

APPROVAL SHEET

AMBLN 2012 (0805) Series – RoHS Compliance

MULTILAYER CERAMIC BALUN TRANSFORMER

Halogens Free Product

GSM 850/ GSM 900/ DCS1800/ PCS1900

Band RF Application

P/N: AMBLN2012090B1T

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

FEATURES

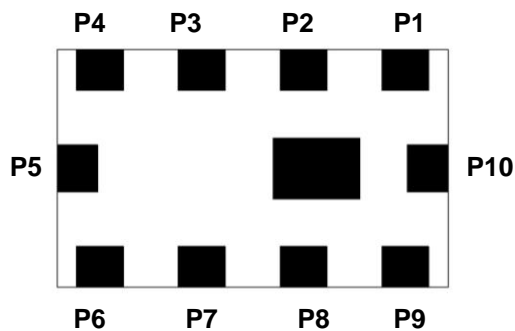
1. Miniature footprint: 2.0 X 1.2 X 0.9 mm³
2. Integrate 2 different working band devices into one package
3. Low Insertion Loss
4. Low in band Amplitude and Phase imbalance enable high performance wireless system operation
5. LTCC process
6. Second harmonic suppression
7. ISM band suppression

APPLICATIONS

1. GSM 850/ GSM 900/ DCS1800/ PCS1900 Band RF application.
2. Unbalance to balance conversion.

CONSTRUCTION

Top view



PIN	Connection	PIN	Connection
P1	Unbalance Port _LB	P6	Balance Port _HB
P2	GND	P7	Balance Port _HB
P3	GND	P8	Balance Port _LB
P4	Unbalance Port _HB	P9	Balance Port _LB
P5	GND	P10	GND

DIMENSIONS

Figure	Symbol	Dimension (mm)
Top view	L	2.00 ± 0.10
	W	1.25 ± 0.10
Side view	T	0.95 ± 0.10
	A	0.125 ± 0.10
Bottom view	B	0.25 ± 0.10
	C	0.25 ± 0.10
Side view	D	0.50 ± 0.10
	E	0.475 ± 0.10
	F	0.30 ± 0.10
	G	0.20 ± 0.10
	H	0.20 ± 0.10

ELECTRICAL CHARACTERISTICS

AMBLN2012090B1T	Specification L-Band	Specification H-Band
Frequency range	869~960 MHz	1805~1990 MHz
Insertion Loss	1.3 dB max @ 25oC 1.6 dB max @ -55°C ~ +125°C	1.7 dB max @ 25oC 2.0 dB max @ -55°C ~ +125°C
Attenuation	10 dB min. @ 1738 ~ 1920MHz 20 dB min. @ 2400 ~ 2500MHz 20 dB min. @ 2607 ~ 2880MHz	10 dB min. @ 2400 ~ 2500MHz 15 dB min. @ 3610 ~ 3980MHz 20 dB min. @ 5415 ~ 5970MHz
Phase Difference	180° ± 20°	180° ± 20°
Amplitude balance	2.5 dB max.	2.5 dB max.
VSWR	2 max.	2 max.
Impedance (Unbalanced)	50 Ω	50 Ω
Impedance (Balanced)	200 Ω	200 Ω
Moisture sensitivity levels	LEVEL 1 (Refer to : IPC/JEDEC J-STD-020)	

Operating & Storage Condition (Component)

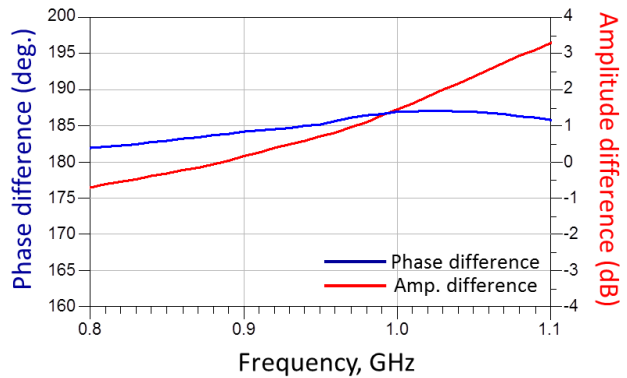
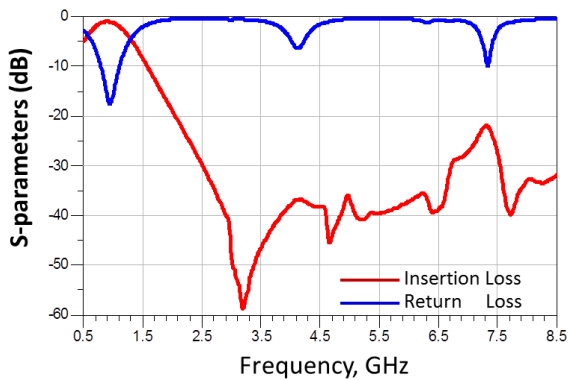
Operation Temperature Range: -55°C ~ +125°C
Storage Temperature Range: -55°C ~ +125°C

Storage Condition before Soldering (Included packaging material)

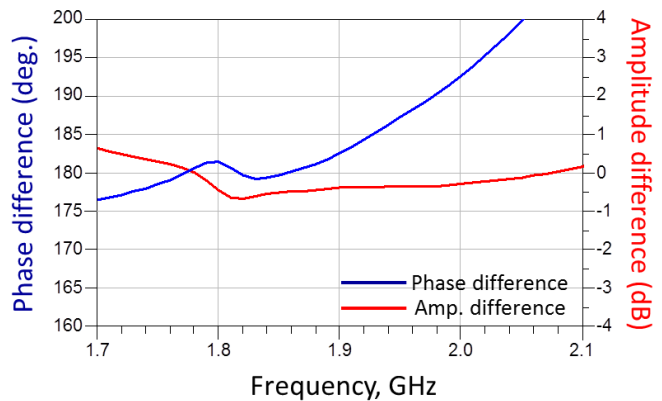
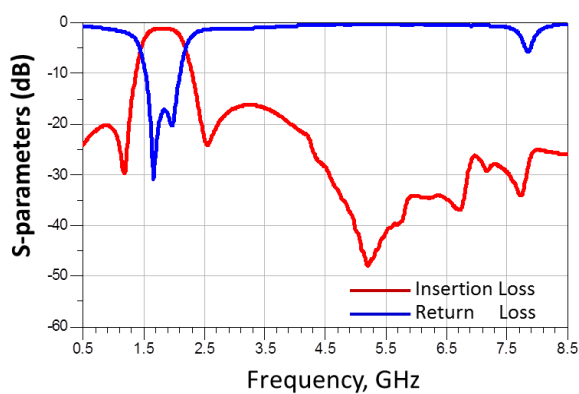
Storage Temperature Range: +5 ~ +40 °C
Humidity: 30 to 70% relative humidity

Typical Electrical Chart

Low Band :

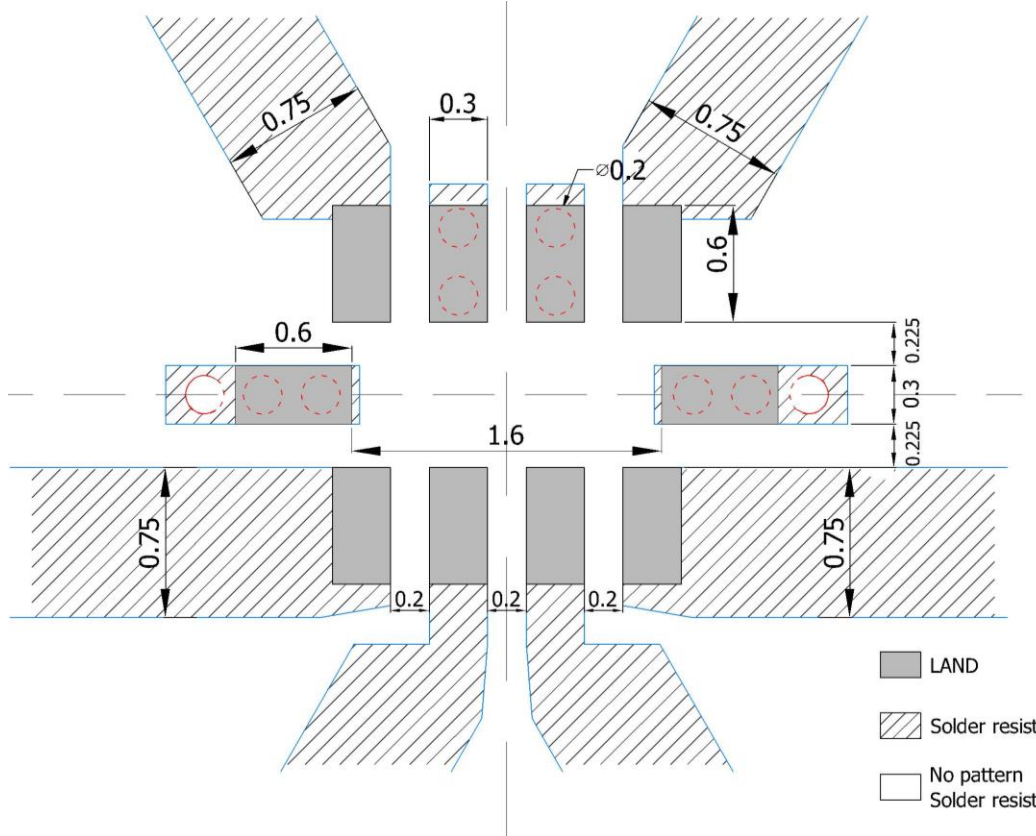


High Band :



SOLDER LAND PATTERN

Figure



Unit : mm

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

Approval sheet

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°C±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	a)4hrs / 155°C *dry then solder dipping 235 °C/5sec b)Steam 8 hrs then 215°C / 5sec solder dipping c)Steam 8 hrs then 260°C / 7sec solder dipping	95% coverage min., good tinning and no visible damage
Temperature cycling JESD22 method JA-104	1000 cycles, -55°C ~ +125°C, 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,

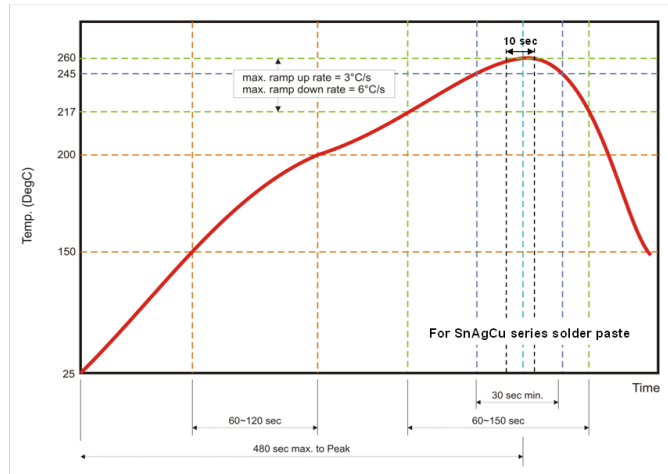


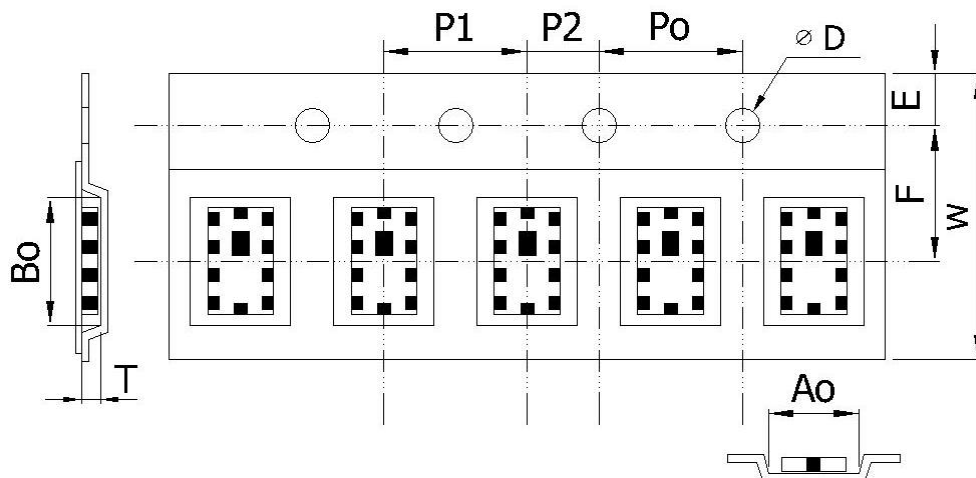
Fig 2. Infrared soldering profile

ORDERING CODE

AM	BLN	201209	0	B	1	T
Walsin Automotive device	Product Code BLN : BALUN	Dimension code Per 2 digits of Length, Width, Thickness: e.g. : 201209 = Length 20, Width 12, Thickness 09	Unit of dimension 0: 0.1 mm 1: 1.0 mm	Application B: GSM850/ GSM900/ DCS1800/ PCS1900 quad band S: GSM900/ DCS1800/ PCS1900 triple band	Specification Design Code	Packing T : Reeled

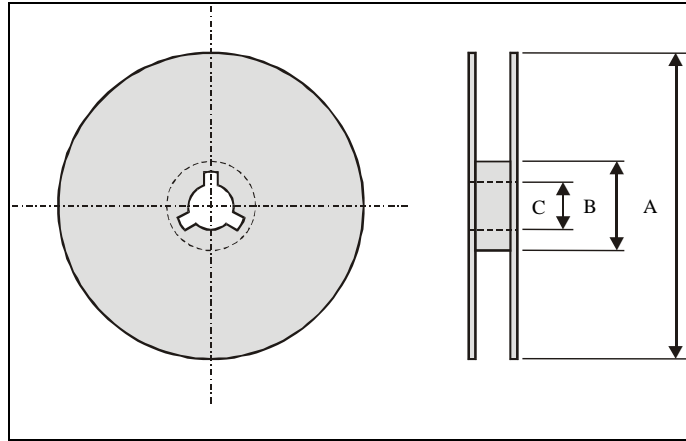
Minimum Ordering Quantity: 2000 pcs per reel.

PACKAGING



Plastic Tape specifications (unit :mm)

Index	Ao	Bo	φD	T	W
Dimension (mm)	1.30 ± 0.10	2.25 ± 0.10	1.55 ± 0.10	1.10 ± 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 ± 0.10

Reel dimensions

Index	A	B	C
Dimension (mm)	Φ178	Φ60.0	Φ13.5

Taping Quantity:2000 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°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.