

# Preliminary Specification

Switchplexer® for GSM Quad / UMTS × 3(TD-SCDMA × 2)

P/N: LMSP2PQK-857

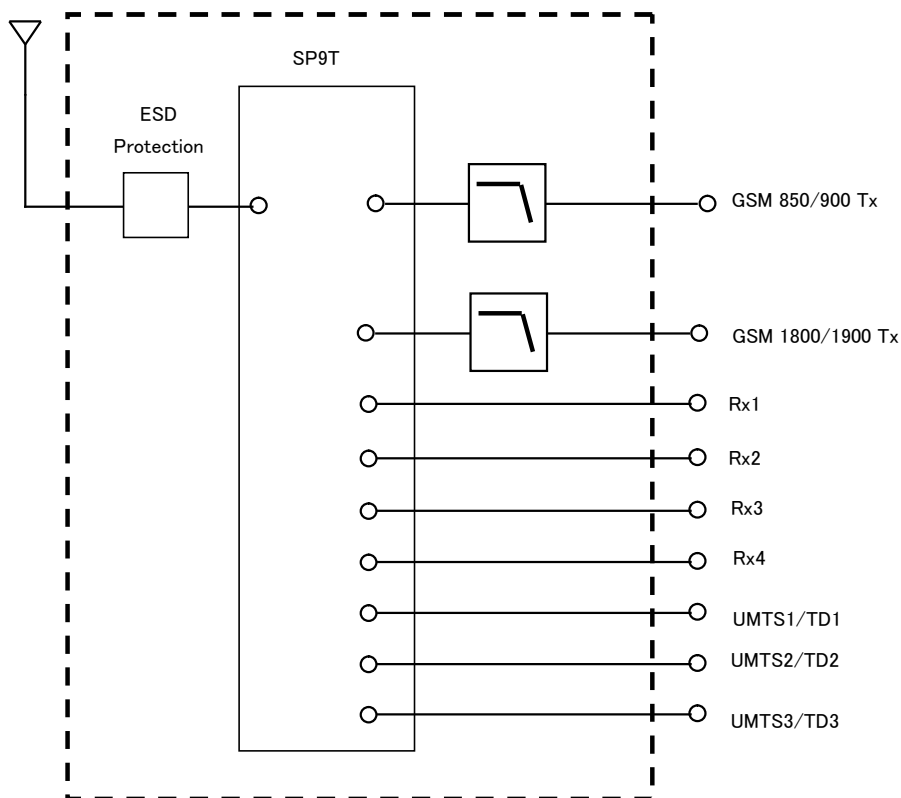
Feb. 10<sup>th</sup>. 2010

1. Part Number

Murata Part Number	LMSP2PQK-857
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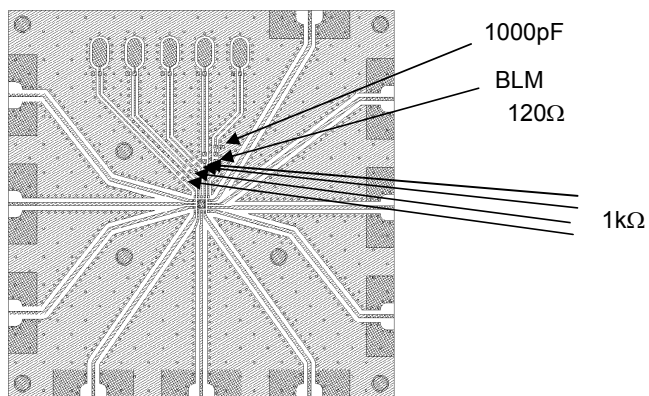
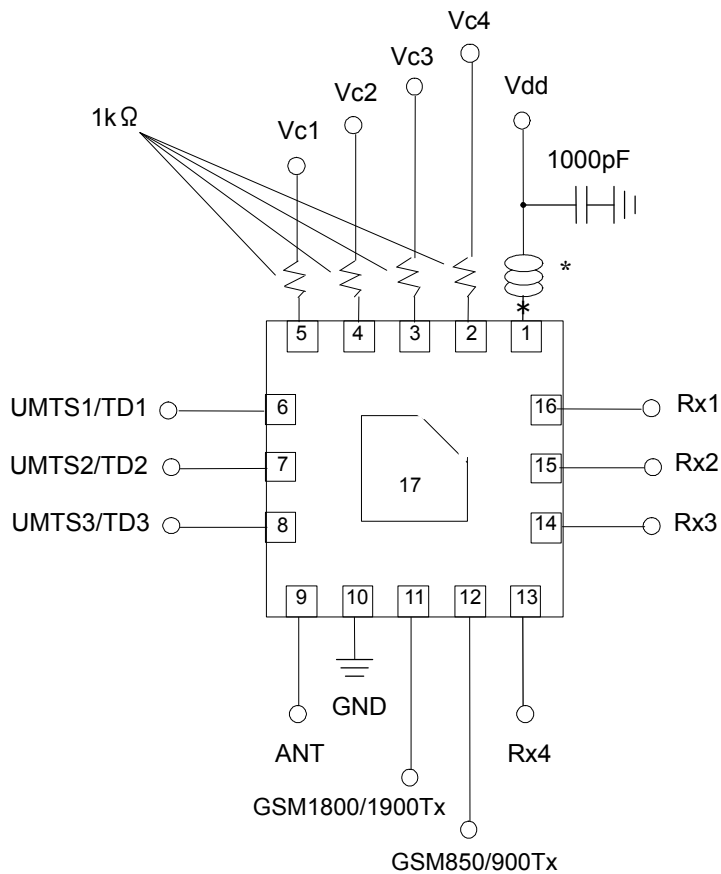
2. General Information

Operating temperature range		-30 °C ~ +85 °C
Storage temperature range		-30 °C ~ +85 °C
MSL		3
Component size		2.5 (typ.) x 2.5 (typ.) x 1.15 (max.) mm
Weight		19.2 mg
Power capacity	GSM850/900 Tx	35.0 dBm max
	GSM1800/1900 Tx	33.0 dBm max
	UMTS	30.0 dBm max

3. Block Diagram

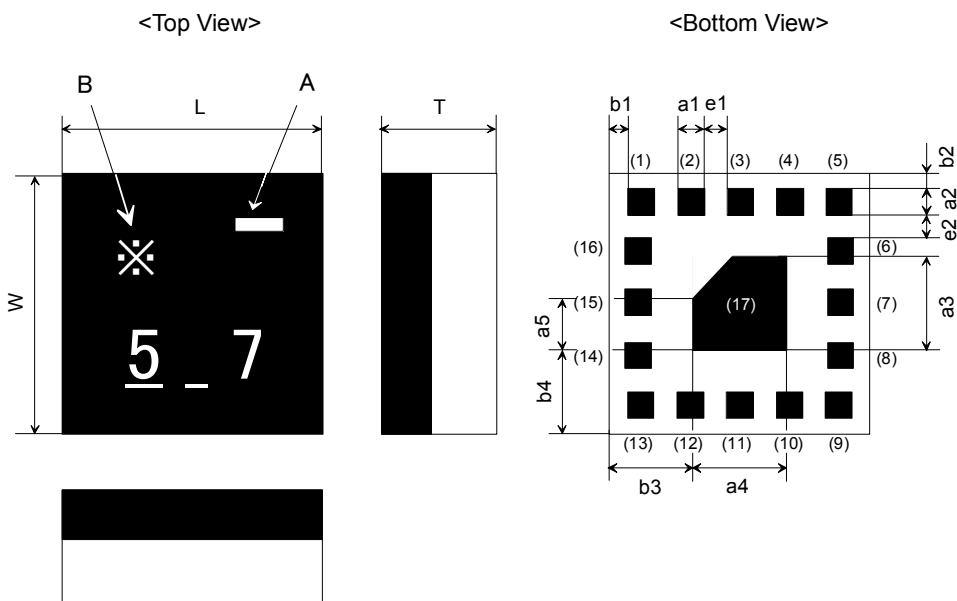
4. Evaluation Circuit & Evaluation Board

(\*)  
 Murata BLM15BB121SN1 or  
 Murata BLM03BB121SN1 is used.



All the technical data and Information contained herein are subject to change without prior notice  
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5. Dimension & Marking



(in: mm)

Mark	Meaning
A	Pin 1 Marking
B	Date Code (EIAJ)

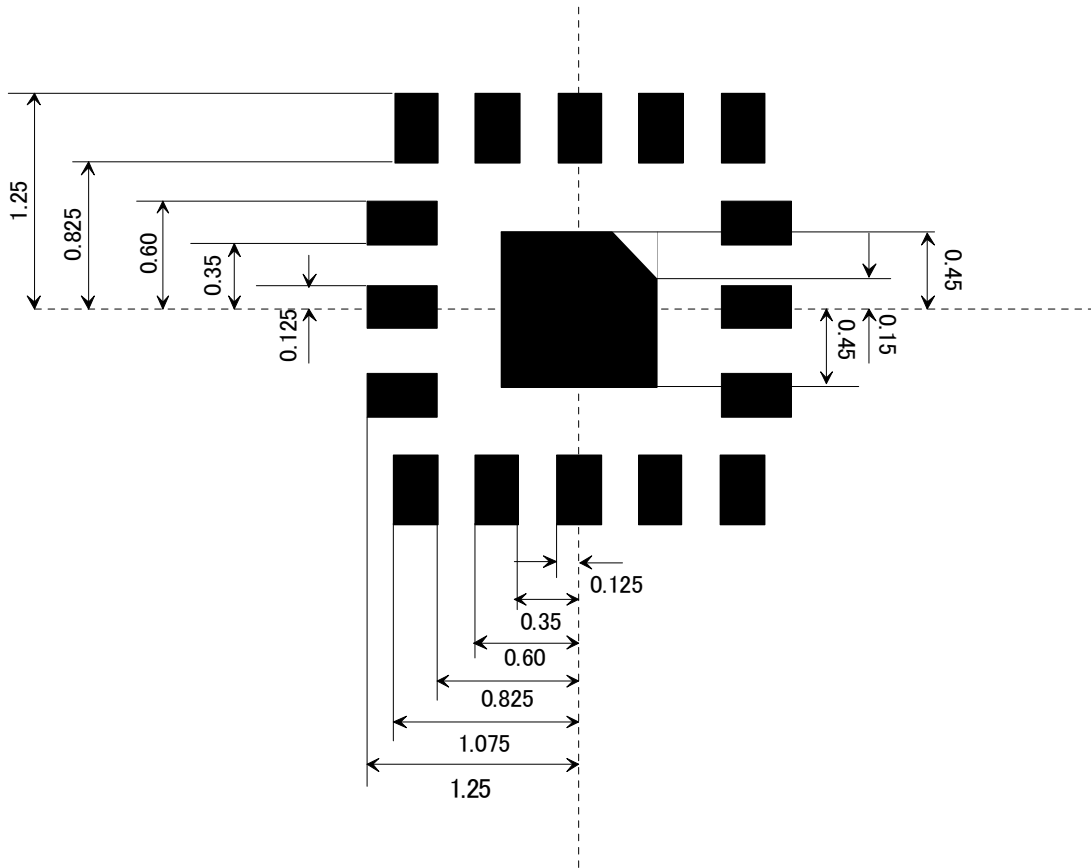
Mark	Dimensions	Mark	Dimensions
L	$2.5 \pm 0.2$	a5	$0.6 \pm 0.1$
W	$2.5 \pm 0.2$	b1	$0.175+0.200/-0.175$
T	1.15 max.	b2	$0.175+0.200/-0.175$
a1	$0.25 \pm 0.10$	b3	$0.8 \pm 0.2$
a2	$0.25 \pm 0.10$	b4	$0.8 \pm 0.2$
a3	$0.9 \pm 0.1$	e1	$0.225 \pm 0.100$
a4	$0.9 \pm 0.1$	e2	$0.225 \pm 0.100$

TERMINAL CONFIGURATION

Terminal No.	Terminal Name	Terminal No.	Terminal Name
(1)	Vdd	(10)	GND
(2)	Vc4	(11)	GSM1800/1900 Tx
(3)	Vc3	(12)	GSM850/900 Tx
(4)	Vc2	(13)	Rx4
(5)	Vc1	(14)	Rx3
(6)	UMTS1/TD1	(15)	Rx2
(7)	UMTS2/TD2	(16)	Rx1
(8)	UMTS3/TD3	(17)	GND
(9)	ANT	-	-

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6. Land pattern



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## 7. Electrical Characteristics (at -30 ~ +85 °C)

## &lt;GSM850/900 Band&gt;

Tx mode	Frequency Range (MHz)	ftl	824 - 915
	Insertion Loss (dB)	Tx - ANT	1.35 max. (at 25 °C)
			1.55 max. (at -30 ~ +85 °C)
	Attenuation (Absolute value) (dB)	Tx - ANT	25.0 min. at 2 x ftl MHz
			25.0 min. at 3 x ftl MHz
	V.S.W.R.	Tx	1.60 max.
	Isolation (dB)	Tx - Rx1	30.0 min.
		Tx - RX2	30.0 min.
		Tx - Rx3	30.0 min.
Tx - Rx4		30.0 min.	
Current Consumption (μA)		220 max.	
Harmonics (dBc)	Tx - ANT	-70.0 max.	

## &lt;GSM1800/1900 Band&gt;

Tx mode	Frequency Range (MHz)	ftH	1710 - 1910
	Insertion Loss (dB)	Tx - ANT	1.45 max. (at 25 °C)
			1.65 max. (at -30 ~ +85 °C)
	Attenuation (Absolute value) (dB)	Tx - ANT	25.0 min. at 2 x ftH MHz
			25.0 min. at 3 x ftH MHz
	V.S.W.R.	Tx	1.60 max.
	Isolation (dB)	Tx - Rx1	30.0 min.
		Tx - RX2	30.0 min.
		Tx - Rx3	20.0 min.
Tx - Rx4		20.0 min.	
Current Consumption (μA)		220 max.	
Harmonics (dBc)	Tx - ANT	-67.0 max.	

## &lt;GSM850/900/1800/1900 Rx Band&gt;

Rx mode	Frequency Range (MHz)	frl	869 - 960	
		frh	1805 - 1990	
	V.S.W.R.	ANT	1.70 max.	
Rx1 Rx2 Rx3 Rx4	Insertion Loss (dB)	ANT - Rx	frl 1.20 max. (at 25 °C) 1.40 max. (at -30 ~ +85 °C)	
			frh 1.55 max. (at 25 °C) 1.75 max. (at -30 ~ +85 °C)	
	Isolation (dB)	GSM850/900 Tx- ANT	ftl	20.0 min.
		GSM1800/1900 Tx- ANT	ftH	20.0 min.
	Current Consumption (μA)		220 max.	

## &lt;UMTS800/1800/2100/TD-SCDMA1900/2000 Band&gt;

Low Band	Frequency Range (MHz)	ful	824 - 894
	Insertion Loss (dB)	UMTS1/2/3 - ANT	0.90 max. (at 25 °C) 1.10 max. (at -30 ~ +85 °C)
	V.S.W.R.	UMTS1/2/3	1.60 max.
		ANT	1.60 max.
	Harmonics (dBc)	UMTS - ANT	-64.0 max.
Current Consumption (μA)			220 max.
High Band	Frequency Range (MHz)	fuh	1850 - 2170
	Insertion Loss (dB)	UMTS - ANT	1.15 max. (at 25 °C) 1.35 max. (at -30 ~ +85 °C)
	V.S.W.R.	UMTS1/2/3	1.60 max.
		ANT	1.60 max.
	Harmonics (dBc)	UMTS - ANT	-64.0 max.
	Isolation (dB)	UMTS1/2/3 - Rx1	30.0 min.
		UMTS1/2/3 - Rx2	30.0 min.
		UMTS1/2/3 - Rx3	20.0 min.
		UMTS1/2/3 - Rx4	20.0 min.
		UMTS1 - UMTS2	18.0 min.
UMTS2 - UMTS3		18.0 min.	
Current Consumption (μA)			220 max.

**CONTROL LOGIC**

Mode	Vdd	Vc1	Vc2	Vc3	Vc4
GSM850/900 Tx	2.55 ~ 3.00 V	H	L	L	L
GSM1800/1900 Tx	2.55 ~ 3.00 V	H	H	L	L
Rx1	2.55 ~ 3.00 V	L	L	L	L
Rx2	2.55 ~ 3.00 V	L	H	L	L
Rx3	2.55 ~ 3.00 V	L	L	H	L
Rx4	2.55 ~ 3.00 V	L	H	H	L
UMTS1/TD1	2.55 ~ 3.00 V	L	L	L	H
UMTS2/TD2	2.55 ~ 3.00 V	L	H	L	H
UMTS3/TD3	2.55 ~ 3.00 V	L	L	H	H

High : 1.4 - Vdd (V)

Low : 0 - 0.4 (V)

**SUPPLY VOLTAGE**

	Min	Typ	Max
Vdd	2.55		3.00
H	1.4		Vdd
L	0		0.4

NOTE : The above-mentioned values have been obtained according to our own measuring methods(testing jig : Fig.1,Zo=50 Ω) and may vary depending on the circuit, in which this component is actually incorporated.

You are, therefore, kindly requested to test the performance of this component incorporating in your set.

**Notice****Limitation of Applications:**

The product is designed and manufactured for consumer application only and is not available for any application listed below which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property.

- Aircraft equipment.
- Aerospace equipment
- Undersea equipment.
- Medical equipment.
- Transportation equipment (vehicles, trains, ships, etc.).
- Traffic signal equipment.
- Disaster prevention / crime prevention equipment.
- Application of similar complexity and/ or reliability requirements to the applications listed in the above.