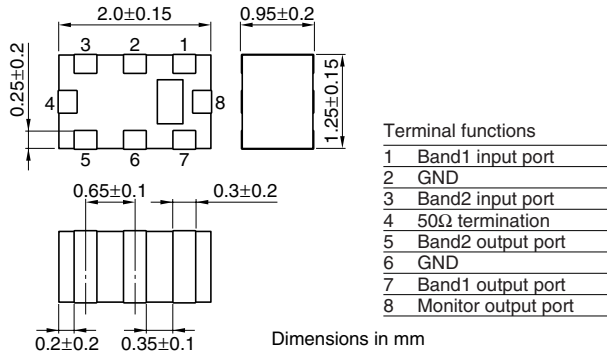


# Multilayer Chip Dual-Band Directional Couplers For AGSM/DCS/PCS-Tx

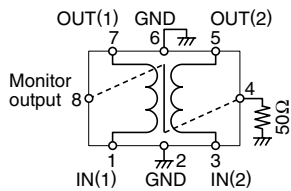
Conformity to RoHS Directive

HHM Series HHM2319B2

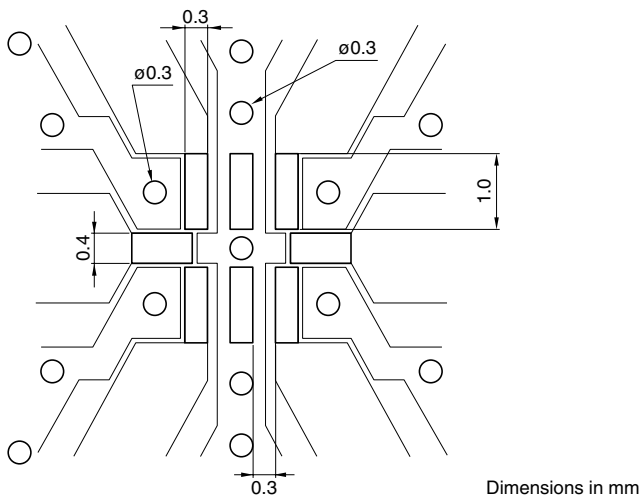
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERNS



This width is 50Ω  
CPW for 0.6mm thick Teflon substrate.

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

### ELECTRICAL CHARACTERISTICS

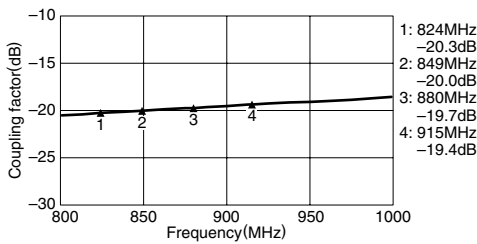
Band		1	2			
System		AMPS	GSM	DCS	PCS	
Frequency range	(MHz)	824 to 849	880 to 915	1710 to 1785	1850 to 1910	
Coupling factor	(dB)	-20.0±1.0	-20.0±1.0	-20.0±1.0	-20.0±1.0	
Insertion loss	(dB)max.	0.20	0.20	0.30	0.30	
Isolation*(Directivity)	IN1-OUT2	(dB)min.	32	32	32	
	IN2-OUT1	(dB)min.	32	32	32	
	IN1-IN2	(dB)min.	28	28	28	
	IN-Load	(dB)min.	35typ. 32min.	35typ. 32min.	35typ. 32min.	35typ. 32min.
VSWR	max.	1.3	1.3	1.3	1.3	
Temperature range	Operating	(°C)	-40 to +85	-40 to +85	-40 to +85	-40 to +85
	Storage	(°C)	-40 to +85	-40 to +85	-40 to +85	-40 to +85

\* Isolation between opposite bands is specified over the frequency ranges of both bands.  
Isolation in-band is specified over the frequency of the band in frequency.

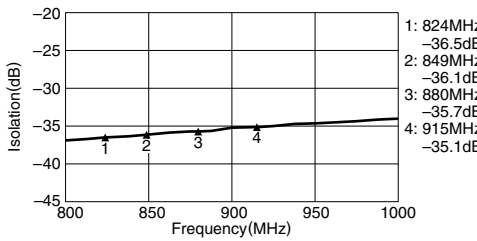
### FREQUENCY CHARACTERISTICS

#### AMPS850/GSM900

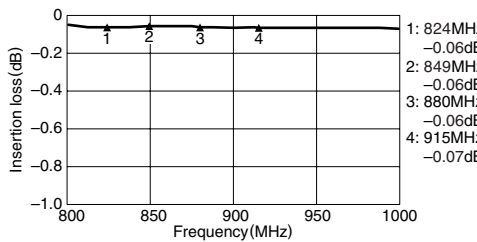
##### COUPLING



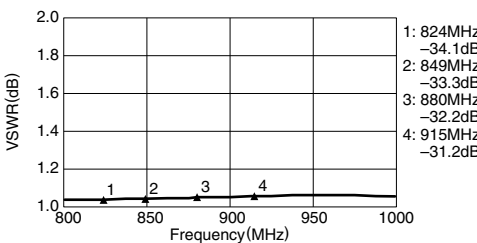
##### ISOLATION



##### INSERTION LOSS

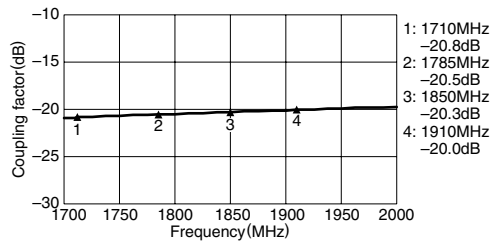


##### VSWR

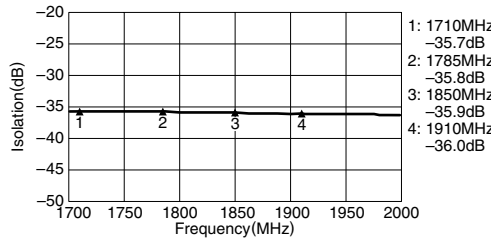


#### DCS1800/PCS1900

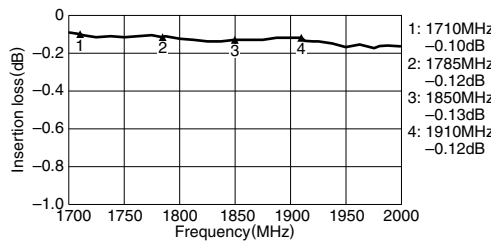
##### COUPLING



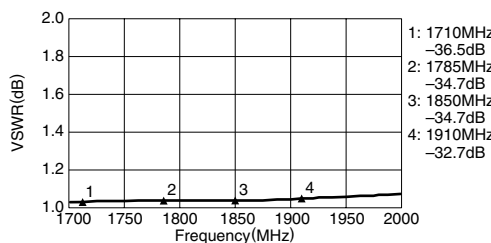
##### ISOLATION



##### INSERTION LOSS



##### VSWR



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