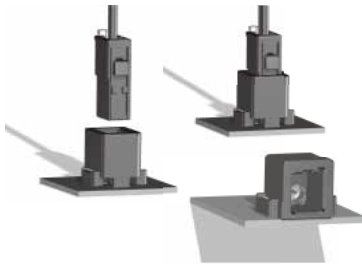
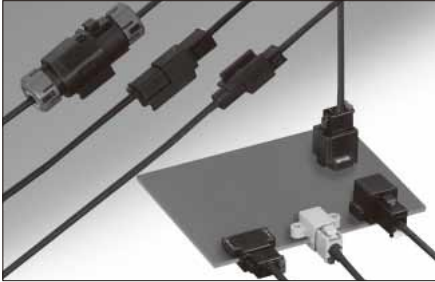


# GT16G Series

— 6 GHz Compatible Antenna Connector —

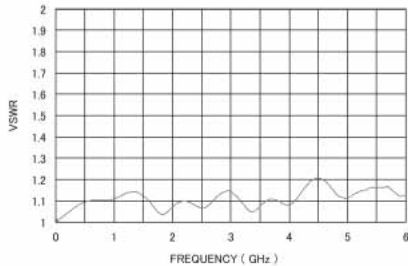


## ■ Features

- **Excellent high frequency performance**  
V.S.W.R. is 1.5 or less (DC to 6 GHz)
- **Satisfies rigorous test conditions for automotive devices.**
- **Robust lock design provides a tactile click.**  
-Lock strength : 98N Min.
- **Many variations**
  - Board connectors :  
SMT type, mid-mount type, lead reflow type
  - In-line connectors :  
Retainer-less type, double latching type, bracket type, waterproof type
- **RoHS compliant**
- ◆ **Applications**  
Automotive WiFi/Bluetooth, V2X, DSRC, etc.

## ■ High Frequency Performance

- **Excellent high frequency performance with a V.S.W.R. of 1.5 or less in all frequencies between DC and 6 GHz.**
- **Proven track record as connector for automotive ETC and automotive WiFi/Bluetooth.**



\*Data taken based on GT16GH-1P-DSA and GT16G-1SHU(24).

## ■ Product Specifications

Ratings	Rated current : 1A		Rated voltage : 250V AC	
	Operating temperature range : -30°C to 105°C		Storage temperature range : -40°C to 105°C	
Item	Specifications		Conditions	
1. Insulation Resistance	100MΩ min		Measured at 500V DC	
2. Withstanding Voltage	There shall be no flashover or dielectric breakdown.		650V AC applied for 1 minute.	
3. Contact resistance	Center contact : 30mΩ max, Outer contact : 60mΩ max		Measured at 1A DC	
4. High Frequency Characteristics	V.S.W.R. is 1.5 or less		Measured in a range between 0 and 6 GHz, Characteristic impedance: 50Ω	
5. Heat resistance	Center contact : 60mΩ max, Outer contact : 120mΩ max		105°C for 300 hours	
6. Low temperature resistance	Center contact : 60mΩ max, Outer contact : 120mΩ max		-40°C, 120 hours	
7. Vibration resistance	There shall be no electrical discontinuity of 10 μs or more.		Frequency : 20-200Hz, Acceleration : 43.1m/s <sup>2</sup> in 3 directions for 3 hours.	
8. Humidity resistance	Insulation resistance : 100MΩ min		Left unattended at a temperature of 60°C, and humidity of 90 to 95% for 96 hours.	
9. Temperature cycles	Center contact : 60mΩ max, Outer contact : 120mΩ max. There shall be no damage, cracks or loosened parts.		Temperature -40°C → Room temperature → 105°C → Room temperature Time : 30 min → 5 min → 30 min → 5 min, 1000 cycles	
10. Mating durability	Center contact : 60mΩ max, Outer contact : 120mΩ max		30 mating cycles (insertion/extraction)	
11. Solder heat resistance	There shall be no deformation or excessive play of contacts or other parts.		-Reflow : Perform twice at the specified temperature profile. -Soldering iron : 350°C, 10 sec max.	

## Product Number Structure

Refer to the chart below to determine product specifications from the product number.

### Board Connector/In-line Connector

**GT 16G \* - 1 P - H**

①      ②      ③      ④      ⑤      ⑥

① Series name : GT	⑤ Contact type Board connector P : Pin header In-line connector S : Socket P : In-line plug PP : In-line plug with bracket P/S : Available for both male and female
② Series No : 16C, 16G, 5W	⑥ Product type Board connector H : Right angle DSA : Straight In-line connector HU : Housing R : Retainer
③ Series Sub No : Serial No.	
④ Pin-count : 1	

### Center Contact/Outer Contact

**GT 16G \* - 2428 SCF**

①      ②      ③      ④      ⑤

① Series name : GT	⑤ Type category/Packaging type Center SCF : Socket crimp contact/reel PCF : Plug crimp contact/reel Outer shell SC : Socket crimp contact/piece PC : Plug crimp contact/piece
② Series No : 16G	
③ Series Sub No : Serial No..	
④ licable wire Center 2428 : AWG# 24 to 28 Outer/1.6-2.9 : 1.5D-2W or equivalent	

### Insulator/Contact Ferrule/Outer Ferrule

**GT 16G - SC**

①      ②      ③

① Series name : GT	③ Part name SC : Female insulator PC : Male insulator FR : Contact ferrule 1.5 DHQS : Outer Ferrule
② Series No : 16G	

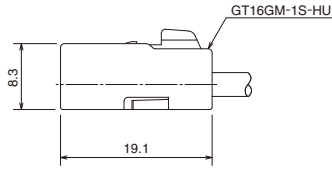
## GT16G Series Mating Table

F Connector	M Connector	
GT16GM-1S-ASSY (Retainer-less type)	SMT type	GT16GMP-1P-H(55)
	Board mid-mount type	GT16GM-1P-H(55)
	In-line type	GT16GM-1P-ASSY
	In-line bracket type	GT16GMN-1PP-ASSY
GT16G-1S-ASSY GT16GT-1S-ASSY (Double latch type)	SMT type	GT16GD-1P-H(55)
		GT16GT-1P-H(55)
		GT16GH-1P-H
	Board mid-mount type	GT16G-1P-H(55)
		GT16GL-1P-H(55)D
		GT16GRL-1P-H(55)
Lead reflow type	GT16GH-1P-DSA	
In-line bracket type	GT16GT-1PP-ASSY	
GT16GW-1S-ASSY	Waterproof in-line type	GT16GW-1P-ASSY

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 GT16  
 GT13  
 GT19  
 FH65  
 FH40  
 FH35  
 FH67

## ■ Harness Connector

### ● GT16GM-1S-ASSY



\*Uses two insulators per termination.

## ■ Housing/Insulator

Part	Housing	Insulator
Part No.	GT16GM-1S-HU	GT16G-SC
HRS No.	766-0033-9	766-0023-5
Material	PBT	PBT
Color	Black	Natural
Sales unit	1	1
RoHS	○	○
Dimensions		

## ■ Center Contact/Outer Contact

Part	Center Contact	Outer Contact
Part No.	GT16G-2428SCF	GT16GM-/1.6-2.9SC
HRS No.	766-0022-2	766-0025-0
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Applicable wire	AWG#24~28	1.5D-2W or equivalent
Sales unit	10,000 pcs/reel	1
RoHS	○	○
Dimensions		

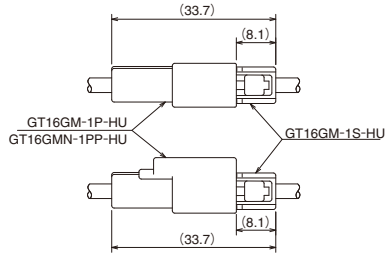
## ■ Contact Ferrule/Outer Ferrule

Part	Contact Ferrule	Outer Ferrule
Part No.	GT16G-FR	GT16G-1.5DHQS
HRS No.	766-0028-9	766-0027-6
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Sales unit	1	1
RoHS	○	○
Dimensions		

## ●GT16GM-1P-ASSY



## ●GT16GMN-1PP-ASSY



\*Uses two insulators per termination.

## ■Housing/Insulator

Part	Housing		Insulator
Part No.	GT16GM-1P-HU	GT16GMN-1PP-HU	GT16G-PC
HRS No.	766-0050-8	766-0051-0	766-0047-3
Material	PBT	PBT	PBT
Color	Black	Black	Natural
Sales unit	1	1	1
RoHS	○	○	○
Dimensions			

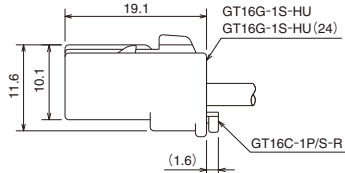
## ■Center Contact/Outer Contact

Part	Center Contact	Outer Contact
Part No.	GT16G-2428PCF	GT16G-/1.6-2.9PC
HRS No.	766-0046-0	766-0048-6
Material	Brass	Phosphor bronze
Finish	Tin plating	Tin plating
Applicable wire	AWG#24~28	1.5D-2W or equivalent
Sales unit	10,000 pcs/reel	1
RoHS	○	○
Dimensions		

## ■Contact Ferrule/Outer Ferrule

Part	Contact Ferrule	Outer Ferrule
Part No.	GT16G-FR	GT16G-1.5DHQS
HRS No.	766-0028-9	766-0027-6
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Sales unit	1	1
RoHS	○	○
Dimensions		

●GT16G-1S-ASSY



\*Uses two insulators per termination.

■Housing/Insulator/Retainer

Part	Housing		Insulator	Retainer
Part No.	GT16G-1S-HU	GT16G-1S-HU(24)	GT16G-SC	GT16C-1P/S-R
HRS No.	766-0026-3	766-0026-3-24	766-0023-5	766-0011-6
Material	PBT	PBT	PBT	PBT
Color	Light gray	Black	Natural	Dark gray
Sales unit	1	1	1	1
RoHS	○	○	○	○
Dimensions				

■Center Contact/Outer Contact

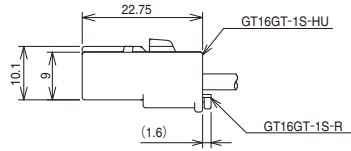
Part	Center Contact	Outer Contact
Part No.	GT16G-2428SCF	GT16G-/1.6-2.9SC
HRS No.	766-0022-2	766-0024-8
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Applicable wire	AWG#24~28	1.5D-2W or equivalent
Sales unit	10,000 pcs/reel	1
RoHS	○	○
Dimensions		

■Contact Ferrule/Outer Ferrule

Part	Contact Ferrule	Outer Ferrule
Part No.	GT16G-FR	GT16G-1.5DHQS
HRS No.	766-0028-9	766-0027-6
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Sales unit	1	1
RoHS	○	○
Dimensions		

GT5  
 GT13  
**GT16**  
 GT19  
 GT21  
 GT36  
 GT43  
 GT17  
 GT32  
 GT25  
 KM32  
 ZS05  
 ZS05/2  
 HH-200  
 ZS04W  
 IT202K  
 FX26  
 DF40  
 DF40GL  
 RH28K  
 FH32K  
 FH65  
 FH40  
 FH63  
 FH67

●GT16GT-1S-ASSY



\*Uses two insulators per termination.

■Housing/Insulator/Retainer

Part	Housing	Insulator	Retainer
Part No.	GT16GT-1S-HU	GT16G-SC	GT16GT-1S-R
HRS No.	766-0098-4	766-0023-5	766-0099-7
Material	PBT	PBT	PBT
Color	Black	Natural	Natural
Sales unit	1	1	1
RoHS	○	○	○
Dimensions			

■Center Contact/Outer Contact

Part	Center Contact	Outer Contact
Part No.	GT16G-2428SCF	GT16G-/1.6-2.9SC
HRS No.	766-0022-2	766-0024-8
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Applicable wire	AWG#24~28	1.5D-2W or equivalent
Sales unit	10,000 pcs/reel	1
RoHS	○	○
Dimensions		

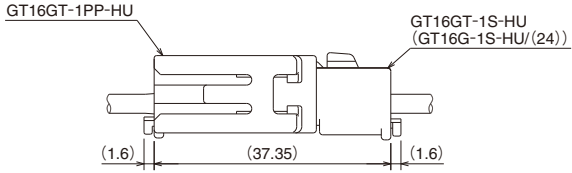
■Contact Ferrule/Outer Ferrule

Part	Contact Ferrule	Outer Ferrule
Part No.	GT16G-FR	GT16G-1.5DHQS
HRS No.	766-0028-9	766-0027-6
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Sales unit	1	1
RoHS	○	○
Dimensions		

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●GT16GT-1PP-ASSY



\*Uses two insulators per termination.

■Housing/Insulator/Retainer

Part	Housing	Insulator	Retainer
Part No.	GT16GT-1PP-HU	GT16G-PC	GT16C-1P/S-R
HRS No.	766-0049-9	766-0047-3	766-0011-6
Material	PBT	PBT	PBT
Color	Black	Natural	Dark gray
Sales unit	1	1	1
RoHS	○	○	○
Dimensions			

■Center Contact/Outer Contact

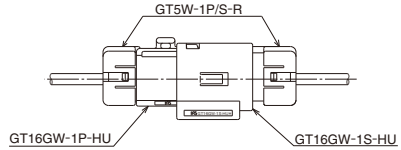
Part	Center Contact	Outer Contact
Part No.	GT16G-2428PCF	GT16G-/1.6-2.9PC
HRS No.	766-0046-0	766-0048-6
Material	Brass	Phosphor bronze
Finish	Tin plating	Tin plating
Applicable wire	AWG#24~28	1.5D-2W or equivalent
Sales unit	10,000 pcs/reel	1
RoHS	○	○
Dimensions		

■Contact Ferrule/Outer Ferrule

Part	Contact Ferrule	Outer Ferrule
Part No.	GT16G-FR	GT16G-1.5DHQS
HRS No.	766-0028-9	766-0027-6
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Sales unit	1	1
RoHS	○	○
Dimensions		

●GT16GW-1P-ASSY

●GT16GW-1S-ASSY



\*Uses two insulators per termination.

**Housing/Insulator/Retainer**

Part	Housing		Insulator		Retainer
Part No.	GT16GW-1P-HU	GT16GW-1S-HU	GT16G-PC	GT16G-SC	GT5W-1P/S-R
HRS No.	766-0077-4	766-0076-1	766-0047-3	766-0023-5	755-0028-5
Material	PBT	PBT/ Silicon rubber	PBT	PBT	PBT/ Silicon rubber
Color	Black	Black/White	Natural	Natural	Dark gray/ Right blue
Sales unit	1	1	1	1	1
RoHS	○	○	○	○	○
Dimensions					

**Center Contact/Outer Contact**

Part	Center Contact		Outer Contact	
Part No.	GT16G-2428PCF	GT16G-2428SCF	GT16G-/1.6-2.9PC	GT16G-/1.6-2.9SC
HRS No.	766-0046-0	766-0022-2	766-0048-6	766-0024-8
Material	Brass	Phosphor bronze	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating	Tin plating	Tin plating
Applicable wire	AWG#24~28	AWG#24~28	1.5D-2W or equivalent	1.5D-2W or equivalent
Sales unit	10,000 pcs/reel	10,000 pcs/reel	1	1
RoHS	○	○	○	○
Dimensions				

**Contact Ferrule/Outer Ferrule**

Part	Contact Ferrule	Outer Ferrule
Part No.	GT16G-FR	GT16G-1.5DHQS
HRS No.	766-0028-9	766-0027-6
Material	Phosphor bronze	Phosphor bronze
Finish	Tin plating	Tin plating
Sales unit	1	1
RoHS	○	○
Dimensions		

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GT5  
GT13  
GT16  
GT19  
GT21  
GT36  
GT43  
GT17  
GT32  
GT25  
KM37  
ZS05  
ZS05/2  
HM-200  
ZS04W  
T2323L  
FX26  
DF40  
DF40GL  
FH28K  
FH2K  
FH35  
FH65  
FH40  
FH63  
FH67

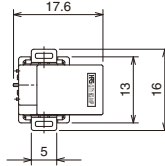


**Board connector**

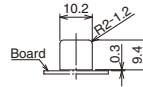
- SMT type (On Board)
- ◆ GT16GMP-1P-H (55)



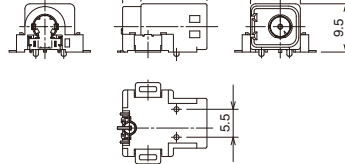
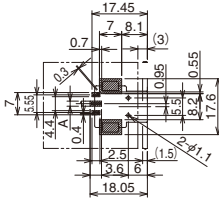
**Dimensions**



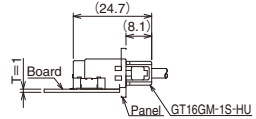
**Recommended Panel Dimensions**



**Recommended Board Dimensions**



**Mated Connector**



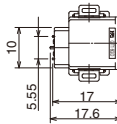
Note : Adjust dimension A of the microstrip line to satisfy 50Ω characteristic impedance.

Part No.	HRS No.	Part	Material	Finish or color	Sales unit	RoHS
GT16GMP-1P-H(55)	766-0052-3 55	Housing	PPS	Black	200 pcs/reel	○
		Center Terminal	Phosphor bronze	Tin plating		
		Outer terminal	Phosphor bronze	Tin plating		
		Insulators L, R	PPS	Natural		
		Shield plate	Phosphor bronze	Tin plating		
		Retention tab	Brass	Tin plating		

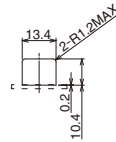
◆ GT16GD-1P-H (55)



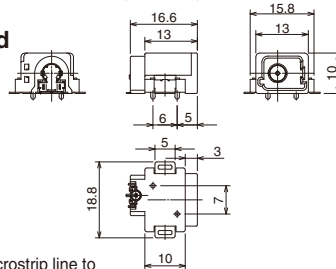
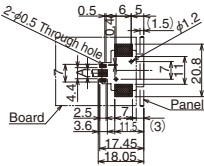
**Dimensions**



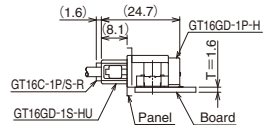
**Recommended Panel Dimensions**



**Recommended Board Dimensions**



**Mated Connector**



Note : Adjust dimension A of the microstrip line to satisfy 50Ω characteristic impedance.

Part No.	HRS No.	Part	Material	Finish or color	Sales unit	RoHS
GT16GD-1P-H(55)	766-0044-5 55	Housing	PPS	Black	200 pcs/reel	○
		Center Terminal	Phosphor bronze	Tin plating		
		Outer terminal	Phosphor bronze	Tin plating		
		Insulators L, R	PPS	Natural		
		Shield plate	Phosphor bronze	Tin plating		
		Retention tab	Brass	Tin plating		

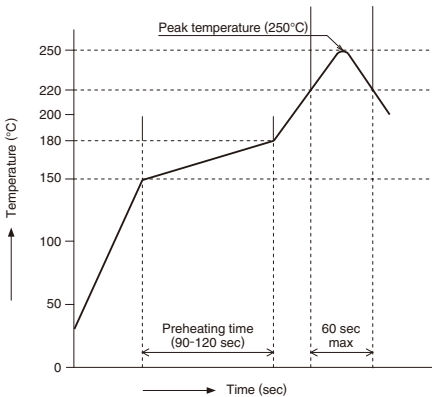








## ◆ Precautions for use

<p>1. Recommended temperature profile</p>	 <p style="text-align: center;">Peak temperature (250°C)</p> <p style="text-align: center;">Preheating time (90-120 sec)      60 sec max</p> <p style="text-align: center;">Time (sec)</p> <p>[Conditions]  1. Peak temperature : 250°C  2. Heating unit : 220°C min, 60 sec max.  3. Preheating unit : 150 to 180°C for 90 to 120 sec  4. Number of cycles : 2 cycles max</p> <p>Note 1 : Temperatures show the surface temperature of the board near the connector lead part.  Note 2 : If nitrogen reflow is used, mount the product at an oxygen concentration of no less than 1,000 [ppm].  Please contact us if your concentration will be below 1,000 [ppm].</p>
<p>2. Recommended hand soldering conditions</p>	<p>Soldering iron temperature : 340 ± 10°C Soldering time : 3 sec max</p>
<p>3. Recommended screen thickness : Aperture ratio (pattern area ratio)</p>	<p>Thickness : 0.15mm aperture ratio : 100%</p>
<p>4. Cleaning</p>	<p>Cleaning is not recommended. If the product must be cleaned, make sure to evaluate the outcome of its cleaning before use. (Cleaning may alter its mating/un-mating characteristics or resistance to environmental elements.)</p>
<p>5. Precautions</p>	<ul style="list-style-type: none"> <li>■ Be careful not to mate or un-mate the product without mounting it on the board This may cause damage or deform the contacts.</li> <li>■ Make sure not to support the board only by the connector. Implement other means to hold the board in place.</li> <li>■ Be careful not to apply excessive prying forces when mating or un-mating as doing so may result in damage</li> <li>■ Do not apply flux when hand soldering as this will cause flux wicking on the connector.</li> </ul>

## ● Crimping Tools

Applicable Connector		GT16GM-1S-ASS GT16G-1S-ASSY GT16GT-1S-ASSY GT16GW-1S-ASSY	GT16GM-1P-ASSY GT16GMN-1PP-ASSY GT16GT-1PP-ASSY GT16GW-1P-ASSY
Process 1.	Cable termination	Schleuniger MP257, etc.	Schleuniger MP257, etc.
2.	Center contact crimping	Crimping machine unit 105C type +	Crimping machine unit 105C type +
3.	Cable forming	AP105-GT16G-2428S Shield forming tool GT16G-1.5DHQS/CF-MD	AP105-GT16G-2428P Shield forming tool GT16G-1.5DHQS/CF-MD
4.	Inserting the outer ferrule	Outer ferrule insertion tool GT16G-1.5DHQS/PR-MD	Outer ferrule insertion tool GT16G-1.5DHQS/PR-MD
5.	Inserting the contact ferrule	Contact ferrule insertion tool GT16G-FR/PR-MD	Contact ferrule insertion tool GT16G-FR/PR-MD
6.	Attaching the insulator	Manual work	Manual work
7.	Inserting the outer shell	Insulator pushing tool GT16G-SC/PR-MD	—
8.	Caulking the outer shell	Hand press HOS-7 +	Hand press HOS-7 +
9.	Mounting the housing (retainer)	Manual work	Manual work
10.	Inspection	Inspection of high frequency characteristics Inspection of continuity/withstanding voltage Visual inspection	Inspection of high frequency characteristics Inspection of continuity/withstanding voltage Visual inspection

Please refer to our cable termination procedure manual for performing terminations.