

REVISIONS				
Revision	ECN No.	Date	Name	Signature
2	Released	12/05/05	SMT-II-120505	
3	Released	04/08/09	Isolation Specs	Jack Zhu

**SPECIFICATION FOR RFID APPLICATION:**

SMT Series 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 # JCM0902T0928S10R (0.902~0.928GHz)

P/N # JCM0902T0930S10R (0.902~0.930GHz)

P/N # JCM0920T0925S10R (0.920~0.925GHz)

P/N # JCM0950T0956S10R (0.950~0.956GHz)

RoHS Compliant



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	Date	Name	Signature	Title:
DRAFT	08/01/03	Q.WANG		<b>LOW INTERMODULATION SMT-II SERIES SURFACE MOUNT CIRCULATOR</b>
APPD EE	23/12/05	J. ZHU		
APPD ED	23/12/05	J. ZHU		
PROJ ENGR	23/12/05	J. ZHU		
<b>Classification</b>	<b>Size</b>	<b>Rev</b>	<b>DWG. No.</b>	<b>SH-SC20A</b>
A / Paten Pending	II-A	2	CAGE Code: SMT-II-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)

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P/N # JCM0950T0956S10R (0.950~0.956GHz)

# 2 TECHNICAL SEPCIFICATIONS

SPECIFICATION / NARROW BANDS	MIN	TYP	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 Impedence		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 <sup>rd</sup> 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,  $\Delta f$  is 15MHz.

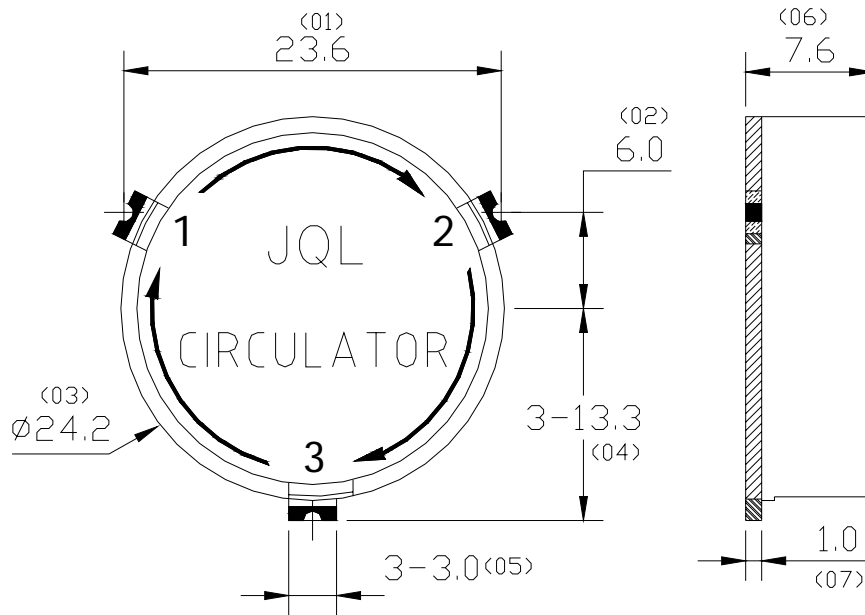
<b>SPECIFICATION / FULL BAND</b>	<b>MIN</b>	<b>TYP</b>	<b>MAX</b>	<b>UNITS</b>
JCM0840T0924S10R -Frequency Range	840		924	MHz
JCM0860T0960S10R -Frequency Range	860		960	MHz
JCM0850T0950S10R -Frequency Range	850		950	MHz
Nominal Impedence		50		Ohms
Isolation	18	20		dB
Insertion Loss		0.40	0.4	dB
Forward Power	100			Watts
Return Loss (all ports)	18	20		dB
3 <sup>rd</sup> 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,  $\Delta f$  is 15MHz.

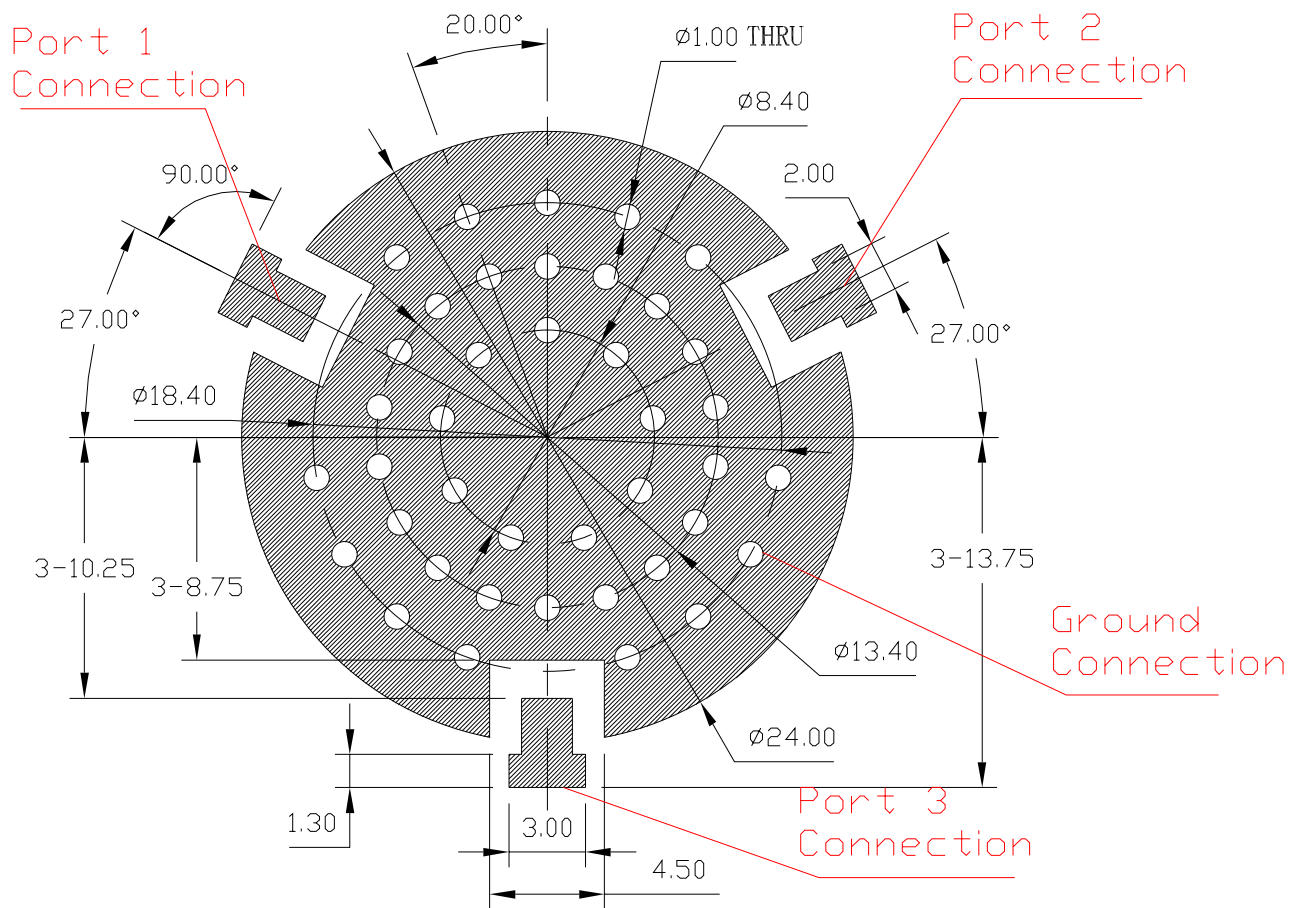
### 3 OUTLINE DRAWINGS



Units: mm

	mm	inch
<b>Diameter</b>	24.2	0.95
<b>Height</b>	7.6	0.30
<b>Thickness of PCB (Bottom)</b>	1.0	0.04
<b>Tolerance</b>	$\pm 0.1$	$\pm 0.01$

## 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

<b>Average Ramp-Up Rate</b>	<b>2°C/Sec Max</b>
<b>Preheat 25°C~150°C</b>	<b>200 Secs</b>
<b>Peak Temperature</b>	<b>245°C ± 5°C</b>
<b>Time within 5°C of actual Peak Temperature</b>	<b>8 Secs Max</b>
<b>Average Ramp-Down Rate</b>	<b>4°C/Sec Max</b>
<b>Time 25°C to Peak Temperature</b>	<b>300 Secs</b>

**Suggested Reflow Profile for JQL SMT Circulators**

