APPROVAL SHEET

AMLPF Series – 1608(0603)- RoHS Compliance

MULTILAYER CERAMIC LOW PASS FILTER

Halogens Free Product

LTE B40/B41 Band RF Application

Automotive
Qualified to AEC-Q200

P/N: AMLPF16082G5WM0T29

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

FEATURES

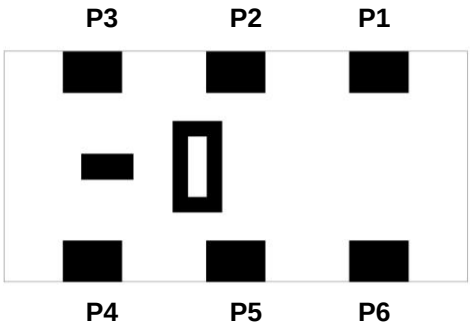
1. Miniature footprint: 1.6X 0.8 X 0.6 mm^3
2. Low Profile Thickness
3. Low Insertion loss
4. High Rejection Rate
5. High attenuation on 2^{nd} harmonic suppressed
6. LTCC process

APPLICATIONS

1. LTE、B40/B41 band RF applications
2. Bluetooth, Wireless LAN 802.11b/g, HomeRF

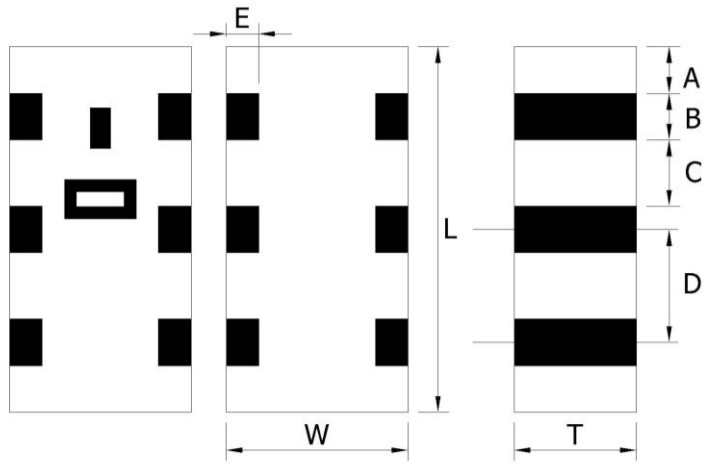
CONSTRUCTION

Top view



PIN	Definition	PIN	Definition
P1	GND	**P4**	GND
P2	IN	**P5**	OUT
P3	GND	**P6**	GND

DIMENSIONS

Figure	Symbol	Dimension (mm)
	L	1.60 ± 0.10
	W	0.80 ± 0.10
	T	0.60 ± 0.10
	A	0.175± 0.10
	B	0.25 ± 0.10
	C	0.25 ± 0.10
	D	0.50 ± 0.10
	E	0.15 ± 0.10

ELECTRICAL CHARACTERISTICS

AMLPF16082G5WM0T29	Specification
Frequency range	2300~2690 MHz
Insertion Loss	0.9 dB max. (typ. 0.4 dB) at +25°C 1.2 dB max. at -55°C~ +125 °C
Attenuation	25dB min. @ 4600~5400 MHz 23dB min. @ 6900~8070 MHz
VSWR	2 max.
Impedance	50 Ω
Moisture sensitivity levels	MSL is LEVEL 1 (Refer to : IPC/JEDEC J-STD-020)

Operating & Storage Condition (Component)

Operation Temperature Range: -55°C ~ +125°C

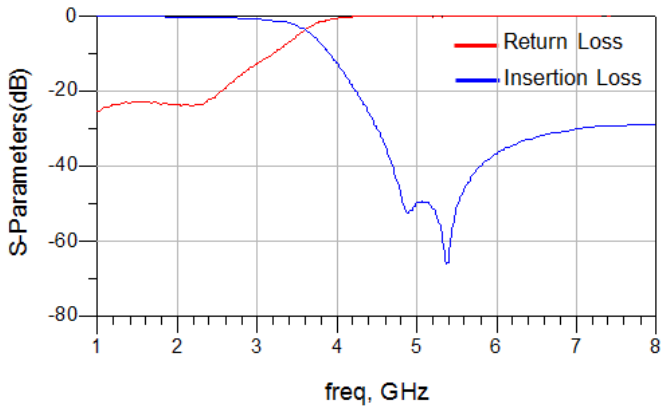
Storage Temperature Range: -55°C ~ +125°C

Storage Condition before Soldering (Included packaging material)

Storage Temperature Range: +5 ~ +40 ℃

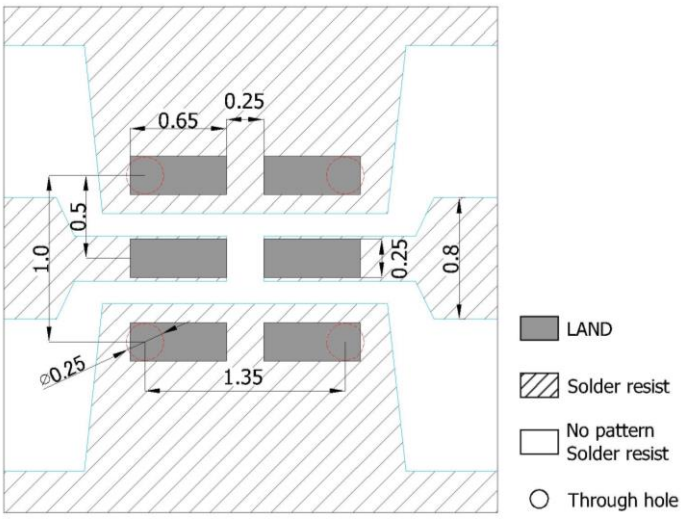
Humidity: 30 to 70% relative humidity

Typical Electrical Chart



LAND PATTERN

Figure



Unit : mm

Line width to be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

RELIABILITY TEST

TEST	PROCEDURE / TEST METHOD	REQUIREMENT
Resistance to soldering heat (R.S.H) **MIL-STD-202** **method 210**	Un-mounted chips completely immersed for 10±1second in a SAC solder bath at 270℃±5°C	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -55 ~ 125°C. Loss of metallization on the edges of each electrode shall not exceed 25
Solderability **J-STD-002**	* Condition A Un-mounted chips 4hrs / 155°C*dry then completely immersed for 5±0.5 sec in solder bath at 235±5°C. * Condition B Un-mounted chips steam 8 hrs then completely immersed for 10±1 sec. in solder bath at 260+0/-5°C.	All terminations shall exhibit a continuous solder coating free from defects from a minimum of 95% of the critical surface area of any individual termination.
Temperature cycling **JESD22** **method JA-104**	1000 cycles, -55℃ ~ +125℃, dwell time 30min	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -55 ~ 125°C.
Humidity MIL-STD-202 method 103	1000+48/-0 hours; 85°C, 85% RH	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -55 ~ 125°C.
High Temperature Exposure **MIL-STD-202** **method 108**	1000+48/-0 hours; without load in a temperature chamber controlled 125±3°C	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -55 ~ 125°C.
Mechanical Shock **MIL-STD-202** **method 213**	1/2 Sine Pulse / 100g Peak / Velocity 12.3ft/sec	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -55 ~ 125°C.
Board Flex **AEC-Q200-005**	RF component mounted on a 90mm glass epoxy resin PCB(FR4), bending once 2mm for 60sec	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -55 ~ 125°C.
Terminal strength **AEC-Q200-006**	Pressurizing force: 1.8Kg, Test time: 60±1sec. Only 0402 for 1.0kg/60sec	No remarkable damage or removal of the terminations
Vibration **MIL-STD-202** **method 204**	Test 5g's for 20min., 12 cycles each of 3 orientations	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -55 ~ 125°C.
ESD **AEC-Q200-002**	Test contact 1.0KV (0.5KV for 1005 only)	No mechanical damage. Electrical specification shall satisfy the descriptions in electrical characteristics under the operational temperature range within -55 ~ 125°C.

SOLDERING CONDITION

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

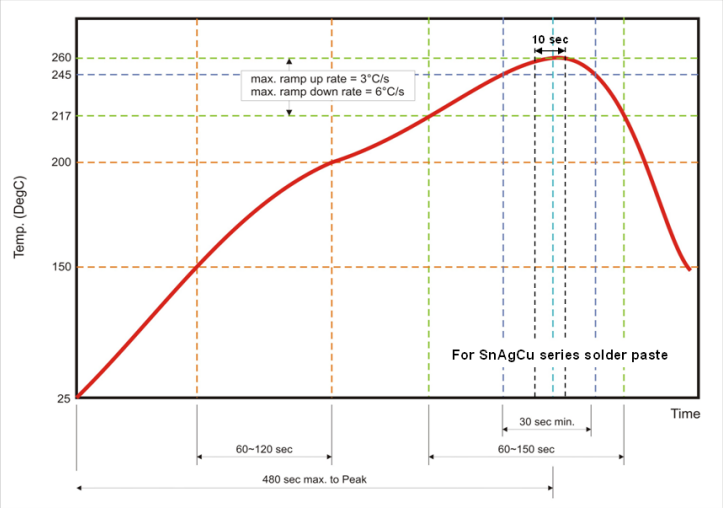


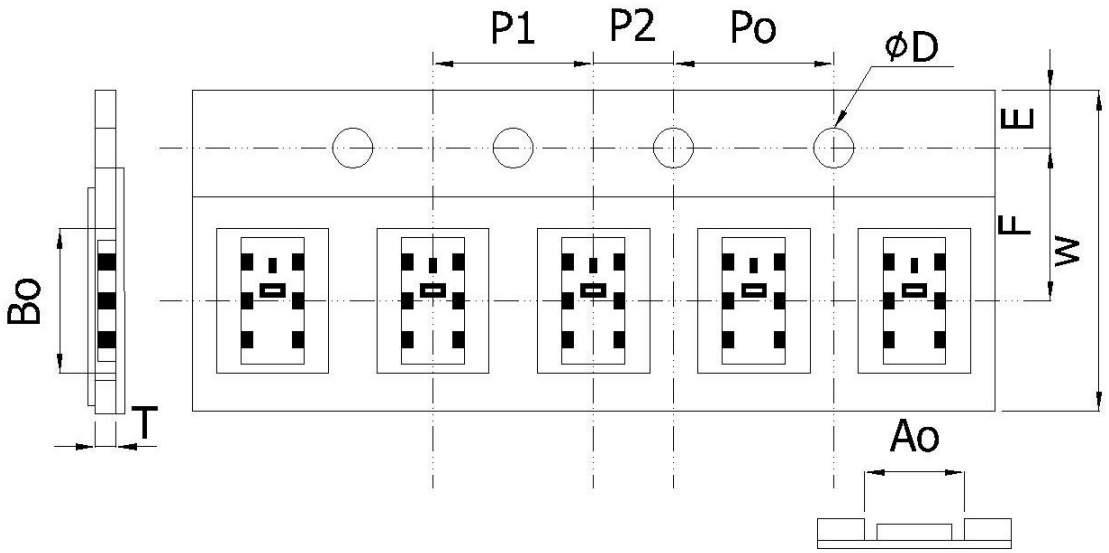
Fig 2. Infrared soldering profile

ORDERING CODE

AM	LPF	1608	2G5	WM0T29
Walsin Automotive device	**Product Code** LPF : Low Pass Filter	**Dimension code** Per 2 digits of Length, Width e.g:1608: L=1.6mm, W= 0.8mm,	**Central Frequency** 2G5: 2.5GHz	**Specification** Design Code

Minimum Ordering Quantity: 4000 pcs per reel.

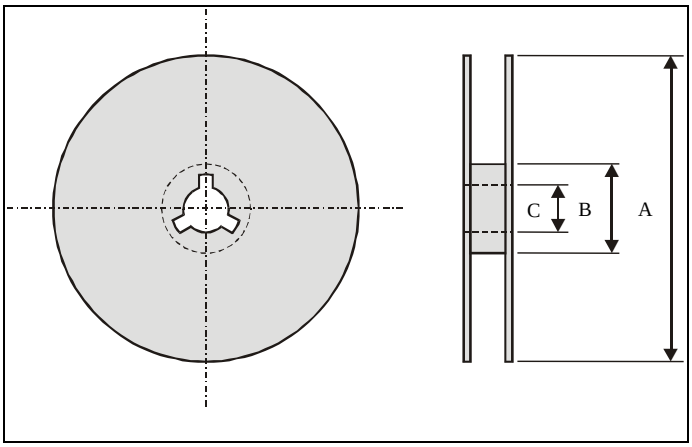
PACKAGING



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 WALSIN outgoing inspection.

(2) Storage environment condition.

- Products should be storage in the warehouse on the following conditions.
- Temperature : +5 to +40℃
- 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.