

### GaAs IC High Power SPDT Switch

#### ■ Applications

AMPS, GPS, PCS, W-CDMA, TD-SCDMA, WiMAX  
and other RF applications.

#### ■ Features

- Positive Voltage Control
- Pin0.5dB (@+2.6V).....32dBm typ. @ 2GHz
- Low Insertion Loss .....0.35dB typ. @ 2GHz
- High Isolation .....40dB typ. @2GHz (Cellular high band tuned)
- Logic Function Included
- Small / Thin Package ..... 12pin Leadless Package  
(1.6mm×1.6mm×0.4mm|max, RoHS Compliant)
- MSL .....3

#### ■ Absolute Maximum Ratings

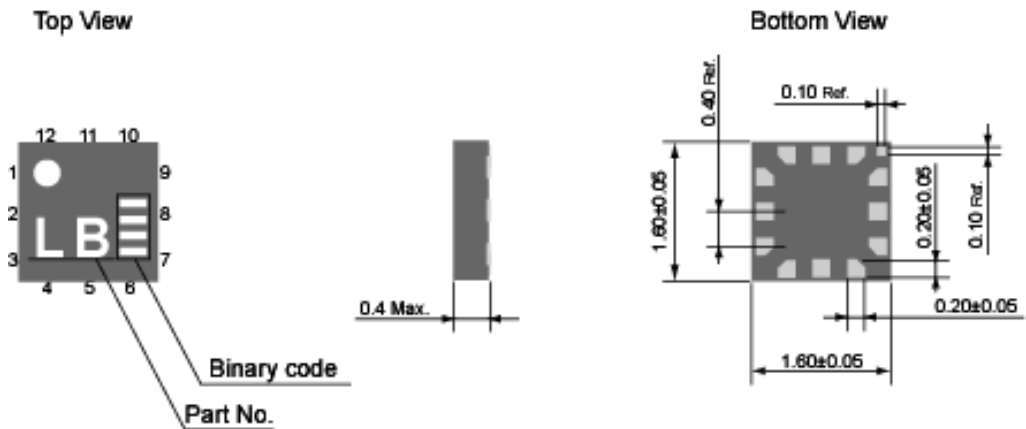
Symbol	Parameter	Conditions	Rating	Unit
V <sub>DD</sub>	Supply Voltage	T <sub>a</sub> = 25°C	4.0	V
V <sub>CTL</sub>	Control Voltage	T <sub>a</sub> = 25°C	V <sub>DD</sub>	V
P <sub>in</sub>	RF Input Power	T <sub>a</sub> = 25°C	32	dBm
T <sub>op</sub>	Operating Temperature	-	-40 to 85	°C
T <sub>stg</sub>	Storage Temperature	-	-55 to 150	°C

#### ■ Electrical Specifications (T<sub>a</sub>=25°C, V<sub>DD</sub>=2.6V, V<sub>CTL(H)</sub>=2.0V, V<sub>CTL(L)</sub>=0V)

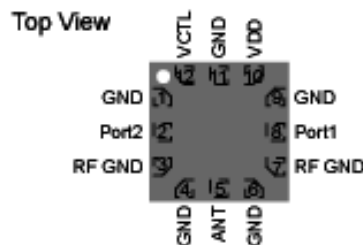
##### Cellular high band tuned (C4, C5=4pF)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I <sub>DD</sub>	Current Consumption	-	1	80	150	μA
f <sub>o</sub>	Operation Frequency	-	0.8	-	2.5	GHz
IL	Insertion Loss	ANT-Port1/2	0.05	0.35	0.6	dB
ISO	Isolation	ANT-Port1/2@1.0GHz	25.0	30.0	-	dB
		Port1-Port2@1.0GHz	25.0	30.0	-	dB
		ANT-Port1/2@2.0GHz	33.0	40.0	-	dB
		Port1-Port2@2.0GHz	25.0	30.0	-	dB
P <sub>in0.5dB</sub>	Input Power for 0.5dB Compression	ANT-Port1/2@2.0GHz	30.0	32.0	-	dBm

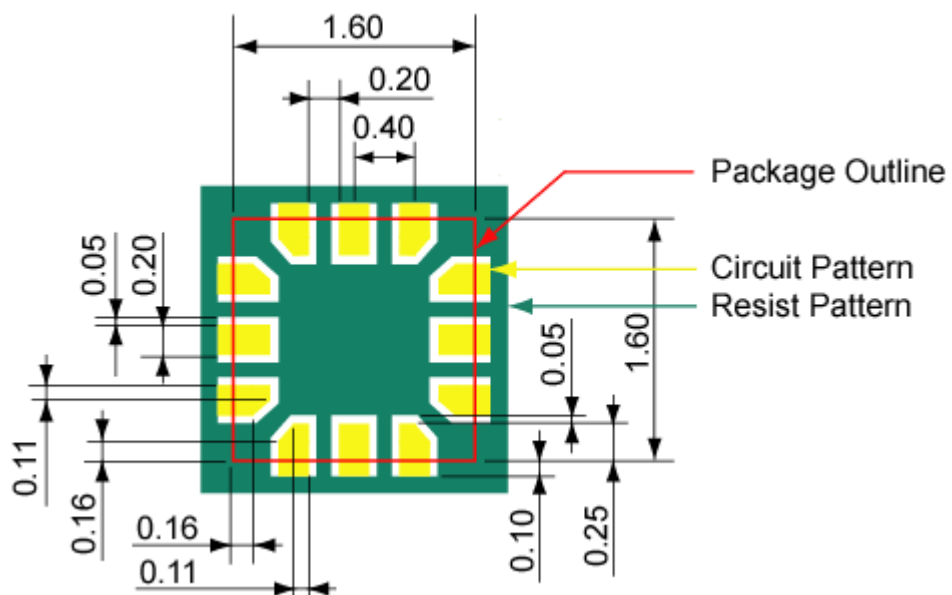
### Pin Connections



(in mm)



### Land Pattern



## XM0860ST-DL1201

DS0860ST-01A

### ■ Truth Table

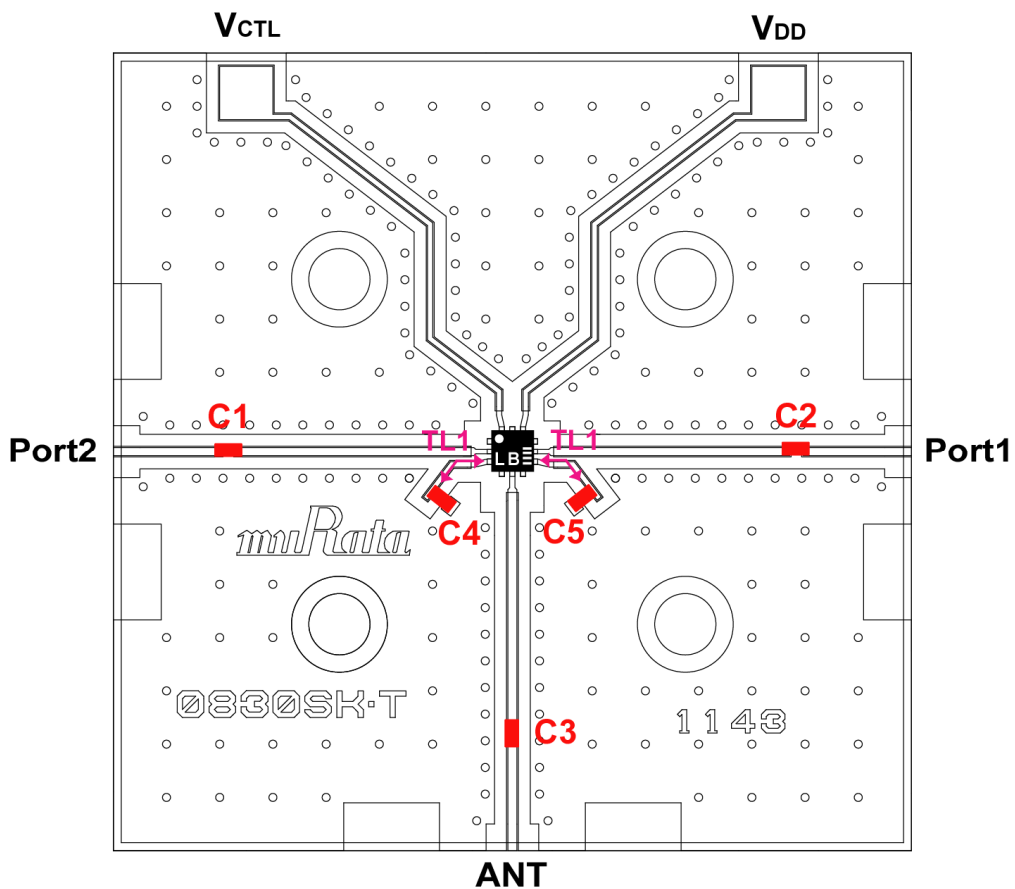
VDD=2.6V

ON PORT	VCTL
ANT-Port1	H
ANT-Port2	L

H: +2.0V

L: 0V

### ■ Evaluation Board



### Parts List

#### C1-C3 value

Frequency	Products	Value
0.8-3.0GHz	GRM155(Murata)	47 pF

#### C4,C5 value

Frequency	Products	Value
0.8-3.0GHz	GRM155(Murata)	4 pF

#### Substrate

Transmission Line: 50Ω

Material :FR4 ( $\epsilon_r = 4.4$ )

Size : 30mm x 30mm

Thickness : 0.2mm + Dummy 0.4mm

#### TL1

Width: 0.2mm

Length: 2mm

■ Typical Performance Data (On Evaluation Board, Fixture's loss de-embedded)

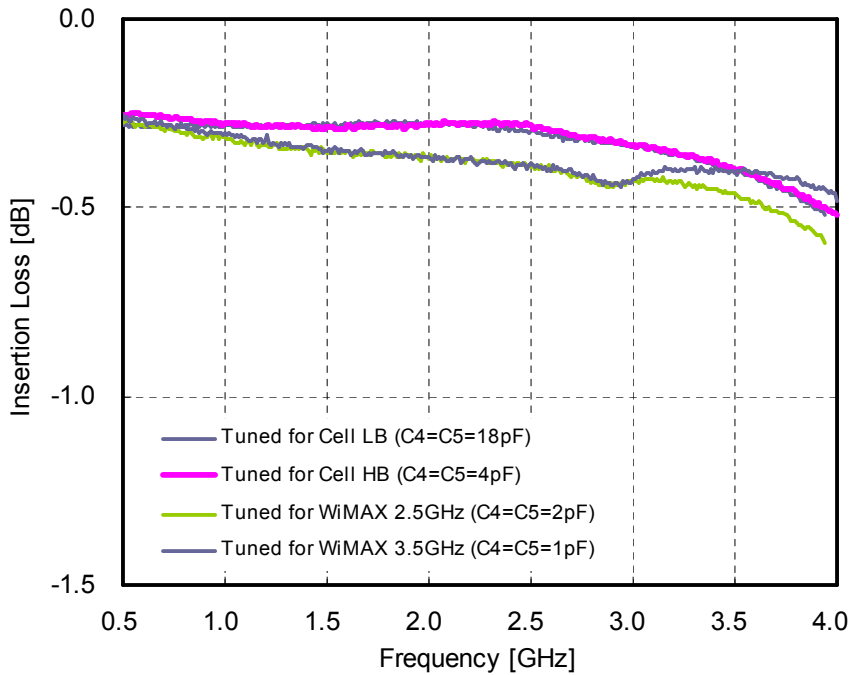


Fig.1 Insertion Loss vs Frequency (VCTL(H)=2.0V)

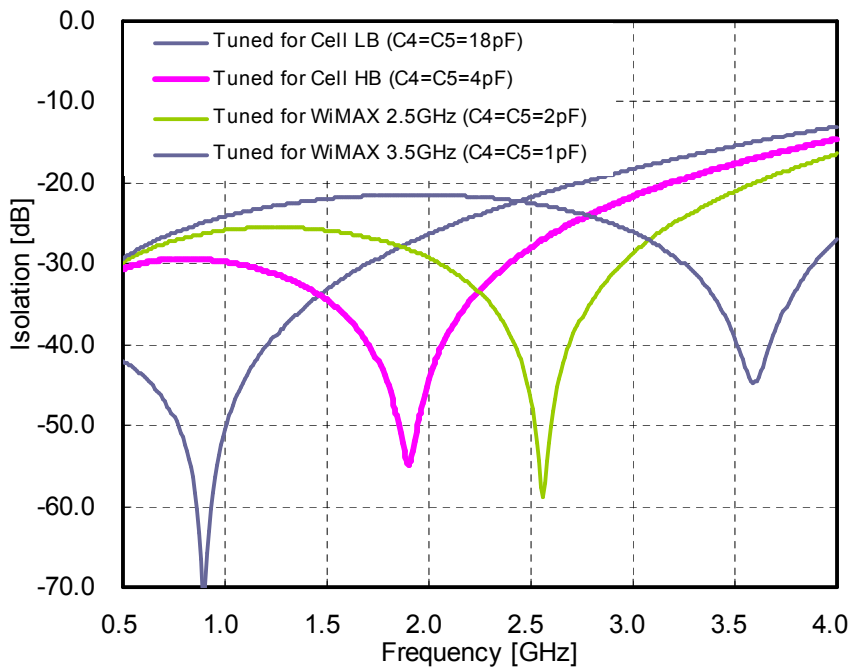


Fig.2 Ant to Port Isolation vs Frequency (VCTL(H)=2.0V)

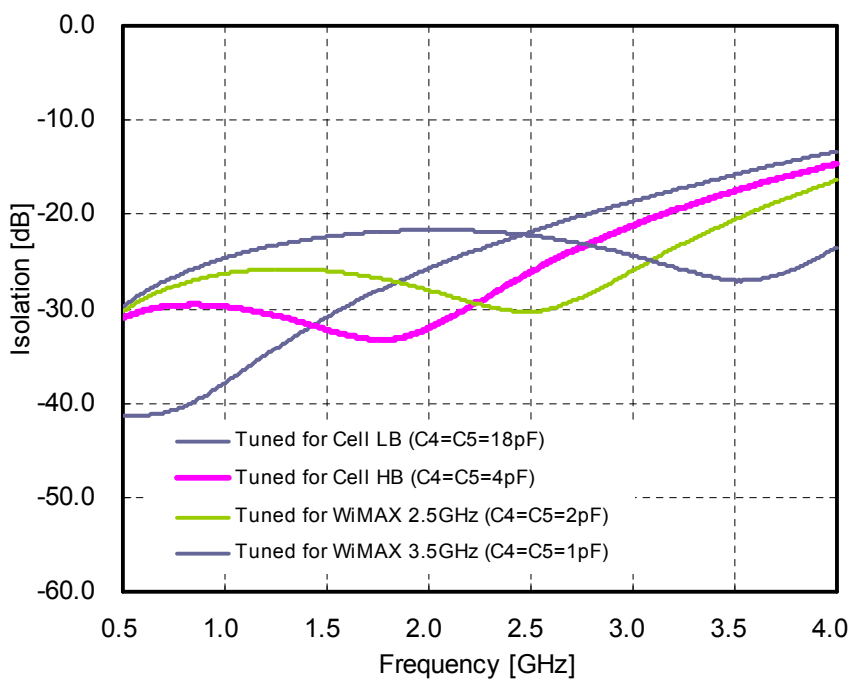
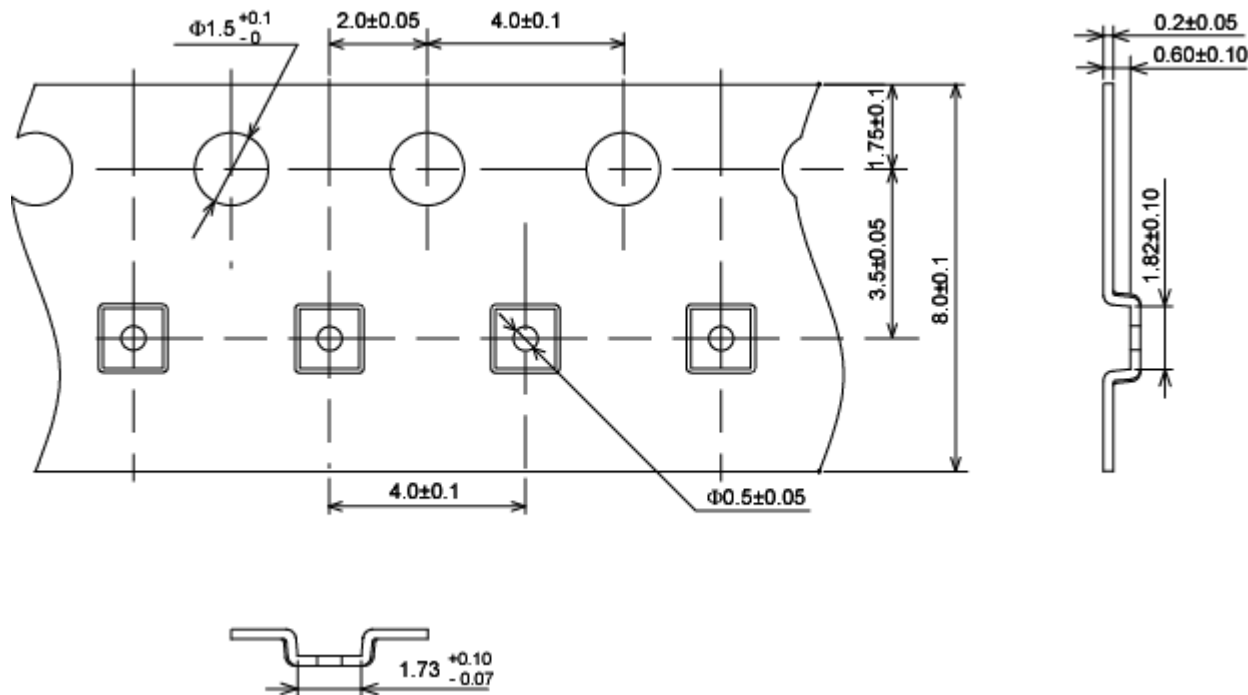


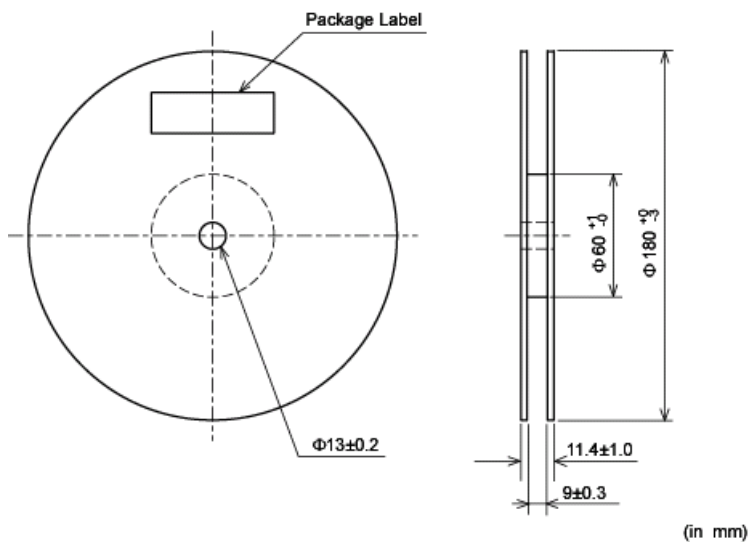
Fig.3 Port to Port Isolation vs Frequency (VCTL(H)=2.0V)

### ■ Taping Specification

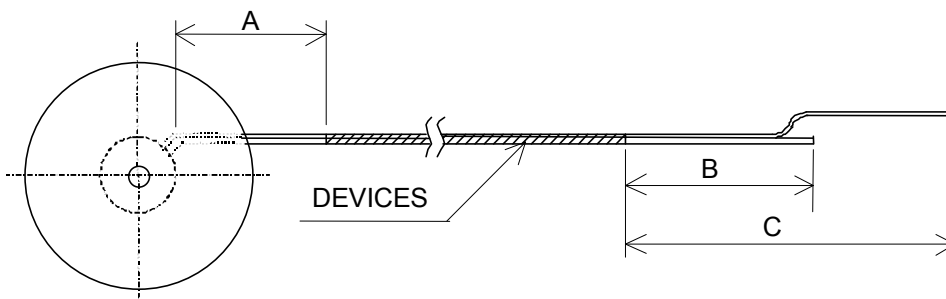
Tape Dimensions



Reel Dimensions

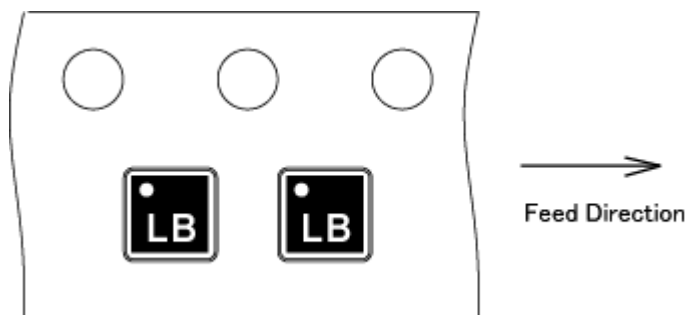


### Leader and Trailer Dimensions



Symbol	Items	Ratings (mm)
A	Trailer	160 ~
B	Leader with empty cavities	100 ~
C	Leader	400 ~

### Device Dimensions



Packing Unit  
5000pcs. / reel

**CAUTION -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.