

GENERAL DESCRIPTION

The SGMFB2450A1 is an integrated-passive-device (IPD) FEM which applied in the 2.4GHz to 2.5GHz ISM band. This device integrates fully matched TX Balun, TX filter, RX Balun and matching circuits inside.

The SGMFB2450A1 is available in a Green WLCSP-1.65×1.65-16B package.

APPLICATIONS

Wireless Routers
Personal Computer Systems and PC Cards
Access Points
Internet of Things

FEATURES

- **TX Insertion Loss: 2.4dB**
- **RX Insertion Loss: 0.9dB**
- **Port Impedance (Unbalance): 50Ω**
- **Port Impedance (Balance): 100Ω**
- **Phase Balance:**
 - ♦ **TX $180^\circ \pm 6^\circ$**
 - ♦ **RX $177^\circ \pm 8^\circ$**
- **Advanced IPD Process**
- **Available in a Green WLCSP-1.65×1.65-16B Package**

BLOCK DIAGRAM

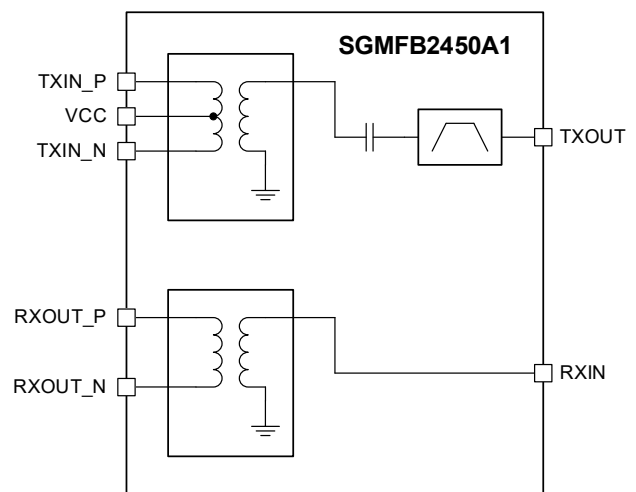


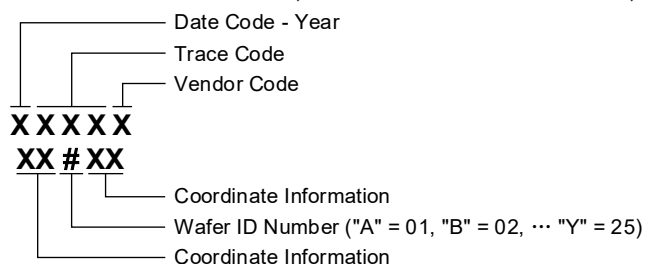
Figure 1. SGMFB2450A1 Block Diagram

PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGMFB2450A1	WLCSP-1.65×1.65-16B	-40°C to +105°C	SGMFB2450A1GG/TR	0HV XXXXXX XX#XX	Tape and Reel, 3000

MARKING INFORMATION

NOTE: XXXXX = Date Code, Trace Code and Vendor Code, XX#XX = Coordinate Information and Wafer ID Number.



Green (RoHS & HSF): SG Micro Corp defines "Green" to mean Pb-Free (RoHS compatible) and free of halogen substances. If you have additional comments or questions, please contact your SGMICRO representative directly.

ABSOLUTE MAXIMUM RATINGS

TX Input Power	30dBm
RX Input Power	30dBm
V _{CC}	6V
Storage Temperature Range	-55°C to +150°C
Lead Temperature (Soldering, 10s)	+260°C
ESD Susceptibility ^{(1) (2)}	
HBM	±300V
CDM	±2000V

NOTES:

1. For human body model (HBM), all pins comply with ANSI/ESDA/JEDEC JS-001 specifications.
2. For charged device model (CDM), all pins comply with ANSI/ESDA/JEDEC JS-002 specifications.

RECOMMENDED OPERATING CONDITIONS

Operating Temperature Range	-40°C to +105°C
Supply Voltage	
V _{CC}	Floating or 0V to 5V

OVERSTRESS CAUTION

Stresses beyond those listed in Absolute Maximum Ratings may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect reliability. Functional operation of the device at any conditions beyond those indicated in the Recommended Operating Conditions section is not implied.

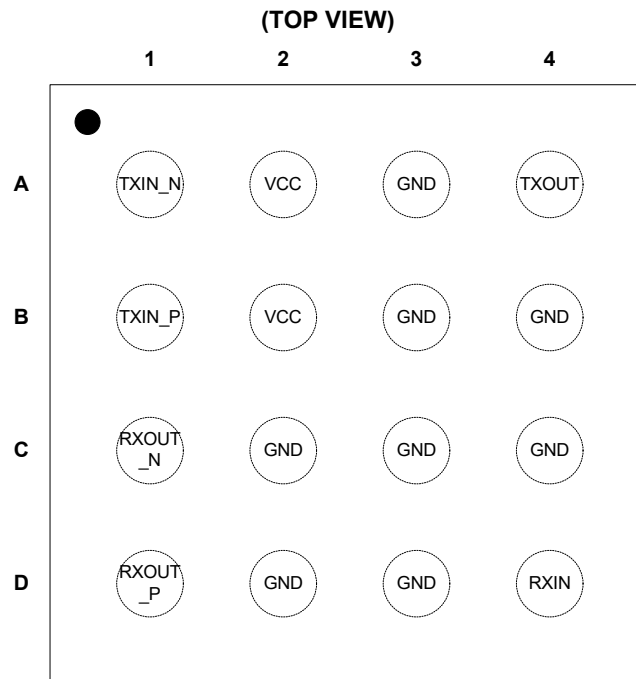
ESD SENSITIVITY CAUTION

This integrated circuit can be damaged if ESD protections are not considered carefully. SGMICRO recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because even small parametric changes could cause the device not to meet the published specifications.

DISCLAIMER

SG Micro Corp reserves the right to make any change in circuit design, or specifications without prior notice.

PIN CONFIGURATION



WLCSP-1.65×1.65-16B

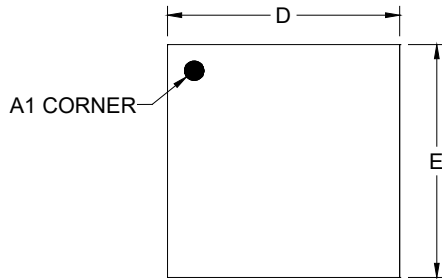
PIN DESCRIPTION

PIN	NAME	FUNCTION
A1	TXIN_N	Negative Transmit Input Port.
B1	TXIN_P	Positive Transmit Input Port.
C1	RXOUT_N	Negative Receive Output Port.
D1	RXOUT_P	Positive Receive Output Port.
A4	TXOUT	Transmit Output Port.
D4	RXIN	Receive Input Port.
A2, B2	VCC	Power Supply.
A3, B3, B4, C2, C3, C4, D2, D3	GND	Ground.

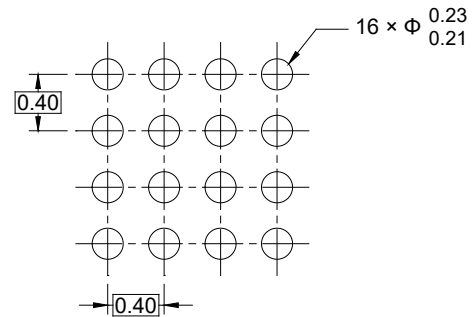
PACKAGE INFORMATION

PACKAGE OUTLINE DIMENSIONS

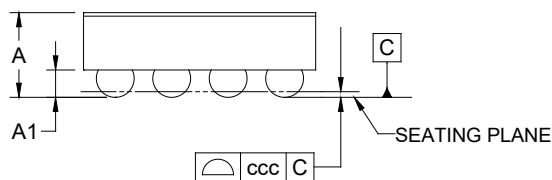
WLCSP-1.65×1.65-16B



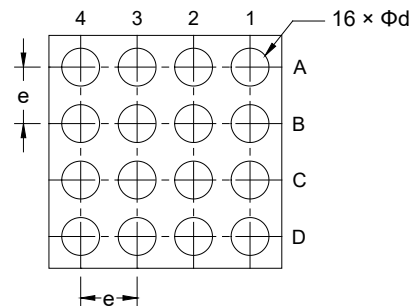
TOP VIEW



RECOMMENDED LAND PATTERN (Unit: mm)



SIDE VIEW



BOTTOM VIEW

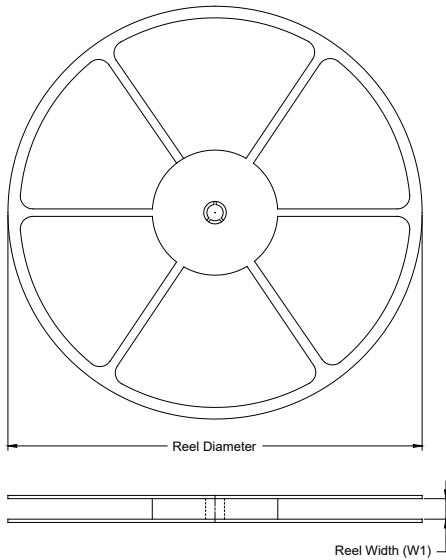
Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	-	-	0.645
A1	0.174	-	0.214
D	1.620	-	1.680
E	1.620	-	1.680
d	0.238	-	0.298
e	0.400 BSC		
ccc	0.050		

NOTE: This drawing is subject to change without notice.

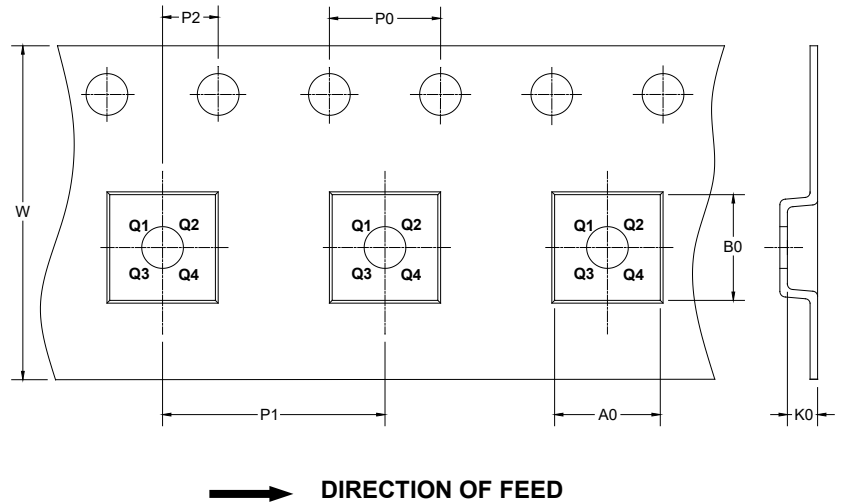
PACKAGE INFORMATION

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

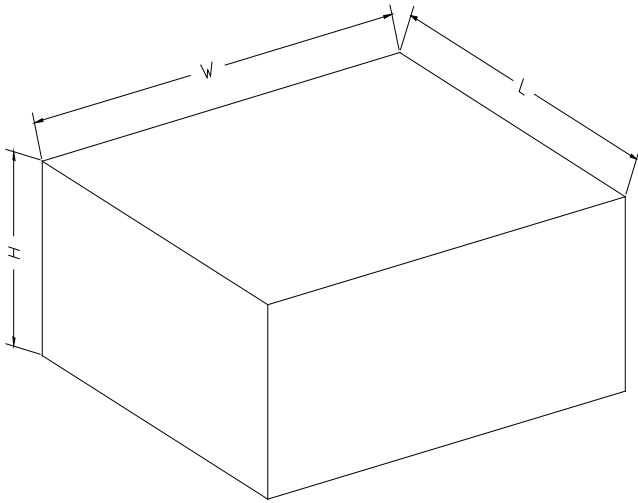
KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
WLCSP-1.65×1.65-16B	7"	9.5	1.81	1.81	0.76	4.0	4.0	2.0	8.0	Q1

DD0001

PACKAGE INFORMATION

CARTON BOX DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF CARTON BOX

Reel Type	Length (mm)	Width (mm)	Height (mm)	Pizza/Carton
7" (Option)	368	227	224	8
7"	442	410	224	18

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