1 Characteristics

Table 1. Absolute maximum rating (limiting values)

Symbol	Parameter	Value			Unit
		Min.	Typ.	Max.	
P_{IN}	Input Power RF_{IN}			35	dBm
$V_{ESD\ (IEC)}$	ESD ratings IEC 61000-4-2 (C = 150 pF, R = 330 Ω, 10 shots with both polarities and each condition, cumulative method) RF_{IN}, RF_{OUT}, air discharge RF_{IN}, RF_{OUT}, contact discharge	 ±15 ±8			 kV kV
$V_{ESD\ (HBM)}$	Human body model, JESD22-A114-B, All I/O	2			kV
$V_{ESD\ (MM)}$	Machine model, JESD22-A115-A, All I/O	100			V
$V_{ESD\ (CDM)}$	Charge device model, JESD22-C101-C, All I/O	500			V
T_{OP}	Operating temperature	-30		+85	ºC

Table 2. Electrical characteristics - impedances (T_{amb} = 25 °C)

Symbol	Parameter	Value			Unit
		Min.	Typ.	Max.	
Z_{OUT}	Nominal output impedance		50		Ω
Z_{IN}	Nominal input impedance		50		Ω
Z_{CPLD}	Nominal coupling impedance		50		Ω
Z_{OUT}	Nominal ISO impedance		50		Ω

Table 3. Electrical characteristics - RF performance (T_{amb} = 25 °C)

Symbol	Parameter	Test condition	Value			Unit
			Min.	Typ.	Max.	
T_{OP}	Operating temperature		-30		+85	°C
f	Frequency range (bandwidth)		824		2025	MHz
I_L	Insertion loss in bandwidth	From 824 MHz to 2025 MHz		0.1	0.2	dB
R_L	Return loss in bandwidth	From 824 MHz to 2025 MHz	15			dB
CPLD	Coupling factor (including attenuator)	From 824 MHz to 915 MHz	35		39	dB
		From 1710 MHz to 2025 MHz	28		33	dB
Ripple	Coupling ripple in individual band	(824 to 849 MHz) (880 to 915 MHz) (1710 to 1785 MHz) (1850 to 1910 MHz)(1880 to 2025 MHz)			0.5	dB
DIR	Coupler directivity	From 824 MHz to 2025 MHz	20	25		dB

1.1 RF measurement (on reference evaluation board)

Measurements done on reference evaluation board under 50 Ω, de-embedding at CPL-WB-01C2 bumps.

Figure 2. Insertion loss

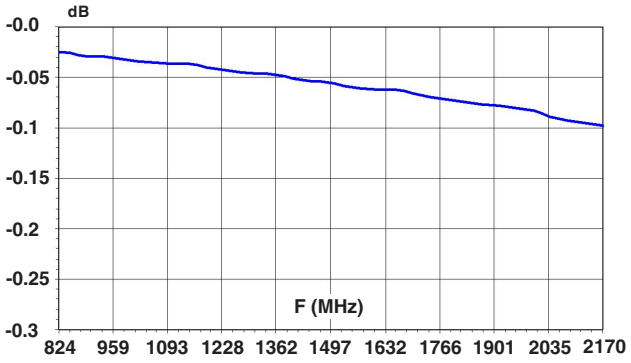


Figure 3. Coupling and isolation

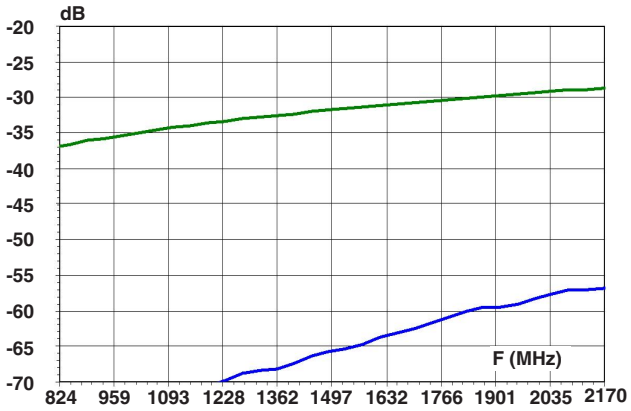
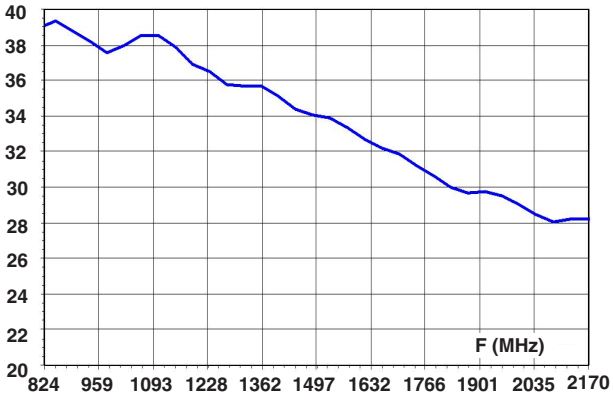
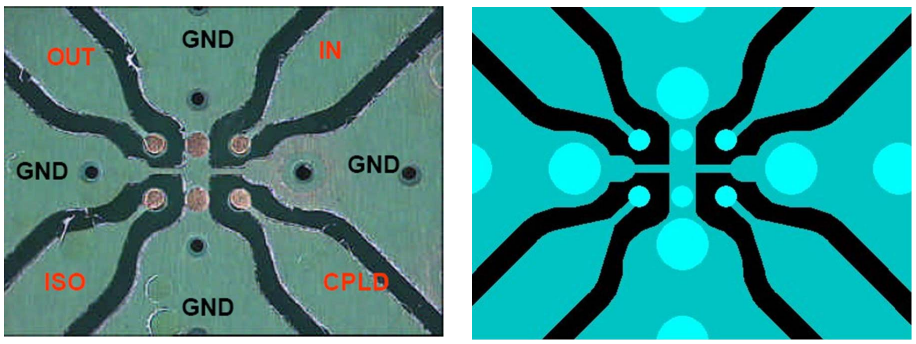


Figure 4. Directivity



2 Reference evaluation board

Figure 5. CPW lines (W = 850 µm with gap to gnd = 260 µm) on top layer + GND on bottom layer



- Material: 2 layers FR4 with solder mask on top and bottom layer
- Substrate thickness: 0.8 mm
- Line lengths: 10.2 mm
- Extension values on short line measurement: 102 ps
- Through insertion loss: 0.20 dB @ 1 GHz , 0.24 dB@ 2 GHz

3 Package information

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com. ECOPACK® is an ST trademark.

Figure 6. Package dimensions

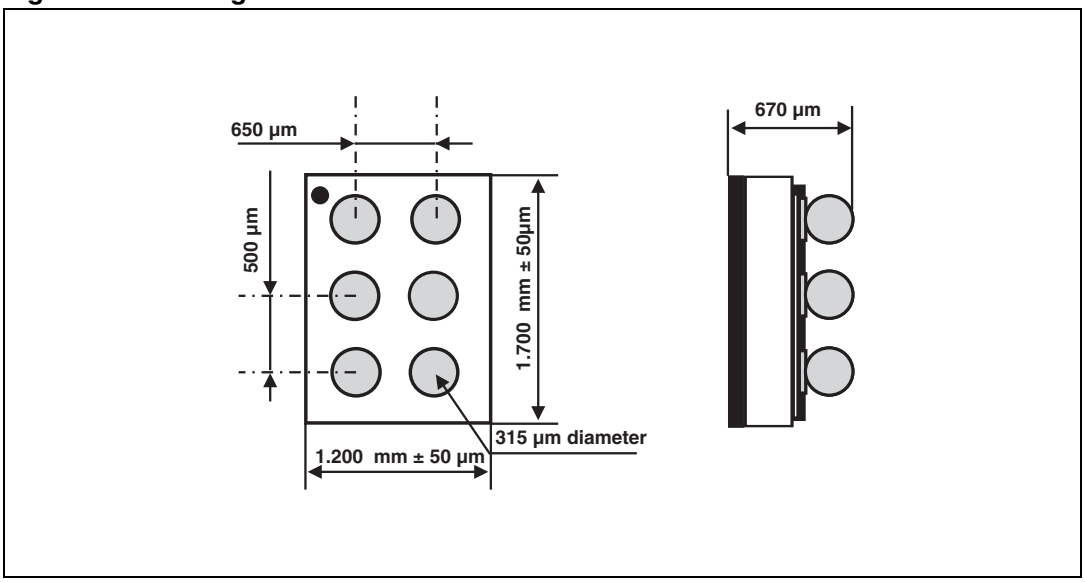


Figure 7. Footprint

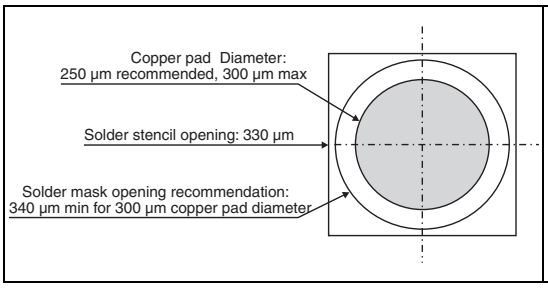


Figure 8. Marking

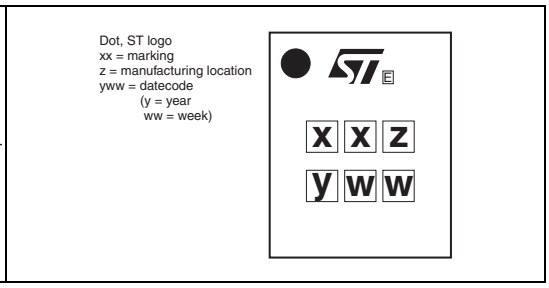
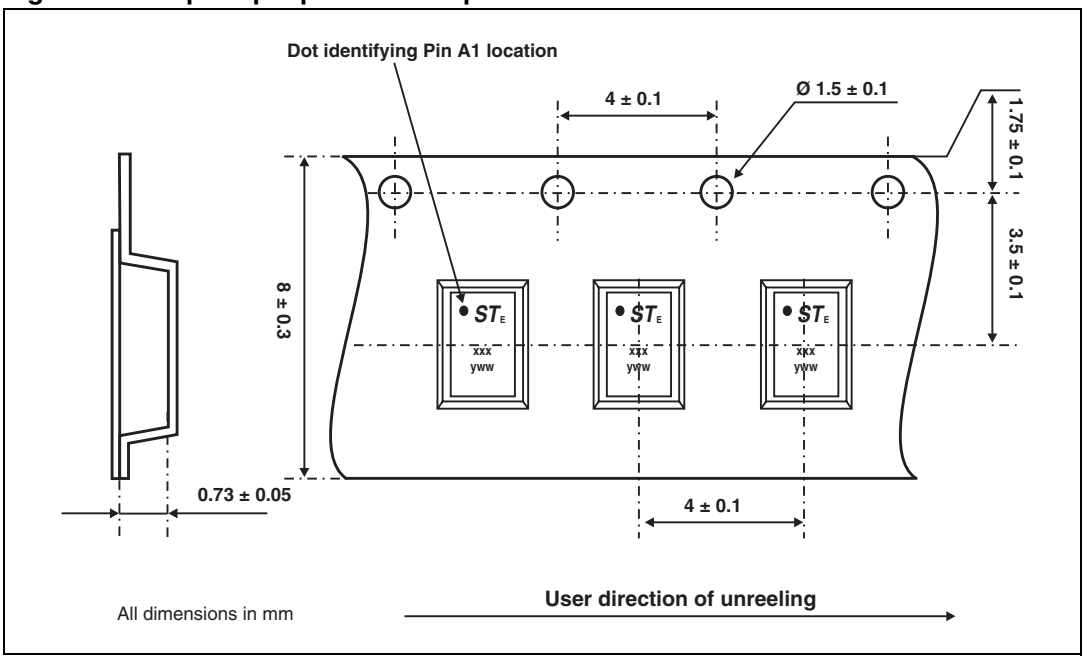


Figure 9. Flip Chip tape and reel specifications



Note: More information is available in the application note:

AN1235: "Flip Chip: package description and recommendations for use"

4 Ordering information

Table 4. Ordering information

Order code	Marking	Base qty	Delivery mode
CPL-WB-01C2	RE	5000	Tape and reel

5 Revision history

Table 5. Document revision history

Date	Revision	Changes
15-Jan-2009	1	Initial release.
12-Oct-2009	2	Updated Table 3 value frequency range.
06-Jan-2010	3	Updated applications and description on page 1. Updated page layout.

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