Applications

- 802.11n, MIMO solutions
- IEEE802.11b DSSS WLAN
- IEEE802.11g OFDM WLAN
- IEEE802.11a OFDM WLAN
- Access Points, PCMCIA, PC cards

Features

- Integrated 2.4 GHz PA, 5 GHz PA, TX Filter, T/R switches and diplexers
- All RF ports matched to 50 Ω
- Integrated Power Detector for each TX Chain
- 19 dBm O/P Power, 802.11b, 11 Mbits, ACPR = 32 dBc
- 19 dBm @ 3.0 % EVM, 802.11g, 54 Mbits
- 16 dBm @ 3.0 % EVM, 802.11a, 54 Mbits
- Single supply voltage: 3.3 V ± 10 %
- Lead free and RoHS compliant
- Thin lead free plated package, 10 mm x 14 mm x 1.1 mm, MSL 3

Ordering Information

Part No.	Package	Remark
SE2546A30	48 pin LGA	Samples
SE2546A30-T	48 pin LGA	Tray
SE2546A30-EK1	N/A	Evaluation kit

Product Description

The SE2546A30 is a complete 802.11n WLAN RF front-end module providing all the functionality of the power amplifiers, power detector, T/R switch, diplexers and associated matching. The SE2546A30 provides a complete 2.4 GHz and 5 GHz WLAN Multiple Input, Multiple Output (MIMO) RF solution from the output of the transceiver to the antennas in an ultra compact form factor. The SE2546A30 also includes 3 antenna ports.

Designed for ease of use, all RF ports are matched to 50 Ω to simplify PCB layout and the interface to the transceiver RFIC. The SE2546A30 also includes a transmitter power detector for each band and transmit chain with 20 dB of dynamic range for each transmit chain. Each transmit chain has a separate digital enable control for transmitter power ramp on/off control. The power ramp rise/fall time is less than 0.5 µsec.

The device also provides a notch filter from 3.2-3.3 GHz and 3.2-3.9 GHz prior to the input of each 2.4 GHz and 5 GHz power amplifiers, respectively.

Functional Block Diagram

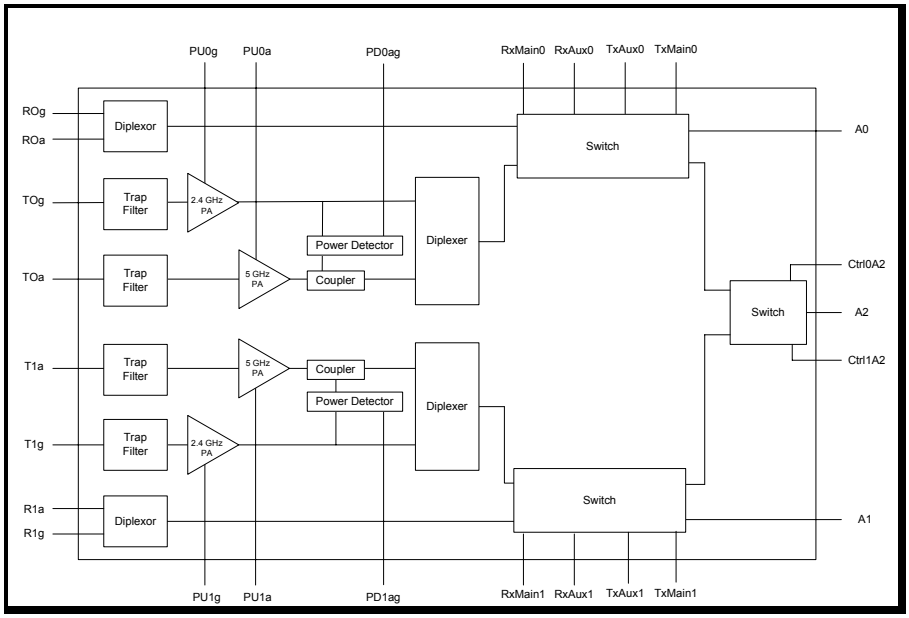

Figure 1: Functional Block Diagram

Pin Out Diagram

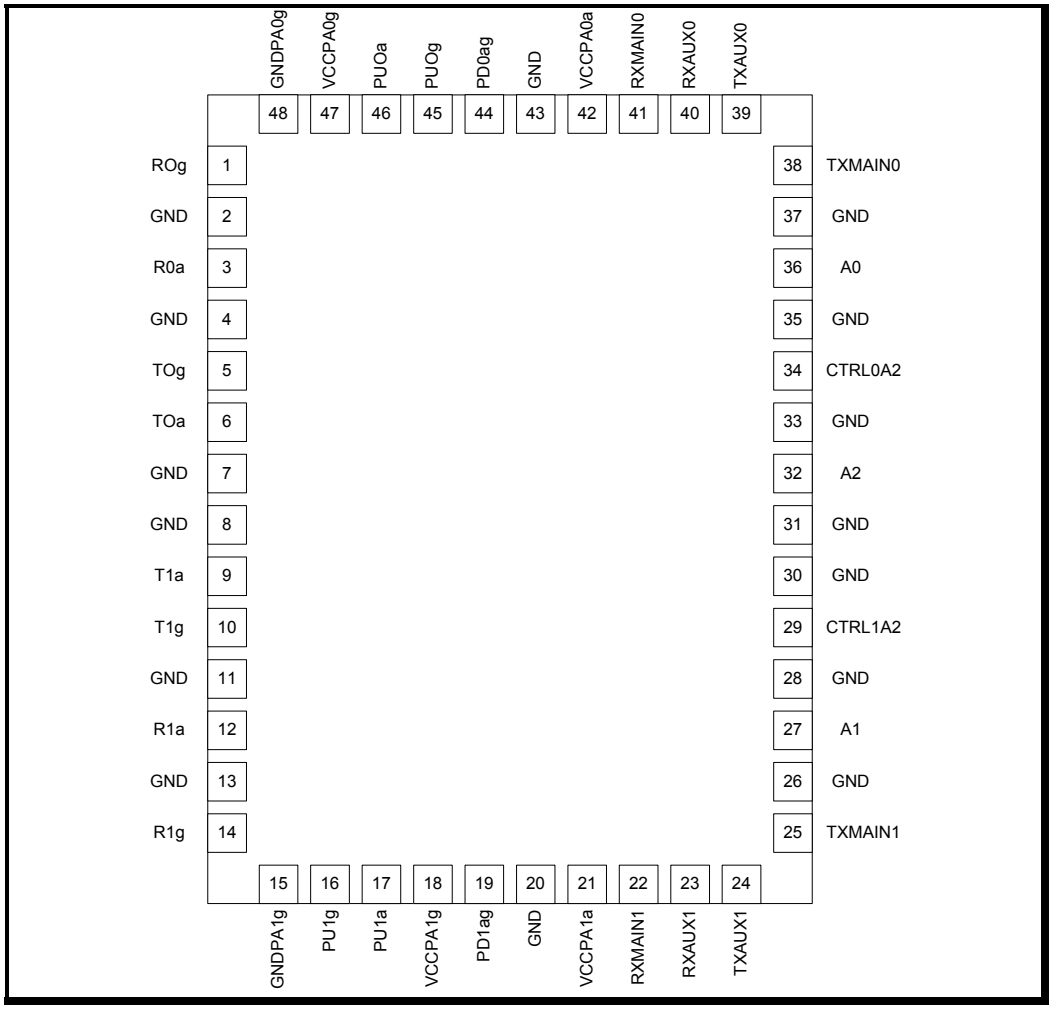

Figure 2: SE2546A30 Pin Out (Top View Through Package)

Pin Out Description

Pin No.	Name	Description
1	R0g	2.4 GHz Receive Output, Channel 0
2	GND	Ground
3	R0a	5 GHz Receive Output, Channel 0
4	GND	Ground
5	T0g	2.4 GHz Transmit Input, Channel 0
6	T0a	5 GHz Transmit Input, Channel 0
7,8	GND	Ground
9	T1a	5 GHz Transmit Input, Channel 1
10	T1g	2.4 GHz Transmit Input, Channel 1
11	GND	Ground

Pin No.	Name	Description
12	R1a	5 GHz Receive Output, Channel 1
13	GND	Ground
14	R1g	2.4 GHz Receive Output, Channel 1
15	GNDPA1g	Ground
16	PU1g	2.4 GHz PA Enable, Channel 1
17	PU1a	5 GHz PA Enable, Channel 1
18	VCCPA1g	Supply Voltage (Note 1)
19	PD1ag	Dual Band Power Detector, Channel 1
20	GND	Ground
21	VCCPA1a	Supply Voltage (Note 1)
22	RXMAIN1	Channel 1, Switch Control Input
23	RXAUX1	Channel 1, Switch Control Input
24	TXAUX1	Channel 1, Switch Control Input
25	TXMAIN1	Channel 1, Switch Control Input
26	GND	Ground
27	A1	Antenna, Channel 1
28	GND	Ground
29	CTRL1A2	Channel 2, Switch Control Input
30	GND	Ground
31	GND	Ground
32	A2	Antenna, Channel 2
33	GND	Ground
34	CTRL0A2	Channel 2, Switch Control Input
35	GND	Ground
36	A0	Antenna, Channel 0
37	GND	Ground
38	TXMAIN0	Channel 0, Switch Control Input
39	TXAUX0	Channel 0, Switch Control Input
40	RXAUX0	Channel 0, Switch Control Input
41	RXMAIN0	Channel 0, Switch Control Input
42	VCCPA0a	Supply Voltage (Note 1)
43	GND	Ground
44	PD0ag	Dual Band Power Detector, Channel 0
45	PU0g	2.4 GHz PA Enable, Channel 0
46	PU0a	5 GHz PA Enable, Channel 0
47	VCCPA0g	Supply Voltage (Note 1)
48	GNDPA0g	Ground

Table 1: Pin-Out Diagram

Note 1: All VCC pins need to be always supplied with the supply voltage

Absolute Maximum Ratings

These are stress ratings only. Exposure to stresses beyond these maximum ratings may cause permanent damage to, or affect the reliability of the device. Avoid operating the device outside the recommended operating conditions defined below. This device is ESD sensitive. Handling and assembly of this device should be at ESD protected workstations.

Symbol	Definition	Min.	Max.	Unit
V_{CC}	VCCPA0g, VCCPA0a, VCCPA1g, VCCPA1a	-0.3	4.0	V
PU	PU0a, PU0g, PU1a, PU1g	-0.3	4.0	V
TX_{RF}	T0a, T0g, T1a, T1g	-	4.0	dBm
T_A	Ambient Temperature	0	85	°C
T_{STG}	Storage Temperature Range	-40	150	°C

Table 2: Absolute Maximum Values

Recommended Operating Conditions

Symbol	Parameter	Min.	Typ.	Max.	Unit
V_{CC}	Supply Voltage	3.0	3.3	3.6	V
T_A	Ambient Temperature	0	25	85	°C

Table 3: Recommended Operating Conditions

DC Electrical Characteristics

Conditions: V_{CC} = 3.3 V, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), all unused ports terminated with 50 ohms, powers measured at antenna A0 OR A1, unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_{CC-G}	Total 802.11g Transmit Supply Current for Channel 0 or Channel 1	P_{OUT} = 19 dBm, 54 Mbps OFDM signal, 64QAM PU0g or PU01g = 3.3 V PU0a and PU1a = 0 V	-	240	-	mA
I_{CC-B}	Total 802.11b Transmit Supply Current for Channel 0 or Channel 1	P_{OUT} = 19 dBm, 11 Mbps CCK signal, BT = 0.45 PU0g or PU01g = 3.3 V PU0a and PU1a = 0 V	-	240	-	mA
I_{CC-A}	Total 802.11a Transmit Supply Current for Channel 0 or Channel 1	P_{OUT} = 16 dBm, 54 Mbps OFDM signal, 64QAM PU0a or PU01a = 3.3 V PU0g and PU1g = 0 V	-	200	-	mA
I_{CC_OFF}	Total Supply Current	No RF, PU0g = PU0a = PU1g = Pu1a = 0 V, TX0ag = RX0ag = TX1ag = RX1ag = 0 V	-	2	20	µA

Table 4: DC Electrical Characteristics

Logic Characteristics

Conditions: V_{CC} = 3.3 V, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), all unused ports terminated with 50 ohms, unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{ENH}	Logic High Voltage for PU0g, PU0a, PU1g, PU1a (Module On)	-	2.0	-	V_{CC}	V
V_{ENL}	Logic Low Voltage PU0g, PU0a, PU1g, PU1a (Module Off)	-	0	-	0.5	V
I_{ENH}	Input Current Logic High Voltage (PU0g, PU0a, PU1g, PU1a)	-	-	100	200	µA
I_{ENL}	Input Current Logic Low Voltage (PU0g, PU0a, PU1g, PU1a)	-	-	0.2	-	µA

Table 5: Logic Characteristics

Switch Characteristics

Conditions: V_{CC} = V_{EN} = 3.3 V, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), all unused ports terminated with 50 ohms, unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{CTL_ON}	Control Voltage (On State)	-	3.0	-	3.6	V
V_{CTL_OFF}	Control Voltage (OFF State)	-	0.0	-	0.2	V
SW_{ON}	Low Loss Switch Control Voltage	High State = V_{CTL_ON} - V_{CTL_OFF}	2.8	-	V_{CC}	V
SW_{OFF}	High Loss Switch Control Voltage	Low State = V_{CTL_OFF} - V_{CTL_OFF}	0	-	0.3	V
I_{CTL_ON}	Switch Control Bias Current (RF Applied)	On any switch control pin being driven high. RF Applied	-	-	100	µA
I_{CTL_ON}	Switch Control Bias Current (No RF)	On any switch control pin being driven high. No RF	-	-	30	µA
C_{CTL}	Control Input Capacitance	-	-	-	100	pF

Table 6: Switch Characteristics

Switch Control Logic Table

RXMAIN0	TXMAIN0	RXAUX0	TXAUX0	CTRL0A2	CTRL1A2	Loss[2]	Connection
SWON	SWOFF	SWOFF	SWOFF	-	-	RXgIL01 RXaIL01	A0 – R0g A0-R0a
SWOFF	SWOFF	**SWON**	SWOFF	**SWON**	SWOFF	RXgIL2 RXaIL2	A2 – R0g A2 – R0a
RXMAIN1	**TXMAIN1**	**RXAUX1**	**TXAUX1**	**CTRL0A2**	**CTRL1A2**	**Loss[2]**	**Connection**
SWON	SWOFF	SWOFF	SWOFF	-	-	RxgIL01 RXaIL01	A1 – R1g A1-R1a
SWOFF	SWOFF	**SWON**	SWOFF	SWOFF	**SWON**	RXgIL2 RXaIL2	A2 – R1g A2 – R1a

Table 7: Rx Mode

RXMAIN0	TXMAIN0	RXAUX0	TXAUX0	CTRL0A2	CTRL1A2	Loss[2]	Connection
SWOFF	**SWON**	SWOFF	SWOFF	-	-	S21	A0 – T0g A0-T0a
SWOFF	SWOFF	SWOFF	**SWON**	**SWON**	SWOFF	S21	A2 – T0g A2-T0a
RXMAIN1	**TXMAIN1**	**RXAUX1**	**TXAUX1**	**CTRL0A2**	**CTRL1A2**	**Loss[2]**	**Connection**
SWOFF	**SWON**	SWOFF	SWOFF	-	-	S21	A1 – T1g A1-T1a
SWOFF	SWOFF	SWOFF	**SWON**	**SWON**	SWOFF	S21	A2 – T0g A2-T0a

Table 8: Tx Mode

RXMAIN0	TXMAIN0	RXAUX0	TXAUX0	CTRL0A2	CTRL1A2	Loss[2]	Connection
SWOFF	**SWON**	SWOFF	SWOFF	-	-	$ISO\_RX\text{-}TX_{ON}$ $ISO\_RX\text{-}TX_{OFF}$	A0 – R0g A0 – R0a
SWOFF	SWOFF	SWOFF	**SWON**	SWOFF	**SWON**	$ISO\_RX\text{-}TX_{ON}$ $ISO\_RX\text{-}TX_{OFF}$	A2 – R0g A2 – R0a
RXMAIN1	**TXMAIN1**	**RXAUX1**	**TXAUX1**	**CTRL0A2**	**CTRL1A2**	**Loss[2]**	**Connection**
SWOFF	**SWON**	SWOFF	SWOFF	-	-	$ISO\_RX\text{-}TX_{ON}$ $ISO\_RX\text{-}TX_{OFF}$	A1 – R1g A1 – R1a
SWOFF	SWOFF	SWOFF	SWOFF	**SWON**	SWOFF	$ISO\_RX\text{-}TX_{ON}$ $ISO\_RX\text{-}TX_{OFF}$	A2 – R1g A2 – R1a

Table 9: Tx-Rx Isolation

Note 2: Name in loss column refers to reference in AC receive performance tables.

2.4 GHz AC Electrical Characteristics

2.4 GHz Transmit Characteristics (Channel 0, Channel 1, Channel 2 [3])

Conditions: V_{CC} = 3.3 V, PU0g OR PU1g = 3.3 V and the appropriate antenna selected, PU0a = PU1a = 0.0V, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), output powers referenced to antenna A0 OR A1 port, all unused ports terminated with 50 ohms, unless otherwise noted.

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
F_{IN}	Frequency Range	-	2400	-	2500	MHz
$P_{802.11g}$	Output power	54 Mbps OFDM signal, 64QAM, EVM = 3.0 %	-	19	-	dBm
$P_{802.11b}$	Output power	11 Mbps CCK signal, BT = 0.45 ACPR(Adj) < -32 dBc ACPR(Alt) < -52 dBc	-	19	-	dBm
BEVM	Backed Off EVM	54 Mbps, OFDM signal, 64 QAM, Pout = 8 dBm	-	1.5	-	%
P_{1dB}	P1dB	-	22	25	-	dBm
S_{21}	Small Signal Gain	-	25	-	33	dB
ΔS_{21}	Small Signal Gain Variation Over Band	-	-	1.0	2.5	dB
$S_{21}3.2$	Gain @ 3.260 to 3.267 GHz	-	-	0	4	dB
$S_{21}M$	Gain Matching	R0g to A0 OR A2 relative to R1g to A1 OR A2.	-	-	3.0	dB
2f,3f	Harmonics	Pout = 18 dBm, 1 Mbps, 802.11b CCK	-	-	-42	dBm/MHz
t_r	Rise Time	Within 1 dB	-	-	1	µs
t_{dr}, t_{df}	Delay and rise/fall Time	50 % of V_{EN} edge and 90/10 % of final output power level	-	-	0.5	µs
S_{11}	Input Return Loss	-	6	9	-	dB
Tgcoup	Coupling between T0g and T1g	Test Signal applied at T0g or T1g and measured at A0 or A1	20	-	-	dBc
STAB	Stability	P_{OUT} ≤ 18 dBm Load VSWR = 3:1	All non-harmonically related outputs less than -50 dBc/1MHz			

Table 10: 2.4 GHz Transmit Characteristics

Note 3: Antenna 2 performance will be degraded by 0.5dB from this table.

2.4 GHz Receive Characteristics (Channel 0, Channel 1, Channel 2)

Conditions: V_{CC} = 3.3 V, Appropriate antenna selected, PU0g = PU1g = PU0a = PU1a = 0 V, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), all unused ports terminated with 50 ohms, unless otherwise noted.

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
F_{OUT}	Frequency Range	-	2400	-	2500	MHz
RXg_{IL01}	Insertion Loss	A0 to R0g OR A1 to R1g	-	1.8	2.3	dB
RXg_{IL2}	Insertion Loss	A2 to R0g OR A2 to R1g	-	2.1	2.6	dB
RX_{RL}	Return Loss	-	8	15	-	dB
Delta Rx	Delta between Rx paths	A0 to R0g and A1 to R1g	-	-	0.5	dB
		A0 to R0g and A2 to R0g	-	-	0.8	dB
		A1 to R1g and A2 to R1g	-	-	0.8	dB
$ISO\_RX\text{-}TX_{ON}$	Rx Leakage Power amplifier ON	Switch Control = See Table 7 to Table 9 Pu0g or Pu1g = 1 Transmitting 18 dBm @ A0 or A1 or A2 Power measured at R0g or R1g	-12	-	-2	dBm
$ISO\_RX\text{-}TX_{OFF}$	Isolation between: A0 and R0g or A1 and R1g or A2 and Rog or A2 and R1g Power amplifier OFF Switch in TX mode	Switch Control = See Table 7 to Table 9 Small signal input into A0 or A1, (Pin<15dBm) Device not transmitting Power measured @ R0g or R1g	20	-	30	dB
$Rg_{coupA0A1}$	Coupling between R0g and R1g	Small signal input to A0 or A1 and measured at R0g and R1g	-	-	-40	dBc
Rg_{coupA2}	-	Small signal input from A2 to A0 or A2 to A1 and measured at R0g and R1g	-	-	-40	dBc

Table 11: 2.4 GHz Receive Characteristics

5 GHz AC Electrical Characteristics

5 GHz Transmit Characteristics (Channel 0, Channel 1, Channel 2 [4])

Conditions: V_{CC} = 3.3 V, PU0a OR PU1a = 3.3 V and the appropriate antenna selected, PU0g = PU1g = 0 V, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), all unused ports terminated with 50 ohms, unless otherwise noted.

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
F_{IN}	Frequency Range	-	4900	-	5850	MHz
$P_{802.11a}$	Nominal Output Power	54 Mbps OFDM signal, 64 QAM, EVM = 3.0 %	-	16	-	dBm
BEVM	Backed Off EVM	54 Mbps, OFDM signal, 64 QAM, Pout = 7 dBm	-	1.5	-	%
P_{1dB}	P1dB	-	20	22.5	-	dBm
S_{21}	Small Signal Gain	-	22	-	31	dB
$\Delta S_{21}CH$	Small Signal Gain Variation Over 20 MHz Channel	-	-	-	0.5	dB
ΔS_{21}	Small Signal Gain Variation Over Band	-	-	2.5	4	dB
$S_{21}3.2$	Gain @ 3.28 to 3.885 GHz	-	-	0	4	dB
$S_{21}M$	Gain Matching	T0a to A0 OR T1a to A1	-	-	4	dB
2f,3f	Harmonics	Pout = 15 dBm, 54 Mbps, 802.11a signal	-	-	-45	dBm/MHz
t_r	Rise Time	Within 1 dB	-	-	1	µs
t_{dr}, t_{df}	Delay and rise/fall Time	50 % of V_{EN} edge and 90/10 % of final output power level	-	-	0.5	µs
S_{11}	Input Return Loss	-	6	10	-	dB
Ta_{coup}	Coupling between T0a and T1a	Test Signal applied at T0a or T1a and measured at A0 or A1	20	-	-	dBc
STAB	Stability	P_{OUT} ≤ 16 dBm Load VSWR = 4:1	All non-harmonically related outputs less than -50 dBc/1MHz			

Table 12: 5 GHz Transmit Characteristics

(Note 4) Antenna 2 performance will be degraded by 0.5 dB from this table.

5 GHz Receive Characteristics (Channel 0, Channel 1, Channel 2)

Conditions: V_{CC} = 3.3 V, Appropriate antenna selected, PU0g = PU1g = PU0a = PU1a = 0 V, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), all unused ports terminated with 50 ohms, unless otherwise noted.

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
F_{OUT}	Frequency Range	-	4900	-	5850	MHz
RXa_{IL01}	Insertion Loss	A0 to R0a OR A1 to R1a	-	3.0	3.5	dB
RXa_{IL2}	Insertion Loss	A2 to R0a OR A2 to R1a	-	3.5	4.0	dB
RX_{RL}	Return Loss	-	8	15	-	dB
Delta Rx	Delta between Rx paths	A0 to R0a and A1 to R1a	-	-	0.5	dB
		A0 to R0a and A2 to R0a	-	-	1	dB
		A1 to R1a and A2 to R1a	-	-	1	dB
$ISO\_RX\text{-}TX_{ON}$	Rx Leakage Power amplifier ON	Switch Control = See Table 7 to Table 9 Pu0a or Pu1a = 1 Transmitting 16 dBm @ A0 or A1 Power measured at R0a or R1a	-13	-	0	dBm
$ISO\_RX\text{-}TX_{OFF}$	Isolation between: A0 and R0a or A1 and R1a or A2 and Roa or A2 and R1a Power amplifier OFF Switch in TX mode	Switch Control = See Table 7 to Table 9 Small signal input into A0 or A1(Pin<15dBm) Device not transmitting Power measured @ R0g or R1g	16	-	29	dB
$Ra_{coupA0A1}$	Coupling between R0a and R1a	Small signal input to A0 or A1 and measured at R0a and R1a	-	-	-40	dBc
Ra_{coupA2}	-	Small signal input from A2 to A0 or A2 to A1 and measured at R0a and R1a	-	-	-30	dBc

Table 13: 2.4 GHz Transmit Characteristics

2.4 GHz Power Detector Characteristics

Conditions: V_{CC} = 3.3 V, PU0g OR PU1g = 3.3 V and the appropriate antenna selected, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), all unused ports terminated with 50 ohms, unless otherwise noted.

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
F_{OUT}	Frequency Range	-	2400	-	2500	MHz
PDR	Power detect range, peak power	Measured at A0 or A1	0	-	20	dBm
PDZ_{LOAD}	DC load impedance	-	-	2.6	-	kohm
PDV_{NoRF}	Output Voltage, P_{OUT} = No RF	-	0.90	0.95	1.00	V
PDV_{p18}	Output Voltage, P_{OUT} = 18 dBm	-	0.47	-	0.69	V
PDV_{p20}	Output Voltage, P_{OUT} = 20dBm	-	0.34	-	0.56	V
LPF_{-3dB}(4)	Power detect low pass filter -3dB corner frequency	Load = high impedance Min: 10 kohm Typ: 500 kohm	270	300	400	KHz

Table 14: 2.4 GHz Power Detector Characteristics

Note 4: The SE2546A30 provides the following load: PDZ_{LOAD} = 2.6 kohm, PDC_{LOAD} = 220 pF.

5 GHz Power Detector Characteristic

Conditions: V_{CC} = 3.3 V, PU0a OR PU1a = 3.3 V and the appropriate antenna selected, T_A = 25 °C, as measured on SiGe Semiconductor's SE2546A30-EV1 evaluation board (de-embedded to device), all unused ports terminated with 50 ohms, unless otherwise noted.

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
F_{OUT}	Frequency Range	-	4900	-	5850	MHz
PDR	Power detect range, peak power	Measured at A0 or A1	0	-	20	dBm
PDZ_{LOAD}	DC load impedance	-	-	2.6	-	kohm
PDV_{NoRF}	Output Voltage, P_{OUT} = No RF	-	0.90	0.95	1.00	V
PDV_{p15}	Output Voltage, P_{OUT} = 15dBm	-	0.54	-	0.75	V
PDV_{p18}	Output Voltage, P_{OUT} = 18dBm	-	0.35	-	0.55	V
LPF_{-3dB}(5)	Power detect low pass filter -3dB corner frequency	Load = high impedance Min: 10 kohm Typ: 500 kohm	270	300	400	kHz

Table 15: 5 GHz Transmit Characteristics

Note 5: The SE2546A30 provides the following load: PDZ_{LOAD} = 2.6 kohm, PDC_{LOAD} = 220 pF

Package Information

Figure 3 and Figure 4 show the detailed device package diagram. The pads on the SiGe RF modules are plated with gold over nickel, with a gold thickness of approx. 0.75 to 1.0 um. The modules can be reflowed onto FR4 based material using eutectic Pb based or common tin based Pb free solder pastes.

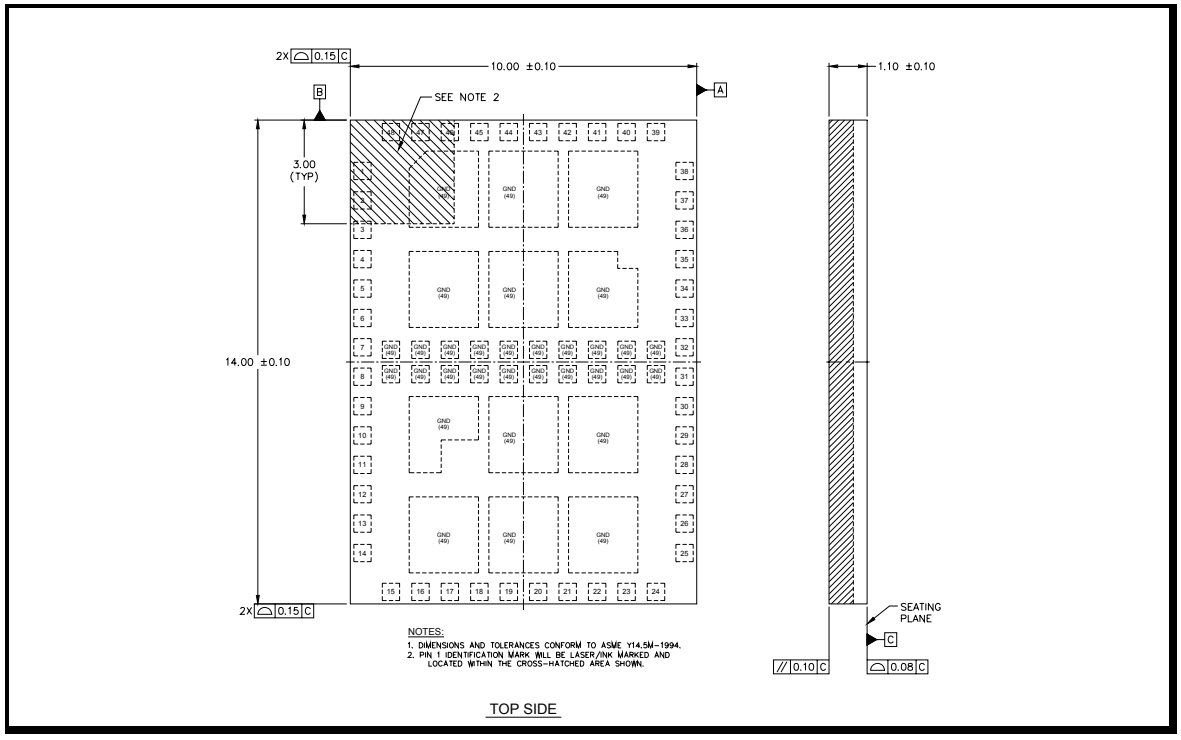

Figure 3: SE2546A30 Package Diagram (209-POD-01_Rev_2p0)

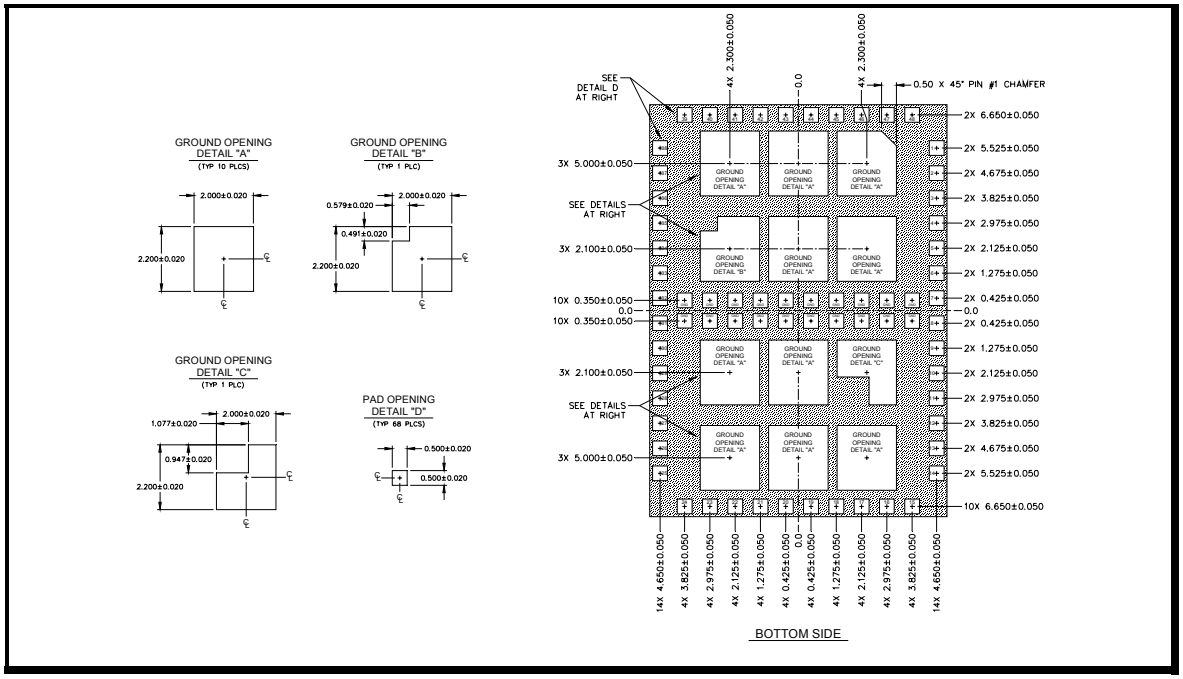

Figure 4: SE2546A30 Detailed Package Diagram (209-POD-01_Rev_2p0)

Recommended PCB Footprint

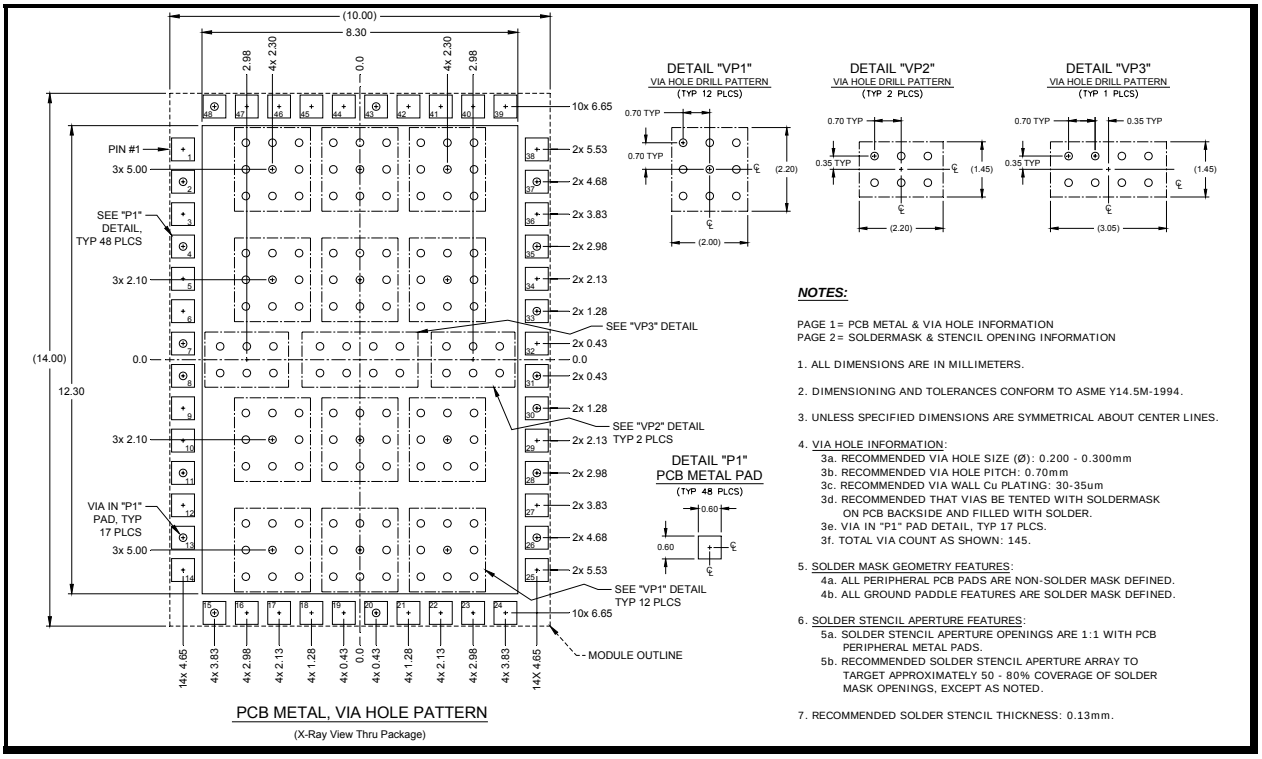

Figure 5: Recommended PCB Footprint – PCB Metal, Via Hole Pattern (209-DWG-01_Rev_1p0)

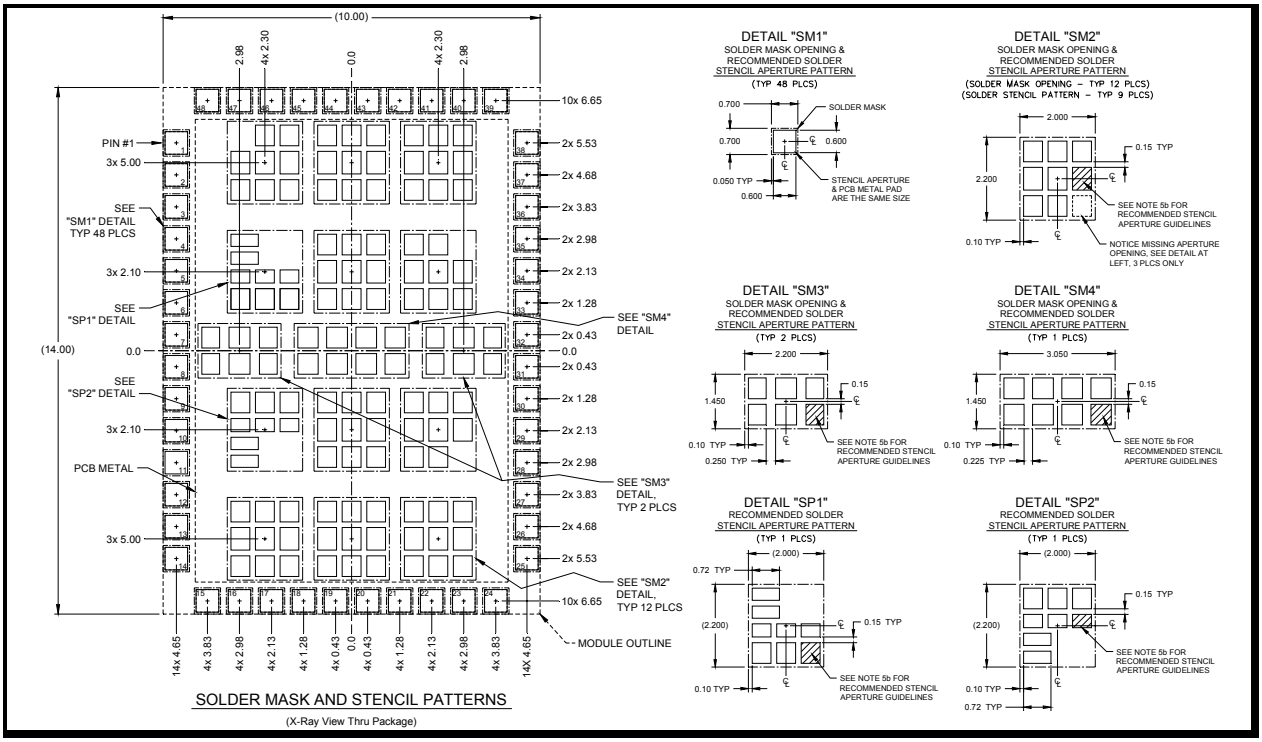

Figure 6: Recommended PCB Footprint – Solder Mask and Stencil Patterns (209-DWG-01_Rev_1p0)

Package Handling Information

Because of its sensitivity to moisture absorption, instructions on the shipping container label must be followed regarding exposure to moisture after the container seal is broken, otherwise, problems related to moisture absorption may occur when the part is subjected to high temperature during solder assembly. The SE2546A30 is capable of withstanding a Pb free solder reflow. Care must be taken when attaching this product, whether it is done manually or in a production solder reflow environment. If the part is manually attached, precaution should be taken to insure that the device is not subjected to temperatures above its rated peak temperature for an extended period of time. For details on both attachment techniques, precautions, and handling procedures recommended by SiGe, please refer to:

- SiGe's Application Note: "Land Grid Array Module Solder Reflow & Rework Information", *Document Number 69-APP-01*.
- SiGe's Application Note: "Handling, Packing, Shipping and Use of Moisture Sensitive LGA", *Document Number 69-APP-02*.

Branding Information

The device branding is shown in Figure 7.

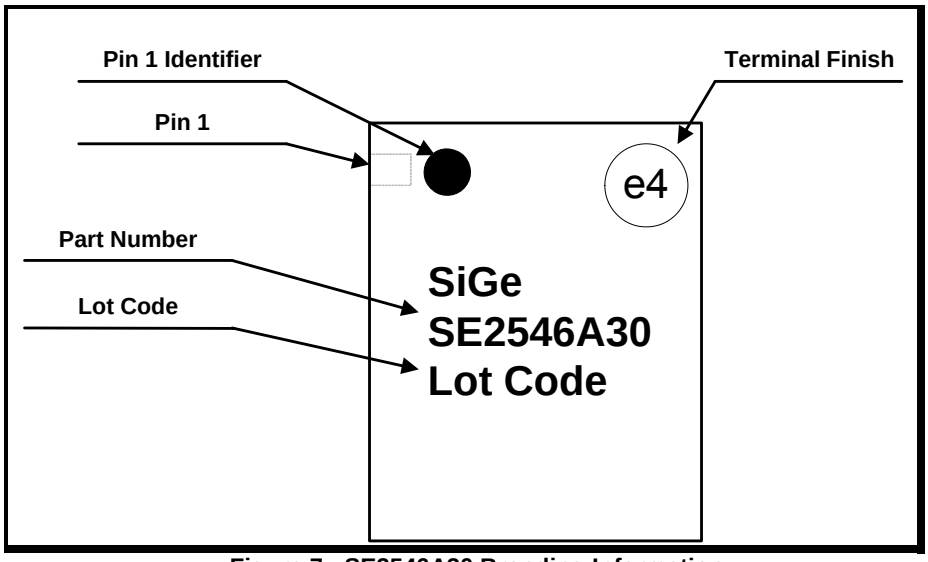

Figure 7: SE2546A30 Branding Information

Tray Information

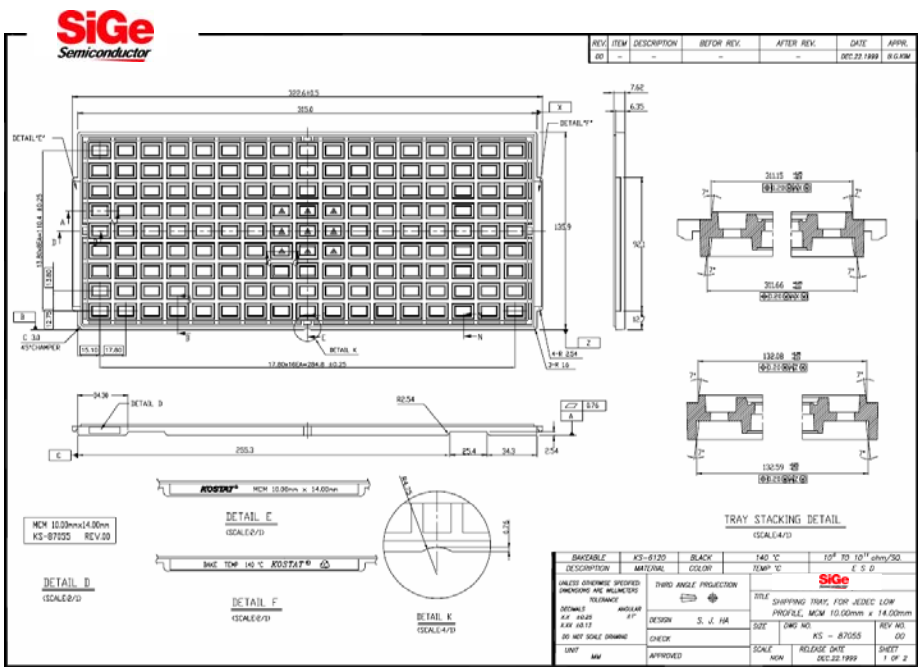

Figure 8: Tray Overview Information

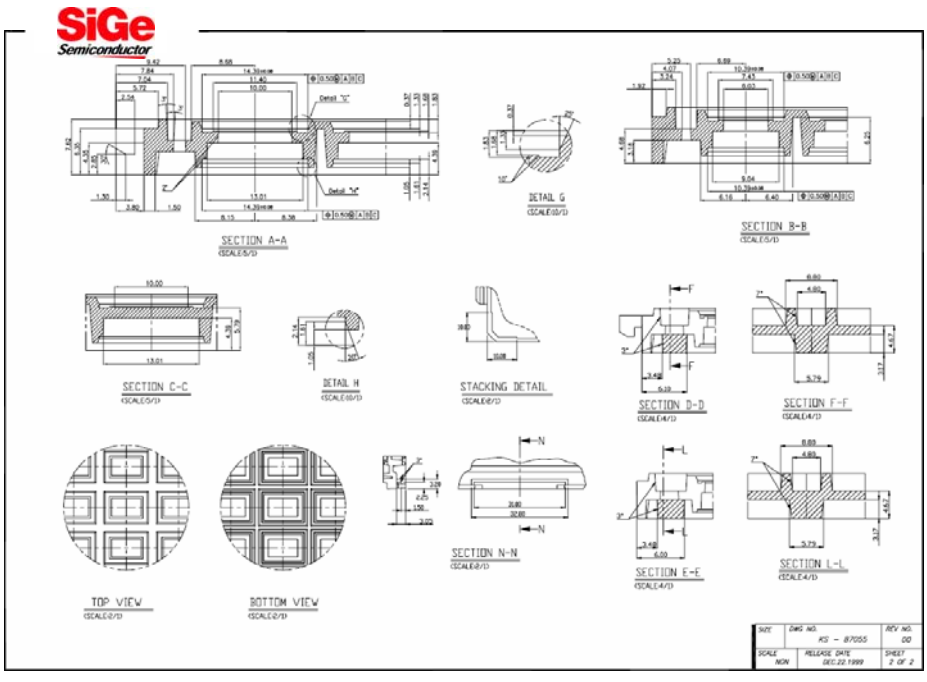

Figure 9: Tray Pocket Information

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Product Preview
The datasheet contains information from the product concept specification. SiGe Semiconductor, Inc. reserves the right to change information at any time without notification.

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