

GaAs 2bit Control High Power SP4T Switch for 0.8~3.0GHz

□ **Applications**

Cell, PCS, AWS, W-CDMA, TD-SCDMA, WiMAX
and other RF applications.

□ **Features**

- Positive Voltage Control +1.3Vmin.
- Low Insertion Loss 0.30dBtyp. @1.0GHz
- High Isolation 28.0dBtyp. @1.0GHz
- Small / Thin Package 16 pin Leadless Package (3mm×3mm×0.55mm|max, RoHS Compliant)
- MSL 3

□ **Absolute Maximum Ratings**

Symbol	Parameter	Conditions	Rating	Unit
VDD	Control Voltage	Ta = 25°C	2.5 to 4.0	V
VCTL(H)	Control Voltage (High)	Ta = 25°C, VCTL ≤ VDD	1.3 to 4.0	V
VCTL(L)	Control Voltage (Low)		-0.2 to 0.4	V
Pin	RF Input Power	Ta = 25°C VCTL(H) = 1.8V, VCTL(L) = 0V	+36.0	dBm
Top	Operating Temperature	-	-40 to 85	°C
Tstg	Storage Temperature	-	-55 to 150	°C

XM0830SL-BL1701

DS0830SL-01-A

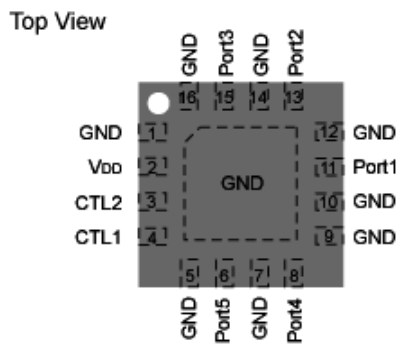
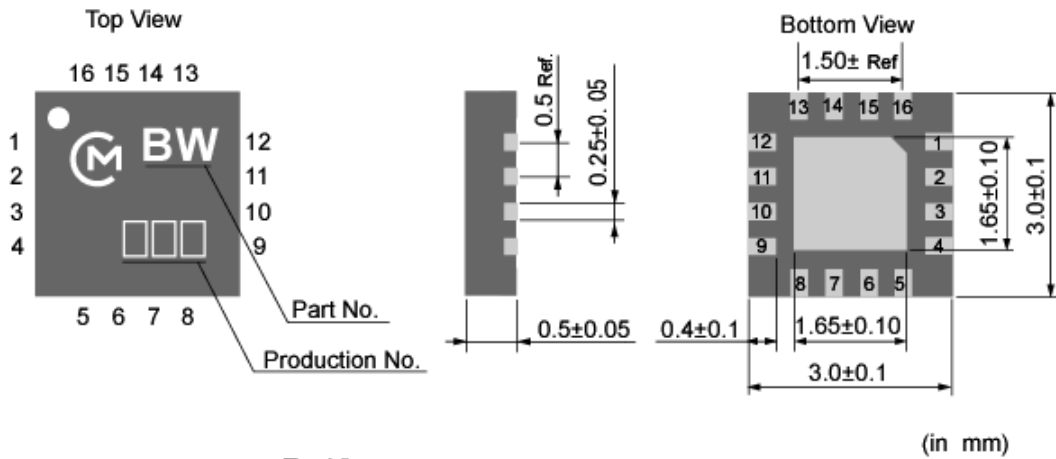
□ **Electrical Specifications (Ta=25°C, VDD=2.6V, VCTL(H)=1.8V, VCTL(L)=0V)**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _{DD}	Current Consumption	Either State	-	200	400	μA
f _o	Operation Frequency	-	0.8	-	3.0	GHz
IL	Insertion Loss (Port1-Port2,3,4,5)	0.8~1.0GHz	-	0.30	0.50	dB
		1.0~2.0GHz	-	0.40	0.60	dB
		2.0~3.0GHz	-	0.50	0.70	dB
ISO	Isolation (Port1-Port2,3,4,5)	0.8~1.0GHz	25.0	28.0	-	dB
		1.0~2.0GHz	20.0	23.0	-	dB
		2.0~3.0GHz	17.0	20.0	-	dB
P _{in 0.5dB}	Input Power for 0.5dB Compression	2.0GHz	33.0	36	-	dBm

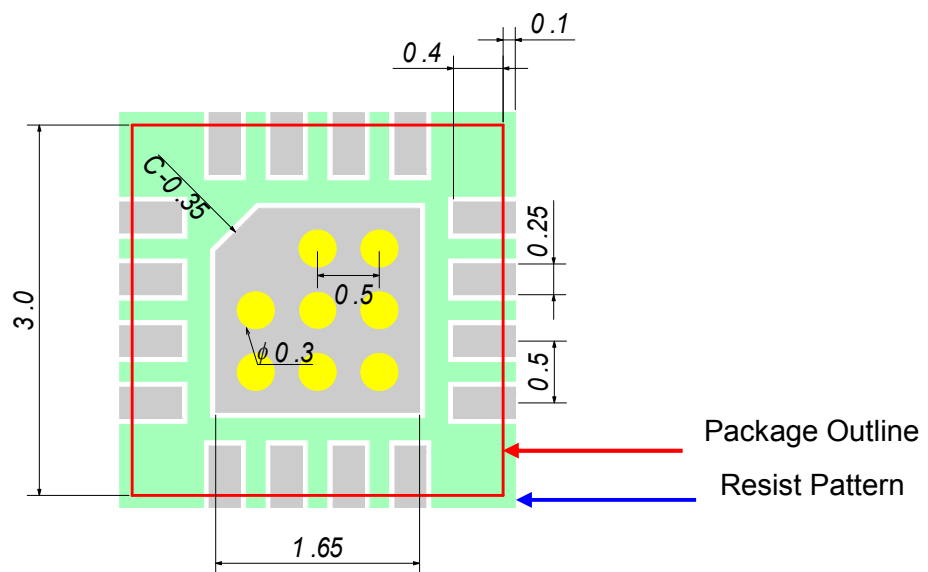
□ **Linearity Measurement Data (Ta=25°C, VDD=2.6V, VCTL(H)=1.8V, VCTL(L)=0V)**

Symbol	Parameter	Conditions	Typ.	Unit
IIP2	Input 2nd Order Intercept Point (Port1-Port2,3,4,5)	Cell Band:881MHz f ₁ =837MHz, P _{in} =26dBm f ₂ =1718MHz, P _{in} =-20dBm(Jammer)	116	dBm
		PCS Band:1965MHz f ₁ =1885MHz, P _{in} =26dBm f ₂ =3850MHz, P _{in} =-20dBm(Jammer)	108	dBm
		UMTS/AWS Band:2132MHz f ₁ =1733MHz, P _{in} =26dBm f ₂ =3865MHz, P _{in} =-20dBm(Jammer)	108	dBm
TBR	Triple Beat Rate (Port1-Port2,3,4,5)	Cell Band:880MHz f ₁ =835MHz, P _{in} =21.5dBm f ₂ =836MHz, P _{in} =21.5dBm f ₃ =881MHz, P _{in} =-30dBm(Jammer)	88	dBc
		PCS Band:1959MHz f ₁ =1880MHz, P _{in} =21.5dBm f ₂ =1881MHz, P _{in} =21.5dBm f ₃ =1960MHz, P _{in} =-30dBm(Jammer)	85	dBc
		UMTS/AWS Band:2131MHz f ₁ =1732MHz, P _{in} =13.5dBm f ₂ =1733MHz, P _{in} =13.5dBm f ₃ =2132MHz, P _{in} =-30dBm(Jammer)	97	dBc

□ Package Outline and Pin Connections



□ Land Pattern

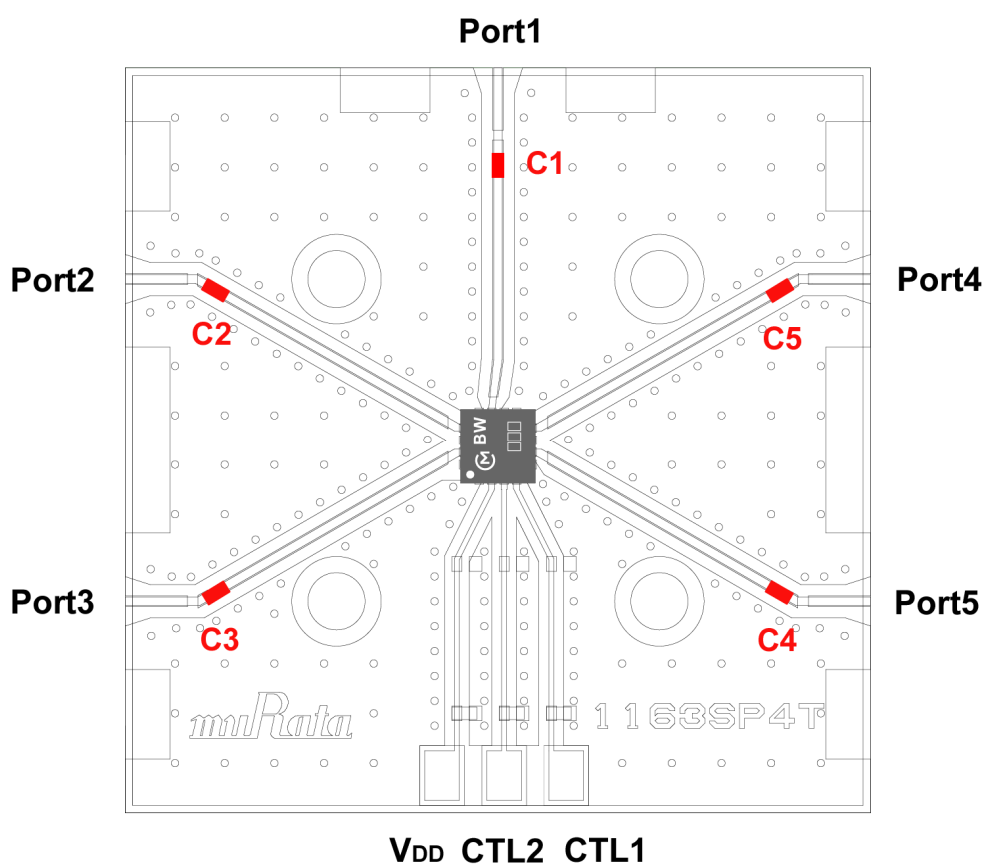


□ Truth Table

Path	V _{DD}	CTL1	CTL2
Port1-Port2	H	L	L
Port1-Port3	H	H	L
Port1-Port4	H	L	H
Port1-Port5	H	H	H

H: 2.5 to 4.0V(V_{DD}), 1.3 to V_{DD}(CTL)
 L: 0V

□ Evaluation Board



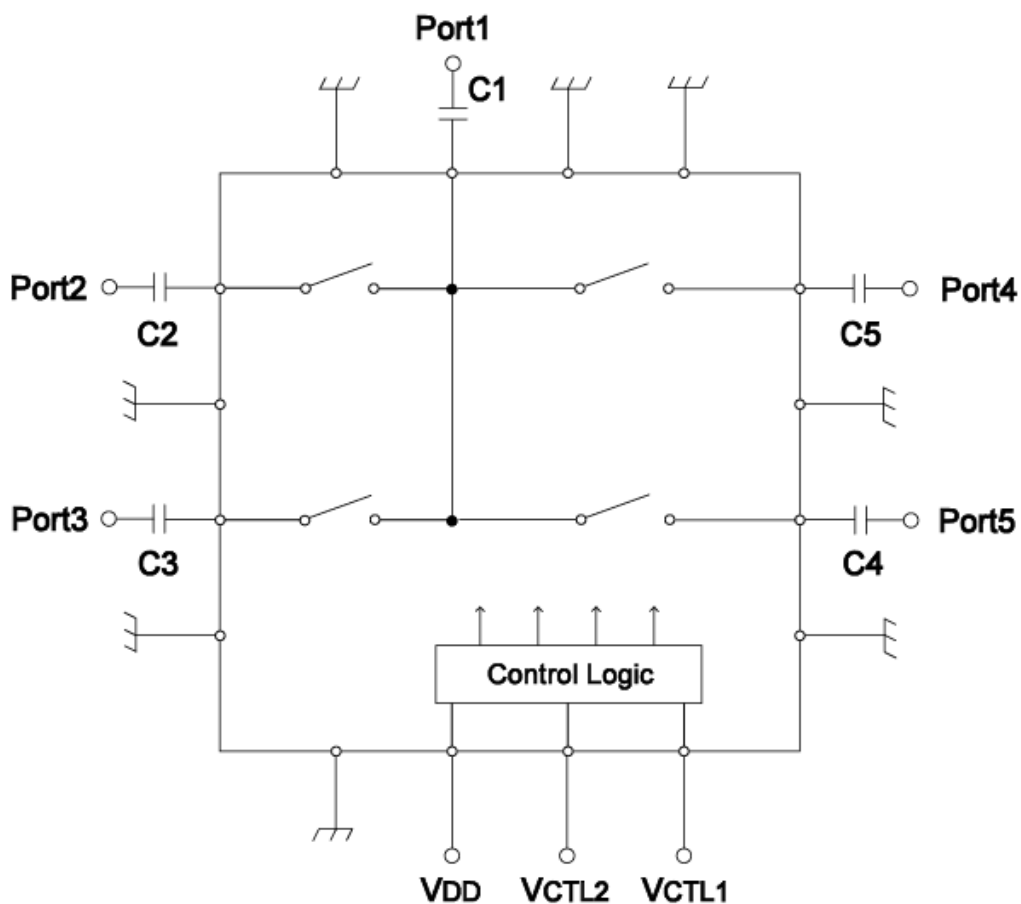
Parts List

Part No.	Products	Value
C1-C5	GRM155(Murata)	47 pF

Substrate

Transmission Line: 50Ω
 Material :FR4 ($\epsilon_r = 4.4$)
 Size : 30mm x 30mm
 Thickness : 0.2mm + Dummy 0.4mm

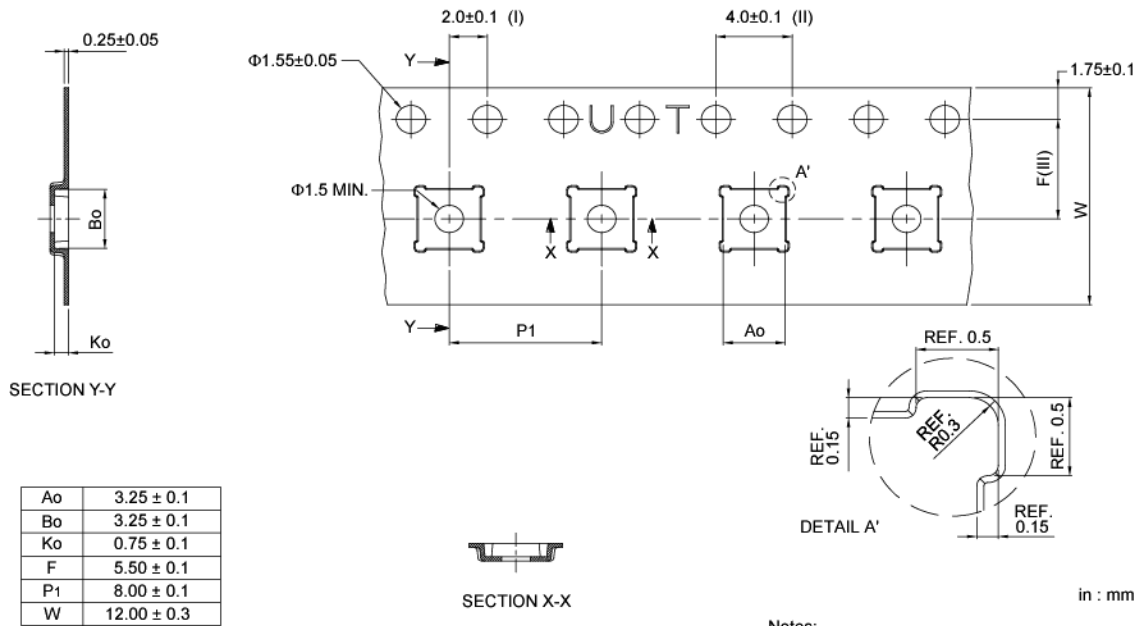
□ Evaluation Circuit



*Note: C1,C2,C3,C4,C5: must be supplied as DC blocking cap.

□ Taping Specification

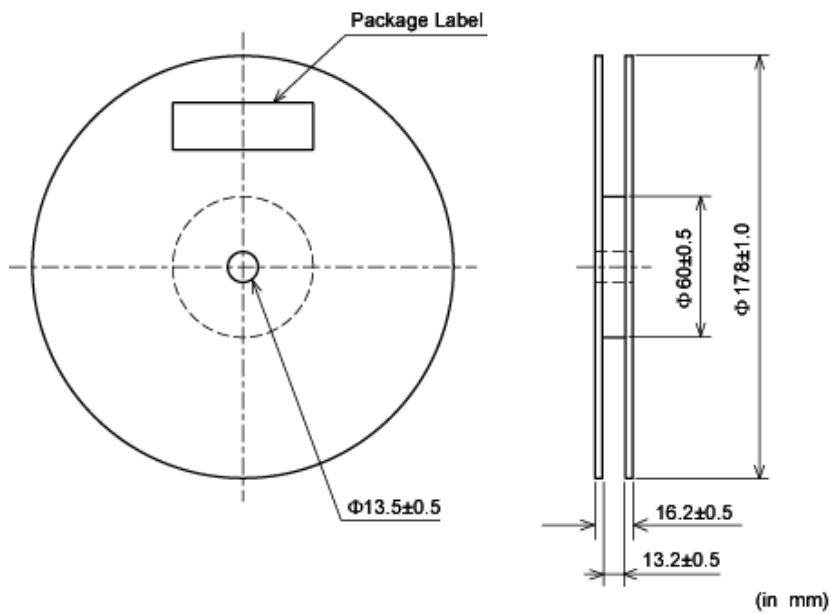
Tape Dimensions



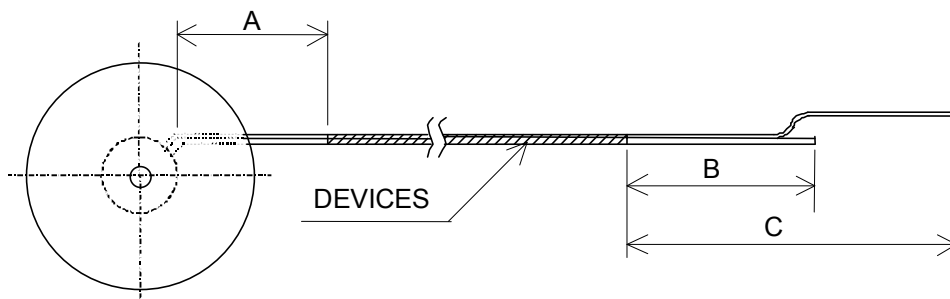
Notes:

- (I) Measured from centerline of sprocket hole to centerline of pocket.
- (II) Cumulative tolerance of 10 sprocket hole is ±0.20.
- (III) Measured from centerline of sprocket hole to centerline of pocket.
- (IV) Material: Conductive Polystyrene.

Reel Dimensions

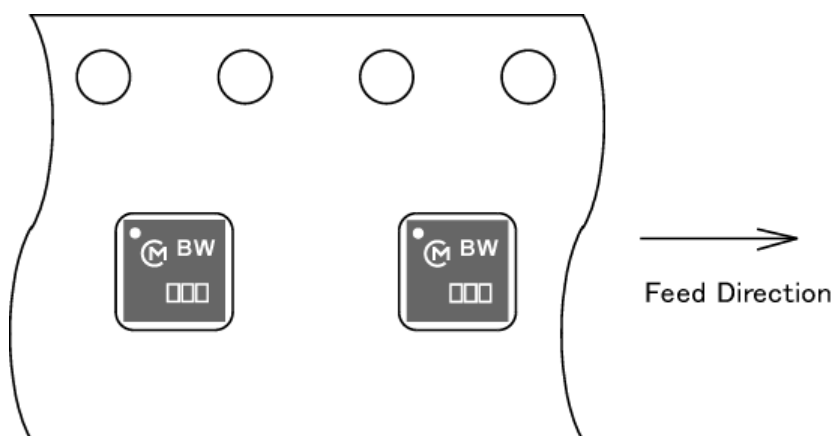


Leader and Trailer Dimensions



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

Device Dimensions



Packing Unit
2000pcs / 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.