



# Multilayer Directional Coupler

For 698-2620MHz

# HHM22139A2

---

**1.6x0.8mm [EIA 0603]\***

\* Dimensions Code JIS[EIA]

---

# Multilayer Directional Coupler

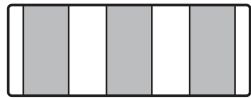
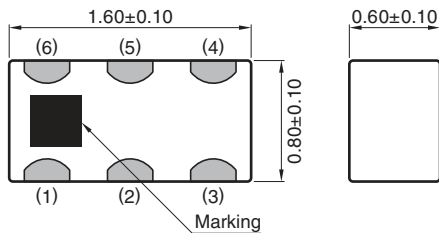
Conformity to RoHS Directive

For 698-2620MHz

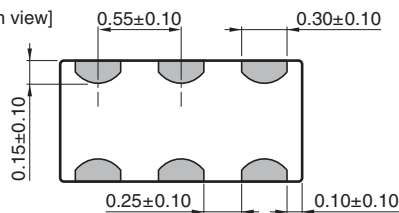
## HHM22139A2

### SHAPES AND DIMENSIONS

[Top view]



[Bottom view]

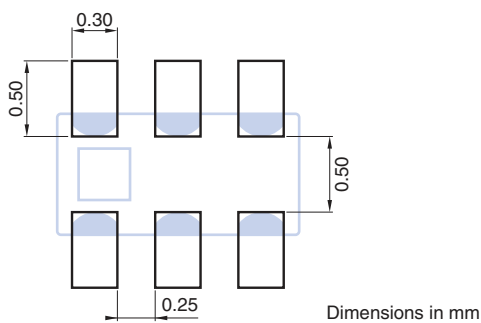


Terminal functions

1	Input Port
2	GND
3	Output Port
4	50Ω terminate
5	GND
6	Coupling Port

Dimensions in mm

### RECOMMENDED LAND PATTERN



Dimensions in mm

○ RoHS Directive Compliant Product: See the following for more details. <https://product.tdk.com/info/en/environment/rohs/index.html>

- All specifications are subject to change without notice.
- Before using these products, be sure to request the delivery specifications.

# HHM22139A2

## ELECTRICAL CHARACTERISTICS

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Coupling Factor (dB)	698 to 915	23.0	25.5	27.0
	1710 to 2025	21.5	24.0	26.5
	2300 to 2620	22.5	25.0	27.5
Insertion Loss (dB)	698 to 915	—	0.07	0.20
	1710 to 2025	—	0.09	0.20
	2300 to 2620	—	0.11	0.20
Return Loss (dB)	698 to 915	15	27.5	—
	1710 to 2025	15	27.4	—
	2300 to 2620	15	29.0	—
	698 to 915 (Coupling Port)	15	21.7	—
	1710 to 2025 (Coupling Port)	15	24.4	—
	2300 to 2620 (Coupling Port)	15	26.4	—
Isolation (dB)	698 to 915	45	46.3	—
	1710 to 2025	45	48.9	—
	2300 to 2620	45	49.7	—
Characteristic Impedance ( $\Omega$ )			50 (Nominal)	

· Ta: +25+/-5°C

## TEMPERATURE RANGE

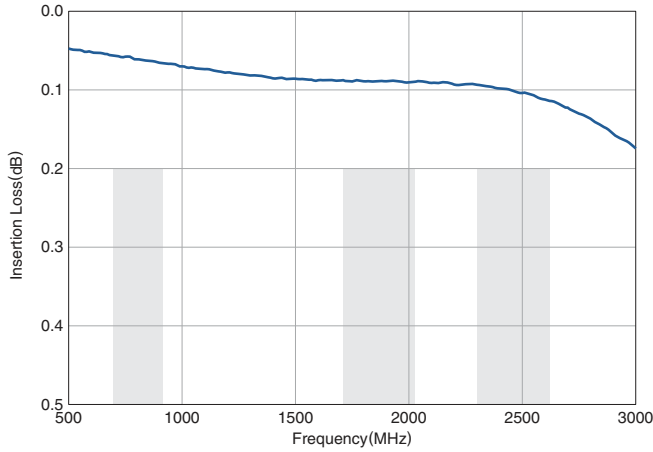
Operating temperature (°C)	Storage temperature (°C)
-40 to +85	-40 to +85

- All specifications are subject to change without notice.
- Before using these products, be sure to request the delivery specifications.

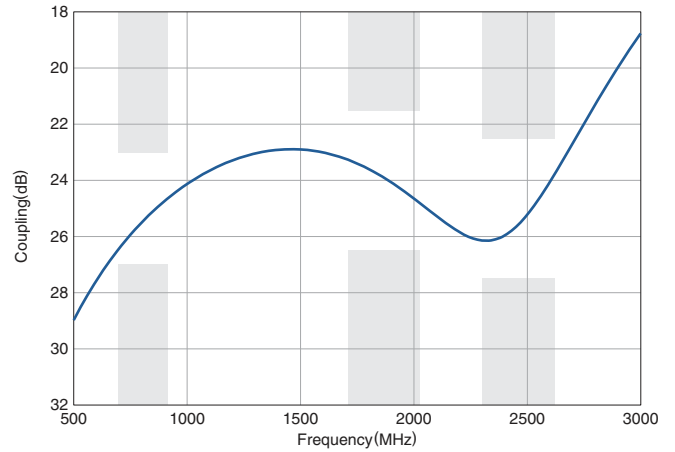
# HHM22139A2

## FREQUENCY CHARACTERISTICS

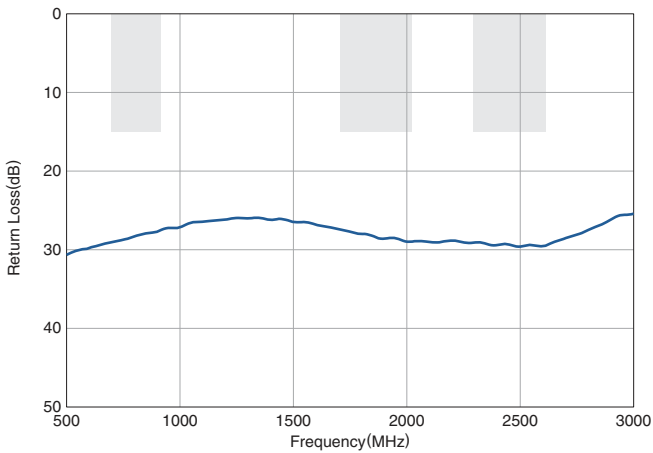
### INSERTION LOSS



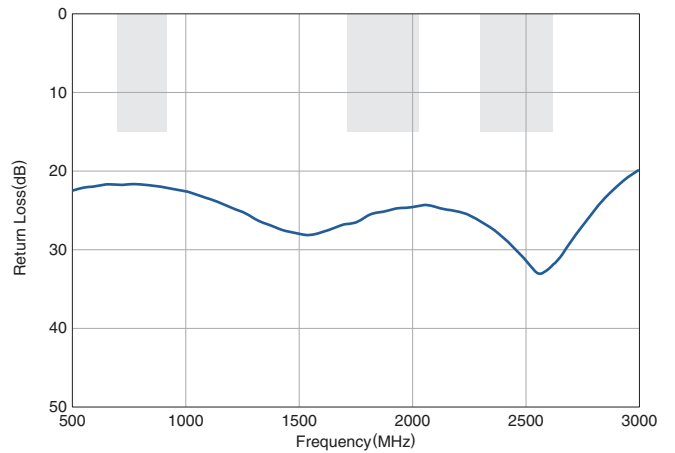
### COUPLING



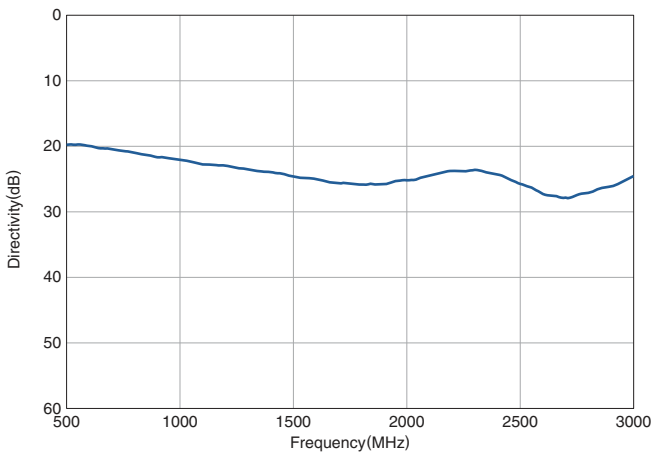
### RETURN LOSS



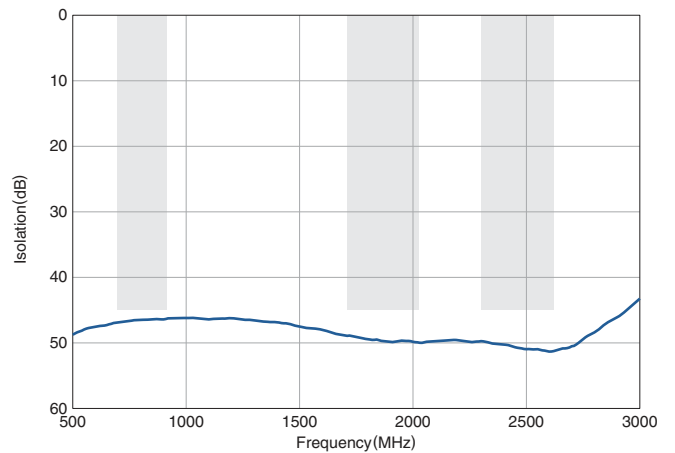
### RETURN LOSS(Coupling Port)



### DIRECTIVITY



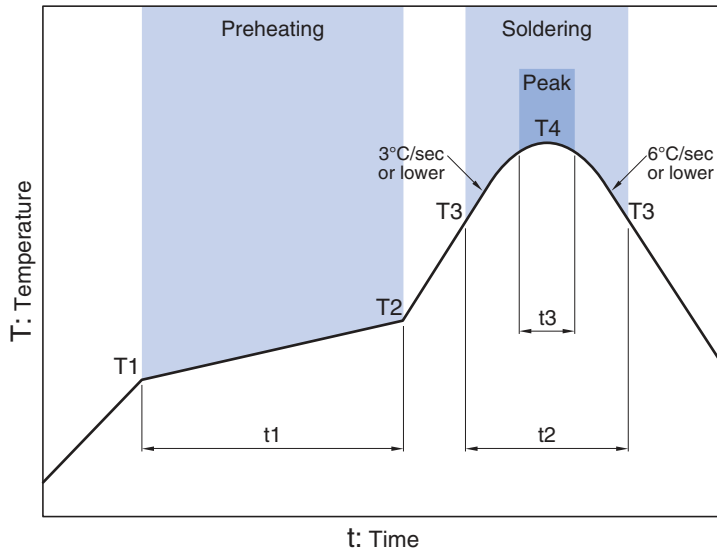
### ISOLATION



- All specifications are subject to change without notice.
- Before using these products, be sure to request the delivery specifications.

# HHM22139A2

## RECOMMENDED REFLOW PROFILE



Preheating			Soldering			
			Critical zone (T3 to T4)		Peak	
Temp.		Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3*
150°C	200°C	60 to 120sec	217°C	60 to 120sec	240 to 260°C	30sec max.

\* t3 : Time within 5°C of actual peak temperature  
The maximum number of reflow is 3.

## REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

### SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

#### REMINDERS

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this catalog.

- |   |  |
|---|--|
| (1) Aerospace/Aviation equipment                                  | (8) Public information-processing equipment                                  |
| (2) Transportation equipment (cars, electric trains, ships, etc.) | (9) Military equipment   |
| (3) Medical equipment   | (10) Electric heating apparatus, burning equipment                           |
| (4) Power-generation control equipment                            | (11) Disaster prevention/crime prevention equipment                          |
| (5) Atomic energy-related equipment                               | (12) Safety equipment  |
| (6) Seabed equipment  | (13) Other applications that are not considered general-purpose applications |
| (7) Transportation control equipment                              |  |

When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc., to ensure higher safety.