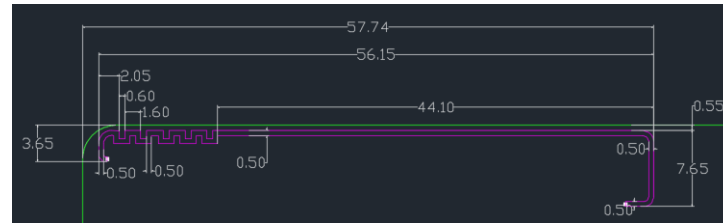


Antenna Datasheet



Document	Datasheet
Type	PCB Antenna
Application	RF 433.92MHz
Part No.	RKE Ant
Revision	1.0

DATASHEET



Application

RF 433.92MHz(Smart Card Key)

Features

PCB Antenna

Size(56.15*7.65mm)

Performance Optimizing with external lumped matching components

Revision History

Rev. No	Data	Title	Contents	Page
0	2022. 07. 12		New Published	
1	2022. 08. 12		Changed PCB Pattern	

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1. Specifications

1.1 Electrical Specifications

No	Item	Spec	Remark
1	Frequency Range [MHz]	433.92	
2	VSWR	Max 2.0:1	
3	Directional	Omni directional	
4	Impedance [Ω]	Nominal 50	

1.2 Mechanical Specification

No	Item	Spec	Remark
1	Dimensions	56.15*7.65mm	

1.3 Appearance and Material

No	Item	Spec	Remark
1	Antenna	PCB Pattern	*. 1)PCB Stack-up *. 2)CCL Datasheet

*. 1) PCB Layer Stack-up

No	Material	Thickness	Material
	SILK	0.015	TAIYO S200W
	PSR	0.015	OTC R500MK
	Plating	0.020	
Layer 1	Copper	0.018	
	CCL	0.200	DOOSAN DS-7409SN
Layer 2	Copper+Plating	0.018	
	Plating	0.020	
	PSR	0.015	OTC R500MK
	Total	0.306	

*. 2) CCL datasheet

DS-7409S(N) (ANSI: FR-4) Excellent Heat Resistance

Features

- High Tg (above 170°C)
- Excellent thermal performance
- Good moisture resistance
- CAF resistant
- Suitable for lead-free soldering process

Applications

- High layer count boards
- High density multi-layer boards
- Servers, advanced computers, workstations and automotives

General Properties

● Multiple Thermal Excursion Test Result



- Test Condition
 - 20L PCB
 - Thickness 2.3mm
 - 6 Times @288°C/10sec
 - Drill Hole Size 250mic
 - Pitch 39.4mil
- Test Result
 - No Crack
 - No Delamination

● Thermal Shock Test Result after Moisture Treatment

Test Condition (1.0T)	DS-7409S(N)	Standard Tg
PCT 1hr + Solder Dipping 288°C/10sec	○ ○ ○	○ ○ ×
PCT 2hr + Solder Dipping 288°C/10sec	○ ○ ○	○ × ×
PCT 3hr + Solder Dipping 288°C/10sec	○ ○ ○	× × ×

○ : No Abnormality × : Measuring or Delamination

Property	Unit	Test Condition	Typical Value	Test Method
Tg	°C	DSC	170	IPC-TM-650.2.4.25c
		TMA	165	IPC-TM-650.2.4.24c
CTE Z-axis	ppm/°C	Ambient to Tg	50	IPC-TM-650.2.4.41
Z-axis Expansion	%	50°C to 260°C	3.2	IPC-TM-650.2.4.41
Decomposition Temperature (5% wt loss)	°C	TGA	350	IPC-TM-650.2.3.40
T-260	min	TMA	120	IPC-TM-650.2.4.24.1
T-288	min	TMA	10	IPC-TM-650.2.4.24.1
Dielectric Constant (Resin Content 50%)		C-24/23/50 (1GHz)	4.3	IPC-TM-650.2.5.5.9
Dissipation Factor (Resin Content 50%)		C-24/23/50 (1GHz)	0.016	IPC-TM-650.2.5.5.9
Peel Strength (Standard profile 1oz)	N/mm	Condition A	1.7	IPC-TM-650.2.4.8
Water Absorption	%	E-24/50+D-24/23	0.15	IPC-TM-650.2.6.2.1

3. Measurement Results

3.1 Measured Antenna Gain

[Normal](#) [View](#)

- Data - Capture

Frequency	Sum					H($\theta=90$)				E1($\phi=90$)				E2($\phi=0$)			
	θ [Deg]	ϕ [Deg]	Max[dBi]	Avg[dBi]	Eff[%]	ϕ [Deg]	Max[dBi]	Avg[dBi]	BW[Deg]	θ [Deg]	Max[dBi]	Avg[dBi]	BW[Deg]	θ [Deg]	Max[dBi]	Avg[dBi]	BW[Deg]
433.920	45.0	0.0	-7.255	-11.081	7.796	300.0	-9.400	-11.893	200.95	30.0	-9.167	-11.026	201.00	45.0	-7.255	-10.846	79.08

3. Measurement Results

3.2 Measured Radiation Patterns

