

APPROVAL SHEET

RFCPL Series – 1608(0603)- RoHS Compliance

MULTILAYER CERAMIC COUPLER

Halogens Free Product

LTE Band RF Applications

P/N: RFCPL1608070PM9T16

*Contents in this sheet are subject to change without prior notice.

FEATURES

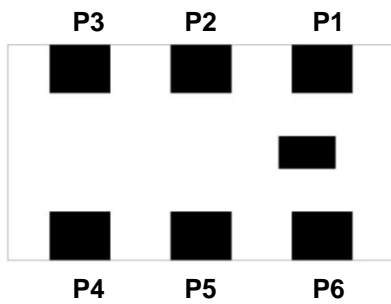
1. Miniature footprint: 1.6X 0.8 X 0.7 mm³
2. Low Profile Thickness
3. Low Insertion loss
4. LTCC process

APPLICATIONS

1. For TDD_LTE/FDD_LTE working frequency
2. For DCS/PCS applications
3. For Bluetooth, Wireless LAN 802.11b/g/ n, HomeRF

CONSTRUCTION

Top view



PIN	Connection	PIN	Connection
1	Input	4	Termination
2	GND	5	GND
3	Coupled Out	6	Main Out

DIMENSIONS

Figure	Symbol	Dimension (mm)
<p>Top view Bottom view Side view</p>	L	1.60 ± 0.15
	W	0.80 ± 0.15
	T	0.70 max.
	A	0.175 ± 0.15
	B	0.25 ± 0.15
	C	0.25 ± 0.15
	D	0.50 ± 0.15
	E	0.20 ± 0.15

ELECTRICAL CHARACTERISTICS

RFCPL1608070PM9T16	Specification
Frequency range	700 ~ 2700 MHz
Insertion Loss at 25°C	0.2 dB max. @ 700 ~ 790 MHz (Typical 0.07 dB) 0.2 dB max. @ 820 ~ 900 MHz (Typical 0.07 dB) 0.3 dB max. @ 1701 ~ 2100 MHz (Typical 0.15 dB) 0.3 dB max. @ 2300 ~ 2700 MHz (Typical 0.15 dB)
Insertion Loss at -40°C ~ +85°C	0.3 dB max. @ 700 ~ 790 MHz 0.3 dB max. @ 820 ~ 900 MHz 0.4 dB max. @ 1701 ~ 2100 MHz 0.4 dB max. @ 2300 ~ 2700 MHz
Coupling in BW	24 ~ 27 dB @ 700 ~ 790 MHz 24 ~ 27 dB @ 820 ~ 900 MHz 20 ~ 23 dB @ 1701 ~ 2100 MHz 20 ~ 23 dB @ 2300 ~ 2700 MHz
Isolation in BW	40 dB @ 700 ~ 790 MHz 40 dB @ 820 ~ 900 MHz 35 dB @ 1701 ~ 2100 MHz 35 dB @ 2300 ~ 2700 MHz
VSWR	1.45 max.
Impedance	50 Ω
Moisture sensitivity levels	LEVEL 1 (Refer to : IPC/JEDEC J-STD-020)

Operating & Storage Condition (Component)

Operation Temperature Range: -40°C ~ +85°C

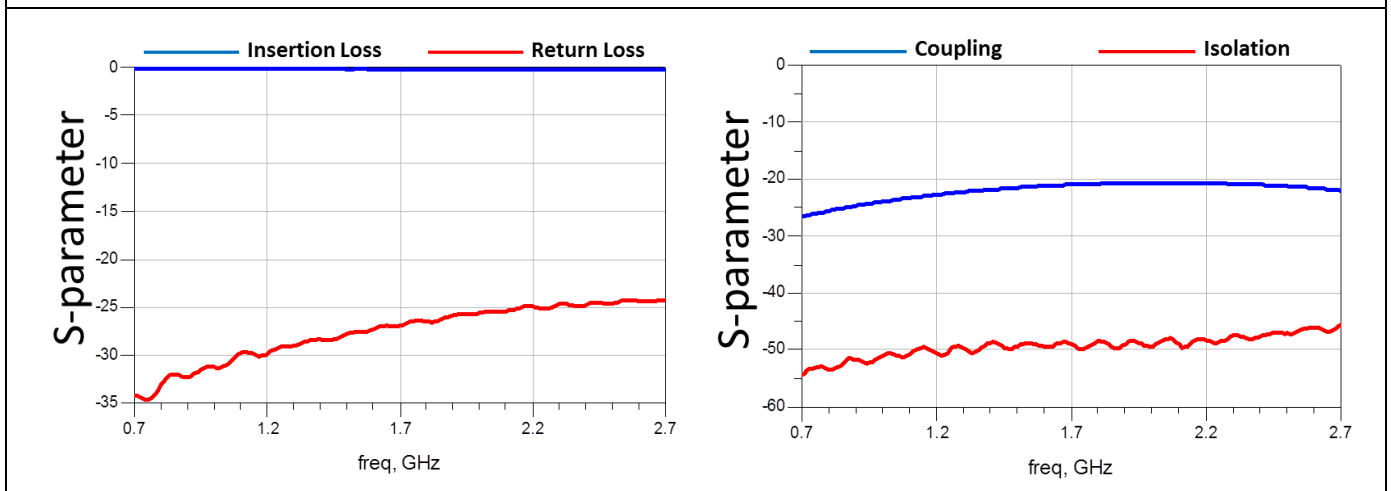
Storage Temperature Range: -40°C ~ +85°C

Storage Condition before Soldering (Included packaging material)

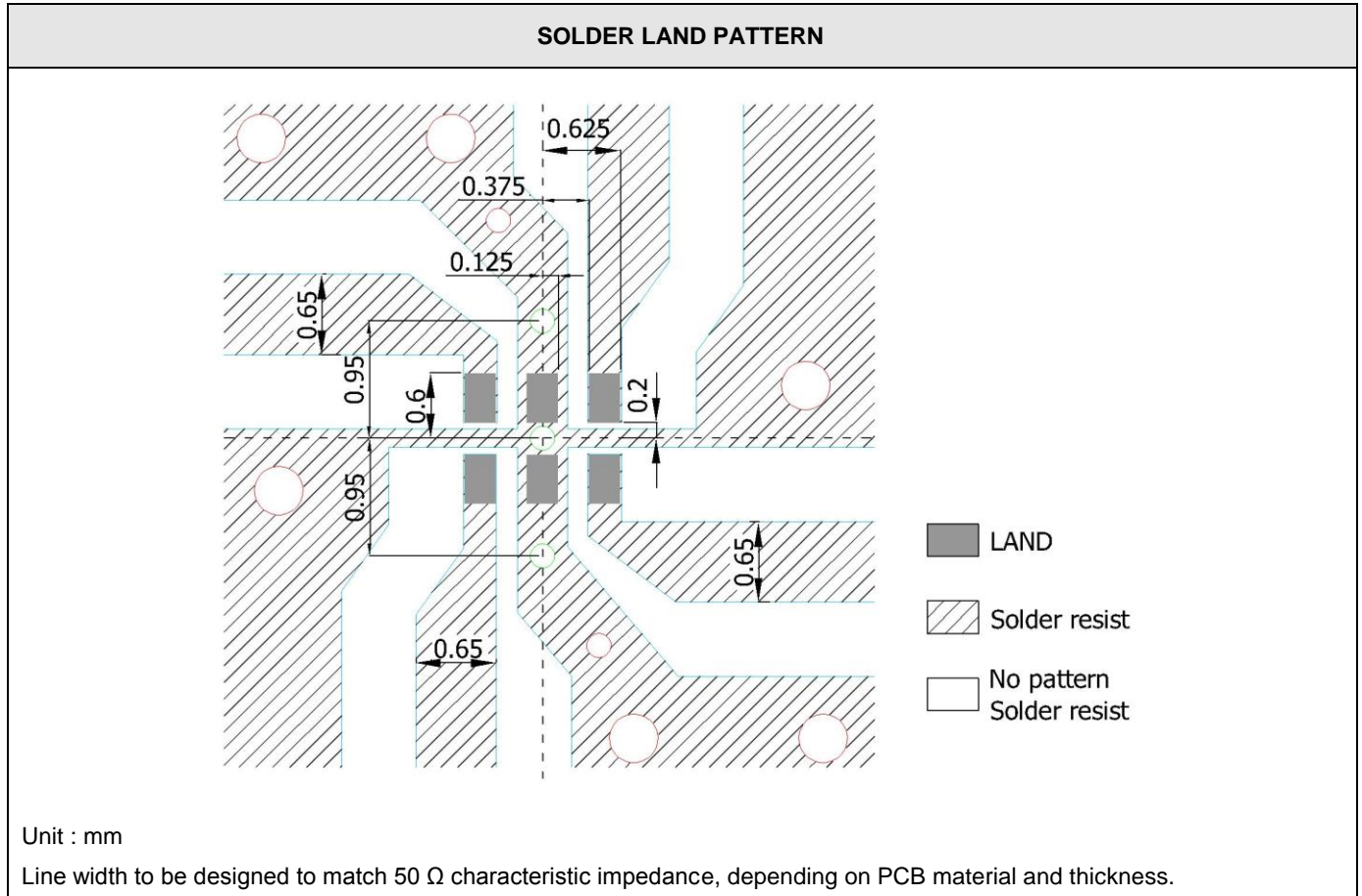
Storage Temperature Range: +5 ~ +40 °C

Humidity: 30 to 70% relative humidity

Typical Electrical Chart



SOLDER LAND PATTERN



RELIABILITY TEST

Test item	Test condition / Test method	Specification
Solderability JIS C 0050-4.6 JESD22-B102D	*Solder bath temperature : $235 \pm 5^{\circ}\text{C}$ *Immersion time : 2 ± 0.5 sec Solder : Sn3Ag0.5Cu for lead-free	At least 95% of a surface of each terminal electrode must be covered by fresh solder.
Leaching (Resistance to dissolution of metallization) IEC 60068-2-58	*Solder bath temperature : $260 \pm 5^{\circ}\text{C}$ *Leaching immersion time : 30 ± 0.5 sec Solder : SN63A	Loss of metallization on the edges of each electrode shall not exceed 25%.
Resistance to soldering heat JIS C 0050-5.4	*Preheating temperature : $120\sim 150^{\circ}\text{C}$, 1 minute. *Solder temperature : $270\pm 5^{\circ}\text{C}$ *Immersion time : 10 ± 1 sec Solder : Sn3Ag0.5Cu for lead-free Measurement to be made after keeping at room temperature for 24 ± 2 hrs	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within $-40\sim 85^{\circ}\text{C}$. Loss of metallization on the edges of each electrode shall not exceed 25%.
Drop Test JIS C 0044 Customer's specification.	*Height : 75 cm *Test Surface : Rigid surface of concrete or steel. *Times : 6 surfaces for each units ; 2 times for each side.	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within $-40\sim 85^{\circ}\text{C}$.
Vibration JIS C 0040	*Frequency : 10Hz~55Hz~10Hz(1min) *Total amplitude : 1.5mm *Test times : 6hrs.(Two hrs each in three mutually perpendicular directions)	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within $-40\sim 85^{\circ}\text{C}$.
Adhesive Strength of Termination JIS C 0051- 7.4.3	*Pressurizing force : 5N(≤ 0603) ; 10N(>0603) *Test time : 10 ± 1 sec	No remarkable damage or removal of the termination.
Bending test JIS C 0051- 7.4.1	The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 1mm/s and then pressure shall be maintained for 5 ± 1 sec. Measurement to be made after keeping at room temperature for 24 ± 2 hours	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within $-40\sim 85^{\circ}\text{C}$.

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<p>Temperature cycle JIS C 0025</p>	<p>1. 30±3 minutes at -40°C±3°C, 2. 10~15 minutes at room temperature, 3. 30±3 minutes at +85°C±3°C, 4. 10~15 minutes at room temperature, Total 100 continuous cycles Measurement to be made after keeping at room temperature for 24±2 hrs</p>	<p>No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40 ~ 85°C.</p>
<p>High temperature JIS C 0021</p>	<p>*Temperature : 85°C±2°C *Test duration : 1000+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs</p>	<p>No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40 ~ 85°C.</p>
<p>Humidity (steady conditions) JIS C 0022</p>	<p>*Humidity : 90% to 95% R.H. *Temperature : 40±2°C *Time : 1000+24/-0 hrs. Measurement to be made after keeping at room temperature for 24±2 hrs ※ 500hrs measuring the first data then 1000hrs data</p>	<p>No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40 ~ 85°C.</p>
<p>Low temperature JIS C 0020</p>	<p>*Temperature : -40°C±2°C *Test duration : 1000+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs</p>	<p>No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -40 ~ 85°C.</p>

SOLDERING CONDITION

Typical examples of soldering processes that provide reliable joints without any damage are given in Fig 2,

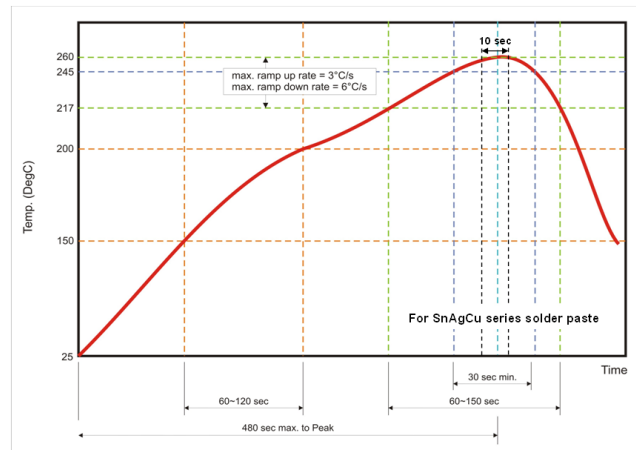


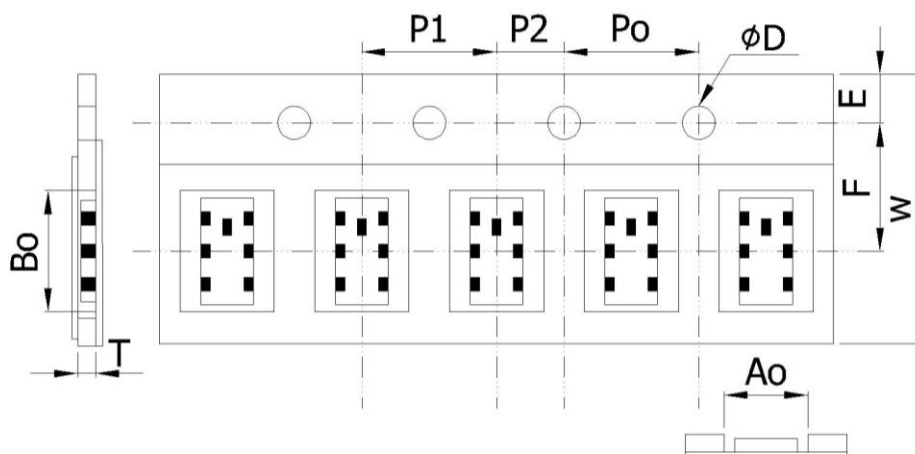
Fig 2. Infrared soldering profile

ORDERING CODE

RF	CPL	160807	0	P	M9T16
Walsin RF device	Product Code: Coupler	Dimension code Per 2 digits of Length, Width, Thickness : e.g. : 160807= Length 16, Width 08, Thickness 07	Unit of dimension 0 : 0.1 mm 1 : 1.0 mm	Application P: GSM850/ GSM 900/ DCS 1800 / PCS 1900 Quad Band+UMTS/WCDM A 2100MHz	Specification Design code

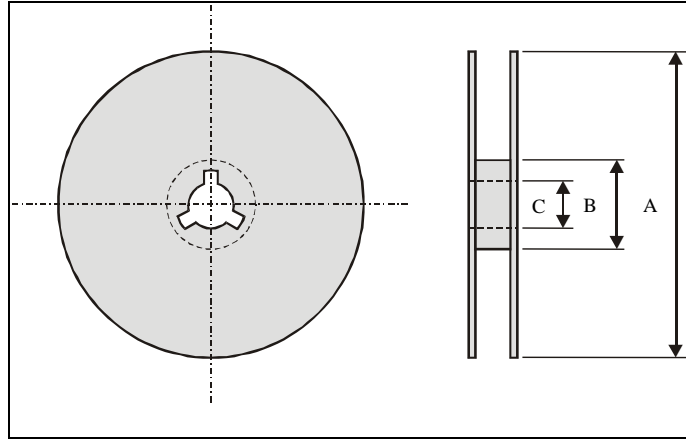
Minimum Ordering Quantity: 4000 pcs per reel.

PACKAGING



Paper Tape specifications (unit :mm)

Index	Ao	Bo	ϕD	T	W
Dimension (mm)	0.975 ± 0.10	1.76 ± 0.10	$1.55 + 0.05$	0.75 ± 0.10	8.0 ± 0.10
Index	E	F	Po	P1	P2
Dimension (mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05

Reel dimensions

Index	A	B	C
Dimension (mm)	Φ178.0	Φ60.0	Φ13.0

Taping Quantity:4000 pieces per 7" reel

CAUTION OF HANDLING**Limitation of Applications**

Please contact us before using our products for the applications listed below which require especially high reliability for the prevention of defects, which might directly cause damage to the third party's life, body or property.

- (1) Aircraft equipment
- (2) Aerospace equipment
- (3) Undersea equipment
- (4) Medical equipment
- (5) Disaster prevention / crime prevention equipment
- (6) Traffic signal equipment
- (7) Transportation equipment (vehicles, trains, ships, etc.)
- (8) Applications of similar complexity and /or reliability requirements to the applications listed in the above.

Storage condition

- (1) Products should be used in 6 months from the day of WAL SIN outgoing inspection, which can be confirmed.
- (2) Storage environment condition.
 - Products should be storage in the warehouse on the following conditions.
 - Temperature : +5 to +40°C
 - Humidity : 30 to 70% relative humidity
 - Don't keep products in corrosive gases such as sulfur. Chlorine gas or acid or it may cause oxidization of electrode, resulting in poor solderability.
 - Products should be storage on the palette for the prevention of the influence from humidity, dust and son on.
 - Products should be storage in the warehouse without heat shock, vibration, direct sunlight and so on.
 - Products should be storage under the airtight packaged condition.

单击下面可查看定价，库存，交付和生命周期等信息

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