REVISIONS												
Revision	ECN	l No.	Date	Nam	ne							
2	Rele	eased	12/05/05	SMT-II-1	20505							
3	Rele	eased	04/08/09	Isolation S	specs	Jack Zhu						
SPECIFICATION FOR RFID APPLICATION:												
			SMT Seri	es Surface	Mount	Circulator						
P/N # JCM0840T0845S10R (0.840~0.845GHz)												
P/N # JCM0840T0924S10R (0.840~0.924GHz)												
	P/N # JCM0860T0872S10R (0.860~0.872GHz)											
P/N # JCM0860T0960S10R (0.860~0.960GHz)												
P/N # JCM0850T0950S10R (0.850~0.950GHz)												
		P/N	J # JCM090	2T0928S1	OR (0.9	002~0.9280	GHz)					
P/N # JCM0902T0930S10R (0.902~0.930GHz)												
		P/N	J # JCM092	0T0925S1	OR (0.9	20~0.9250	GHz)					
		P/N	J # JCM095	0T0956S1	OR (0.9	950~0.9560	GHz)					
RoHS Compliant												
	101			THESE DRA	WINGS AN	D SPECIFICATIO	ONS ARE THE PROPERTY OF JQL					
JŲL				ELECTRONICS INC. AND SHALL NOT BE REPRODUCED OR USED WITHOUT WRITTEN PERMISSION FROM JQL ELECTRONICS INC.								
	D	ate	Name	Signature	ure Title:							
DRAFT	08/	01/03	Q.WANG		LOW INTERMODULATION							
APPD EE	23/	12/05	J. ZHU		SMT-II SERIES							
APPD ED	23/	12/05	J. ZHU		SURACE MOUNT CIRCULATOR							
PROJ ENGR	R 23/	12/05	J. ZHU									
Classifica	ation		Size	Rev	[DWG. No.	SH-SC20A					
A / Paten P	ending		II-A	2	CAGE C	ode: SMT-II-0	0.860~0.960-A Sheet 1 of 5					

1 SCOPE

This General Specification (GS) defines the technical specifications, mechanical specification, assembly recommendation and packaging for the SMT-II LOW INTERMODULATION SURFACE MOUNT CIRCULATOR ---

P/N # JCM0860T0872S10R (0.860~0.872GHz)

P/N # JCM0860T0960S10R (0.860~0.960GHz)

P/N # JCM0850T0950S10R (0.850~0.950GHz)

P/N # JCM0902T0928S10R (0.902~0.928GHz)

P/N # JCM0902T0930S10R (0.902~0.930GHz)

P/N # JCM0950T0956S10R (0.950~0.956GHz)

SPECIFICATION / NARROW BANDS	MIN	ТҮР	MAX	UNITS
JCM0840T0845S10R -Frequency Range	840		845	MHz
JCM0860T0872S10R -Frequency Range	860		872	MHz
JCM0902T0928S10R -Frequency Range	902		928	MHz
JCM0902T0930S10R -Frequency Range	902		930	MHz
JCM0920T0925S10R -Frequency Range	920		925	MHz
JCM0950T0956S10R -Frequency Range	950		956	MHz
Nominal Impendence		50		Ohms
Isolation	27	28		dB
Insertion Loss		0.20	0.30	dB
Forward Power	100			Watts
Return Loss (all ports)	20	23		dB
3 rd Intermodulation **		-85	-75	dBc
Direction of Circulation		Clockwise		
Temperature Range	-30		+75	Celsius

2 TECHNICAL SEPCIFICATIONS

Notes:

* Peak Power spike is no more than 5 micro seconds.

** Two tone intermod levels is measured with 2x 20W tones, Δf is 15MHz.

SPECIFICATION / FULL BAND	MIN	ТҮР	MAX	UNITS
JCM0840T0924S10R -Frequency Range	840		924	MHz
JCM0860T0960S10R -Frequency Range	860		960	MHz
JCM0850T0950S10R -Frequency Range	850		950	MHz
Nominal Impendence		50		Ohms
Isolation	18	20		dB
Insertion Loss		0.40	0.4	dB
Forward Power	100			Watts
Return Loss (all ports)	18	20		dB
3 rd Intermodulation **		-85	-75	dBc
Direction of Circulation		Clockwise		
Temperature Range	-30		+75	Celsius

Notes:

* Peak Power spike is no more than 5 micro seconds.

** Two tone intermod levels is measured with 2x 20W tones, Δf is 15MHz.

3 OUTLINE DRAWINGS



Units: mm

	mm	inch
Diameter	24.2	0.95
Height	7.6	0.30
Thickness of PCB (Bottom)	1.0	0.04
Torelance	±0.1	±0.01

4 PCB LAYOUT RECOMMENDATION



Notes:

* SMT-II Series Circulator was primary design for automotive reflowing assembly process

*** Custom PCB Layout is optional at the additional cost

****Ground Connection: Thru Hole is optional, it will help the unit to quickly release the heat when the high power RF input. Size of Thru Hole is at your choice. You also can create other shape instead of Thru Hole. Min 10% ground area must be soldered.

5 **REFLOW PROFILE**

Average Ramp-Up Rate	2°C/Sec Max
Preheat 25°C~150C°	200 Secs
Peak Temperature	$245^{\circ}C \pm 5C^{\circ}$
Time within 5°C of actual Peak Temperature	8 Secs Max
Average Ramp-Down Rate	4°C/Sec Max
Time 25°C to Peak Temperature	300 Secs

Suggested Reflow Profile for JQL SMT Circulators



6 NAMEPLATE AND PRODUCT MARKING

6-1.1. Nameplate

Nameplates shall contain the following information:

- a. JQL logo
- b. Part's Number: Example, JCM0902T0928S10R
- c. Frequency Range: Example, Freq: 0.902~0.928GHz
- d. Direction of Circulation
- e. Port Mark for all 3 ports
- f. Serial Number (S/N) S/N shall include 7 digits in the format YMMXXXXX, where Y-year; MM-month; and XXXXX-sequential number.

6-1.2. Packaging

The Standard package for SMT-II parts will be vacuum packaging on hard paper plates. The foams will be used between 2 packaged plates. Finally they will be put into the boxes. Each Box will contain 40 units.

Tape and Reel Package is available

7 ROHS COMPLIANCE

Components	Component Weight %	Details													
Housing 50.50%	50 500	Chemical Element	AL	Si	Fe	Cu	Mn	Mg	Zn	Pb	Cr+	Cd	Hg	PBB	PBPE
	50.50%	Composition rate (w/w%)	90.6	0.5	0.5	0.1	0.6	5.5	2. 2	0	0	0	0	0	0
Soldering Material 0.02%	0.029/	Chemical Element	Sn	Cu	Sb	s	Р	С	Bi	Pb	Cr+	Cd	Hg	PBB	PBPE
	0.02%	Composition rate (w/w%)	99.3	0.7	0	0	0	0	0	0	0	0	0	0	0
Circuit	0.18%	Chemical Element	Cu	Fe	Sb	Bi	Р	Zn	Bi	Pb	Cr+	Cd	Hg	PBB	PBPE
		Composition rate (w/w%)	63.5	0.15	0.005	0.002	0.01	36.25	0	0.0 8	0	0	0	0	0
Ferrite 6.3	6 20%	Chemical Element	Fe2O3	CaCo3	In2O3	GeO2	V2O5	Y2O3	Bi	Pb	Cr+	Cd	Hg	PBB	PBPE
	0.50%	Composition rate (w/w%)	50	1	10	30	5	4	0	0	0	0	0	0	0
Covers	36.00%	Chemical Element	Cu	Mn	Р	S	Si	Fe	Bi	Pb	Cr+	Cd	Hg	PBB	PBPE
		Composition rate (w/w%)	4	20	14	9	0	53	0	0	0	0	0	0	0
Magnet	7.00%	Chemical Element	Sm	Co	Cu	Fe	Zr	Sb	Bi	Pb	Cr+	Cd	Hg	PBB	PBPE
		Composition rate (w/w%)	26.5	49	6.5	15.5	2.5	0	0	0	0	0	0	0	0

SMT-II PARTS ARE IN COMPLIANCE WITH ROHS.