

GaAs IC High Power SPDT Switch for 0.8-3.0GHz

■ Applications

GSM, UMTS, AMPS, PCS, DCS, W-CDMA, TD-SCDMA
and other RF applications.

■ Features

- Positive Voltage Control
- Pin0.1dB (@+2.6V) 38dBm typ.
- Low Insertion Loss 0.40dB @0.9GHz / 0.40dB @2GHz
- High Isolation..... 30dB @ 0.9GHz / 30dB @2GHz
- Logic Function Included
- Small / Thin Package 12pin Leadless Package
(2.5mm × 2.0mm × 0.5mm, RoHS Compliant)
- MSL 3

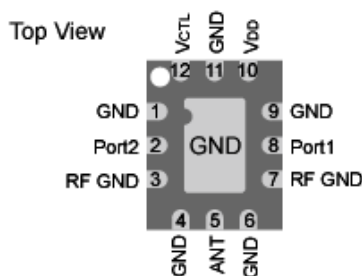
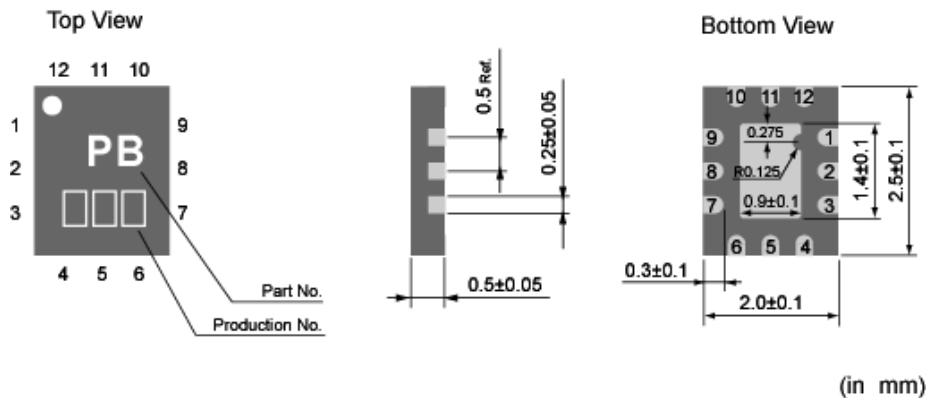
■ Absolute Maximum Ratings

Symbol	Parameter	Conditions	Rating	Unit
V _{DD}	Supply Voltage	T _a = 25°C	1.8 to 4.0	V
V _{CTL(H)}	Control Voltage (High)	T _a = 25°C, V _{CTL} ≤ V _{DD}	1.8 to 4.0	V
V _{CTL(L)}	Control Voltage (Low)		-0.2 to 0.2	V
Pin	RF Input Power	T _a = 25°C	38	dBm
Top	Operating Temperature	-	-40 to 85	°C
Tstg	Storage Temperature	-	-55 to 150	°C

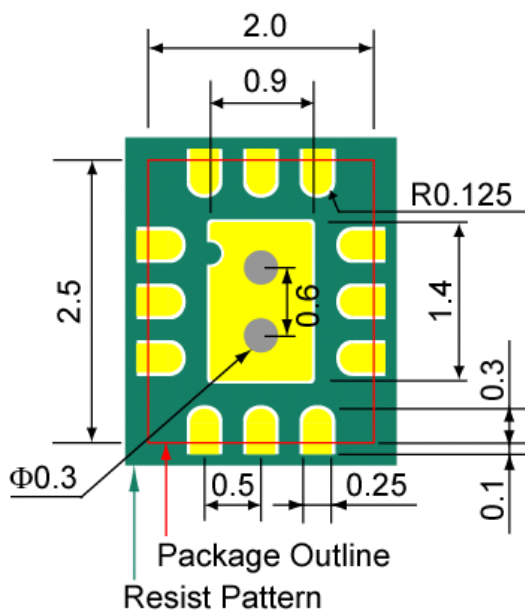
■ Electrical Specifications (T_a=25°C, V_{DD}=2.6V, V_{CTL(H)}=1.8V, V_{CTL(L)}=0V)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _{DD}	Current Consumption	-	-	80	200	μA
f ₀	Operation Frequency	-	0.8	-	2.5	GHz
IL	Insertion Loss	ANT-Port@0.9GHz	-	0.4	0.6	dB
		ANT-Port@2.0GHz	-	0.4	0.6	dB
ISO	Isolation	Port-Port@0.9GHz	25	30	-	dB
		Port-Port@2.0GHz	-	30	-	dB
Pin0.5dB	Input Power for 0.5dB Compression	ANT-Port@2.0GHz	35	38	-	dBm
2f ₀ 3f ₀	2 nd & 3 rd Harmonics	+35dBm@0.9GHz	-	83	-	dBc
		+33dBm@2.0GHz	-	74	-	dBc

■ Pin Connections



■ Land Pattern



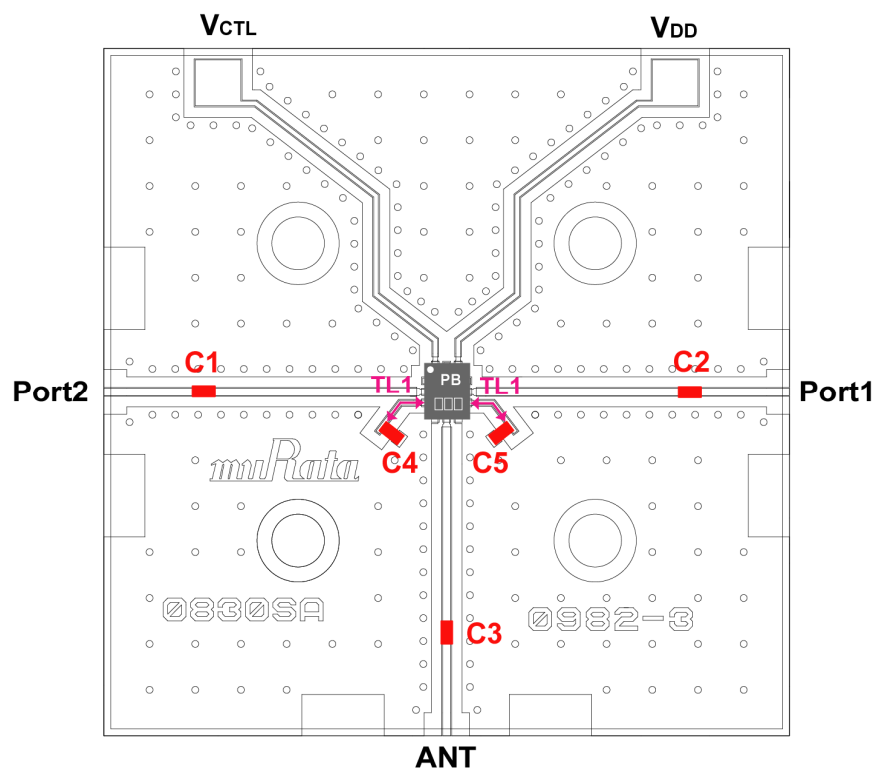
■ Truth Table

ON PORT	V _{CTL}
ANT-Port1	H
ANT-Port2	L

H: 1.8V to 4.0V (V_{DD}), 1.8V to 4.0V (V_{CTL})

L: 0V

■ Evaluation Board



Parts List

Part No.	Products	Value
C1-C3	GRM155(Murata)	47 pF
C4, C5		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)**

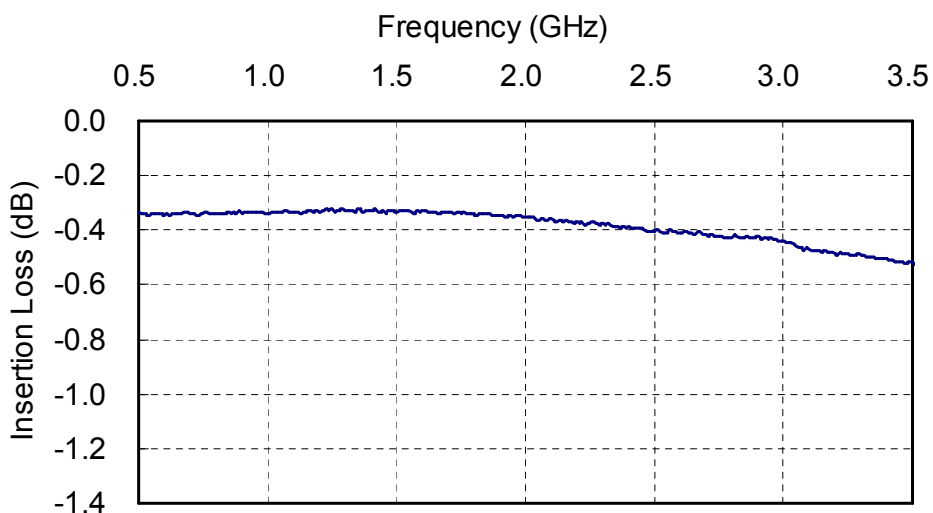


Fig.1 Insertion Loss vs. Frequency

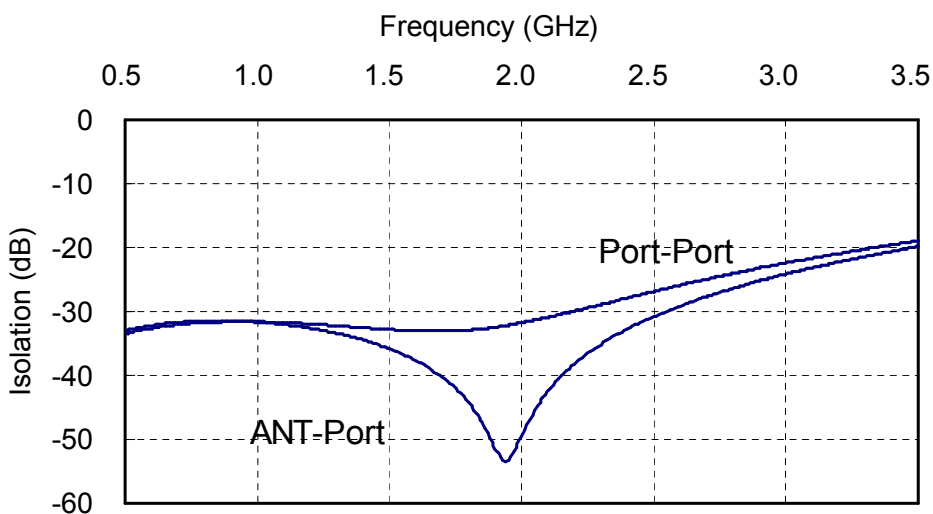


Fig.2 Isolation vs. Frequency

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

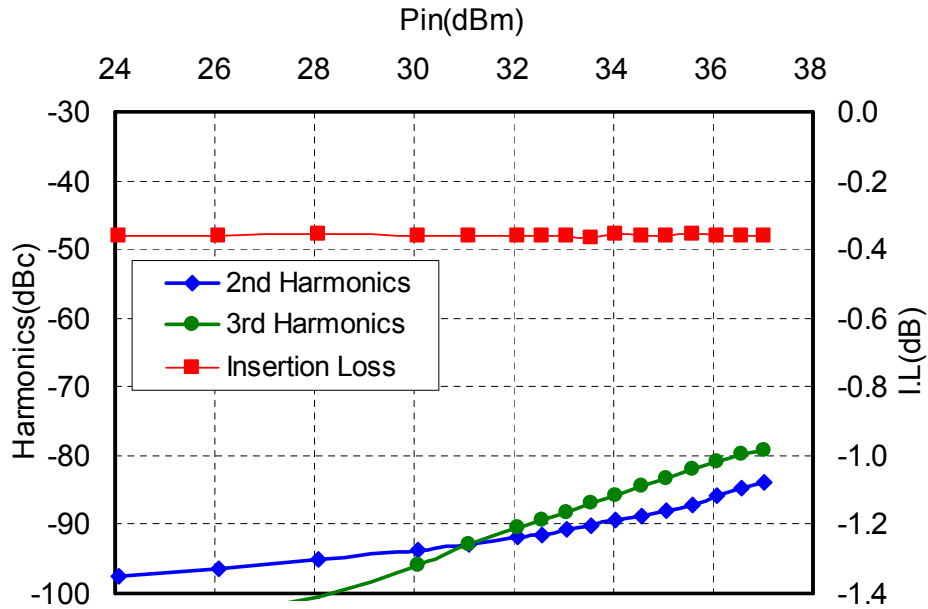


Fig.3 Output Power and Insertion Loss vs. Input Power (f=0.9GHz)

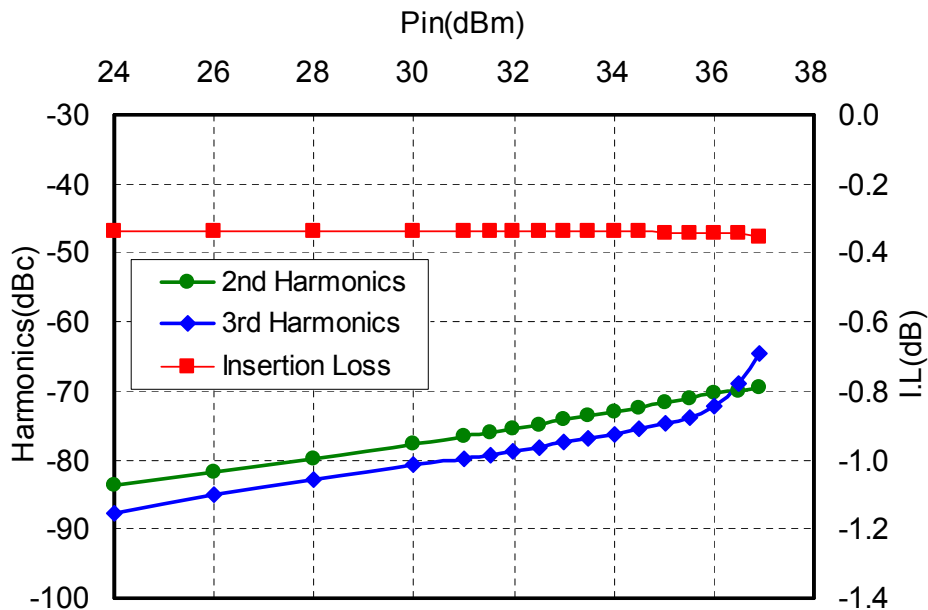
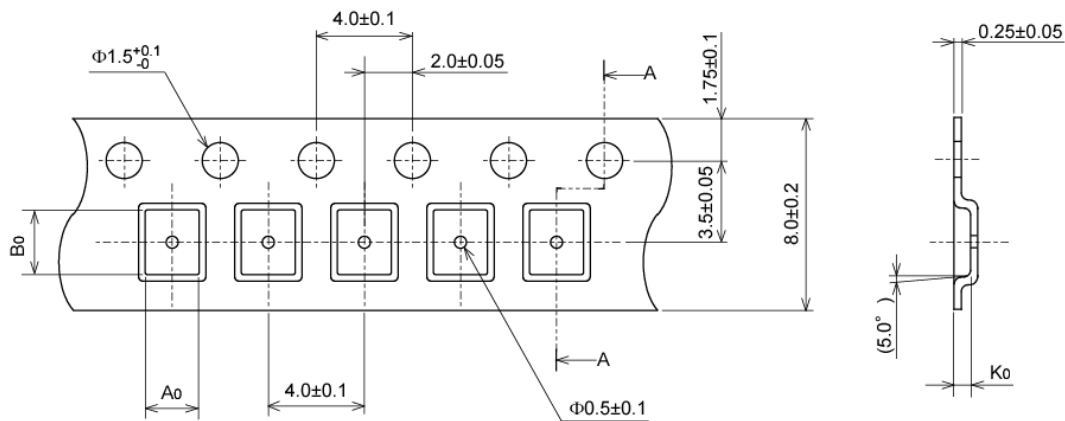


Fig.4 Output Power and Insertion Loss vs. Input Power (f=2.0GHz)

■ Taping Specification

Tape Dimensions



A-A Section

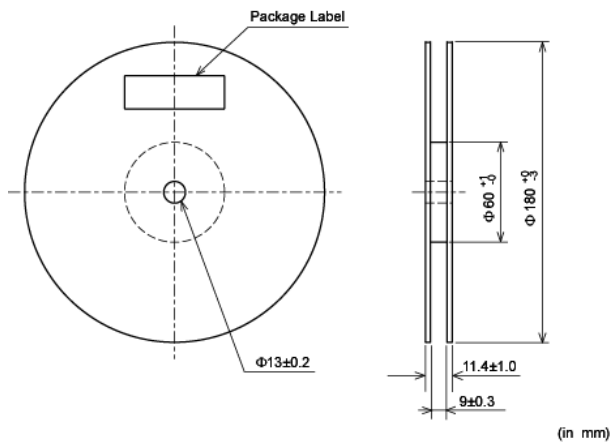
$A_0 = 2.25 \pm 0.05$ mm
 $B_0 = 2.70 \pm 0.05$ mm
 $K_0 = 0.65 \pm 0.05$ mm

Notes :

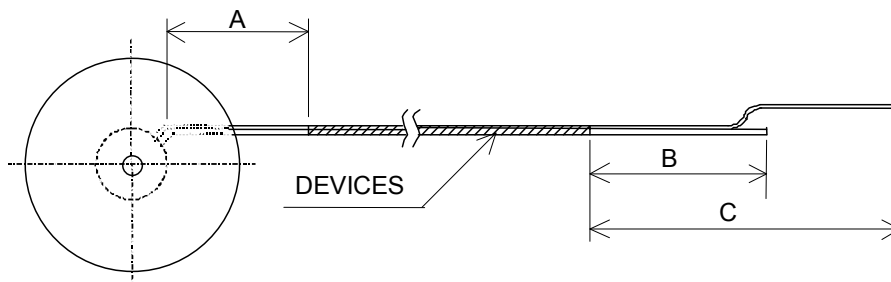
1. The radius (R) is 0.3mm max
2. Cumulative tolerance of 10 pitches of the sprocket hole is ± 0.2 mm

[in : mm]

Reel Dimensions

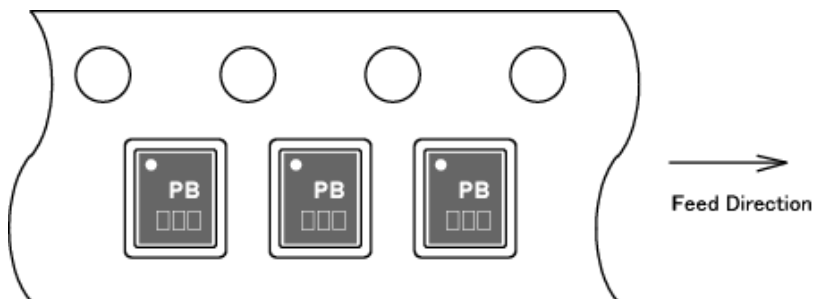


Leader and Trailer Dimensions



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

Device Dimensions



Packing Unit
3000pcs / 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.