

Engineering/Process Change Notice

ECN/PCN No.: R0037

For Manufacturer					
Product Description: 4G/LTE Chip Antenna	Abracon Part Numb	er / Part Series:	☐ Documentation only ☐ ECN	☐ Series☑ Part Number	
	ACAR3705-S698		□ EOL		
Affected Revision: Initial Release	New Revision:		Application:	□ Safety 図 Non-Safety	
Prior to (Change		After Change		

N/A Antenna Efficiency, Average Gain Table

> GSM Antenna Performance Summary 1710

> > 45.07

-3.46

51.26

1850

57.30

-2.42

67.94

-1.67

77.00

-1.13

56.66

-2.46

41.99

-3.77

Added: Antenna Efficiency, Peak & Average Gain Graphs (Section 6.3)

Updated: Antenna Efficiency, Average Gain Table (Section 6.4)

Added: Peak Gain

Antenna Performance Summary on the 45 x 120 mm Evaluation Board									
Frequency Band (MHz)	700	824	960	1710	1850	1990	2170	2500	2700
Efficiency (%)	35.12	54.26	65.49	53.03	58.87	90.53	78.19	72.31	65.10
Average Gain (dBi)	-4.54	-2.57	-1.83	-2.75	-2.30	-0.43	-1.06	-1.40	-1.86
Peak Gain (dBi)	-1.80	0.016	1.07	2.97	3.21	4.03	3.76	2.96	2.38

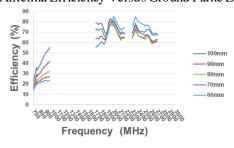
Efficiency (%) Average Gain (dBi) * (Ground Length 107 mm)

Band (MHz)

Antenna Efficiency Versus Ground Plane Lengths



Updated: Antenna Efficiency Versus Ground Plane Lengths



Reliability Test – Low Temperature & High Temperature Tests

Test Condition	Test Exposure and Duration			
Low Temperature test	Expose the specimen to -30°C for 500 hours and then to normal temperature/ humidity for 24 hours or more. After this test, examine its appearance and functions.			
High-temperature test	Expose the specimen to $+85^{\circ}\text{C}$ for 500 hours and then to normal temperature / humidity for 24 hours or more. After this test, examine its appearance and functions.			

Updated: Reliability Test - Low Temperature & High Temperature Tests (Section 8.0)

Test Condition	Test Exposure and Duration			
Low Temperature test	Expose the specimen to -30°C for 16 hours and then to normal temperature/ humidity for 24 hours or more. After this test, examine its appearance and			
	functions.			
	Expose the specimen to +85°C for 16 hours and then to normal temperature /			
High-temperature test	humidity for 24 hours or more. After this test, examine its appearance and			
	functions.			

Reflow Profile

Phase	Profile Features	Sn-Pb Assembly	Pb-Free Assembly (SnAgCu)
Ramp-Up	Avg Ramp-Up Rate (Tsmax to TP)	3°C /second(max)	3°C /second(max)
Preheat	-Temperature Min (TSmin) -Temperature Max (TSmax)	100°C 150°C	100°C 150°C
	-Time (Tsmin to Tsmax)	60-120 seconds	60-120 seconds
Reflow	-Temperature (TL)	183°C	217°C
	-Total Time above TL (t L)	60-150 seconds	60-150 seconds
Peak	-Temperature (TP)	235°C	260°C
	-Time(tp)	10-30 seconds	20 - 40 second
Ramp-Down	Rate	6°C / second max.	6°C / second max.
Time from 25°C to Peak Temperature		6 minutes max	8 minutes max.

Updated: Reflow Profile (Section 9.0)

Phase	Profile Features	Pb-Free Assembly (SnAgCu)	
Preheat	-Temperature Min (TSmin) -Temperature Max (TSmax)	150°C 200°C	
	-Time (Tsmin to Tsmax)	60-120 seconds	
Ramp-Up	Avg Ramp-Up Rate (Tsmax to TP)	3°C /second (max)	
Reflow	-Temperature (TL)	217°C	
Reliow	-Total Time above TL (t L)	30-100 seconds	
Peak	-Temperature (TP)	260°C	
Peak	-Time(tp)	20 - 30 second	
Ramp-Down	Rate	6°C / second max.	
Time from 25°C to Peak Temperature		8 minutes max.	
Composition of solder paste		96.5Sn/3Ag/0.5Cu	
Solder Paste N	Iodel	SHENMAO PF606-P26	

Form #7020 | Rev. G | Effective: 02/22/2021 |







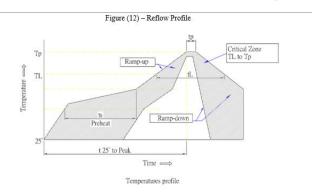




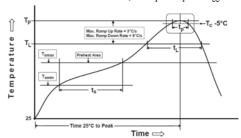




Engineering/Process Change Notice



According to the Standard IPC/JEDEC J-STD-020C, the temperature profile suggested is as follow:



Note: All the temperature measurement points are on the component's top surface. If the applied temperature is over recommended, the component's surface will start to peel or damage.

Soldering with Iron:

Soldering iron temperature: $270\pm10\,^{\circ}\text{C}$ Apply preheating at 120 C for 2-3 minutes and complete the soldering for each terminal within 3 seconds.

Note: If the applied temperature is over recommended or if the time exceeds the stated, the component's surface will start to peel or damage.

Cause/Reason for Change:

Standard Product Update

Change Plan						
Additional Remarks:						
N/A						
Change Declaration: The changes do not negatively impact the performance of this product.						
Issued By:		Issued Department:				
Roshni Prasad		Engineering				
Approval:		Approval:				
Reuben Quintanilla		Ying Huang				
Quality Director		Purchasing Director				
For Abracon EOL only						
Last Time Buy (if applicable):		Alternate Part Number / Part Series:				
N/A		N/A				
Additional Approva	ıl:	Additional Approval:				
N/A		N/A				
Customer Approval (If Applicable)						
Qualification Status:						
Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.						
Customer Part Number:		Customer Project:				
Company Name: Company Represer		Representative Signature:				
Customer Remarks:						
	Additional Remark N/A ormance of this product. Issued By: Roshni Prasad Approval: Reuben Co Quality For Abrac Additional Approva N/A Customer Appr	N/A Issued By: Roshni Prasad Approval: Reuben Quintanilla Quality Director For Abracon EOL only Alternate Part Num N/A Additional Approval: N/A Customer Approval (If Applicable) □ Approved □ Not accepted no feedback from the customer 1 month after				

ABRACON









