

PRELIMINARY DATA SHEET

XM2458SF-AL0901 Ver. 6.00

GaAs DPDT SWITCH MMIC for 2.4GHz and 5GHz Wireless Communication

■ Applications

Typical applications are 2.4GHz and 5GHz WLAN systems that have a main antenna and a diversity antenna for transmission and receiver.

■ Features

Positive Low Control Voltage+3.0V

Low Insertion LossIL=0.9 dB typ.@4.9~5.875GHz

Small / Thin Package8 pin Leadless Package (2mm x 2mm x 0.55mm, RoHS Compliant)

MSL3

■ Absolute Maximum Ratings

Symbol	Parameter	Conditions	Rating	Unit
VCTL(H)	Control Voltage (High)	Ta = 25°C , Pin ≤ 31dBm	4	V
VCTL(L)	Control Voltage (Low)	Ta = 25°C	0	V
Pin	RF Input Power	Ta = 25°C , 2.5 ≤ VCTL(H)-VCTL(L) ≤ 3.8V	32	dBm
Top	Operating Temperature	-	-40 to +85	°C
Tstg	Storage Temperature	-	-55 to +150	°C

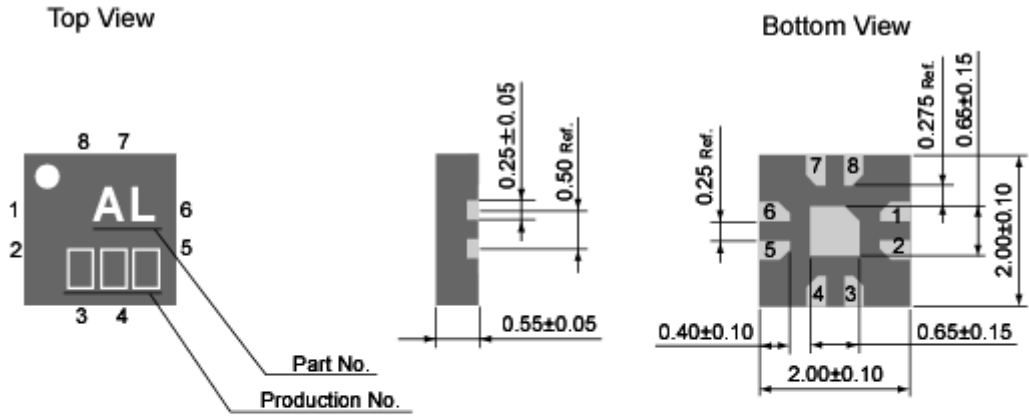
■ Electrical Specifications (Ta=25°C, VCTL(H)=3.0V, VCTL(L)=0V)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
VCTL	Control Voltage	-	-	3.0	-	V
ICTL	Control Current	Either State	-	-	10	μA
f _o	Operation Frequency	-	2.4	-	2.5	GHz
IL	Insertion Loss	Port1-ANT1, Port1-ANT2 Port2-ANT1, Port2-ANT2	-	0.7	1.0	dB
ISO	Isolation	Port1-Port2, ANT1-ANT2 Port1-ANT1, Port1-ANT2 Port2-ANT1, Port2-ANT2	23	27	-	dB
f _o	Operation Frequency	-	4.9	-	5.875	GHz
IL	Insertion Loss	Port1-ANT1, Port1-ANT2 Port2-ANT1, Port2-ANT2	-	0.9	1.3	dB
ISO	Isolation	Port1-Port2, ANT1-ANT2	15	18	-	dB
		Port1-ANT1, Port1-ANT2 Port2-ANT1, Port2-ANT2	17	20	-	dB
P _{in1dB}	Input Power for 1dB Compression	Port1-ANT1, Port1-ANT2 Port2-ANT1, Port2-ANT2	30	32	-	dBm

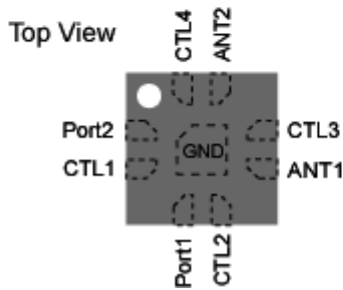
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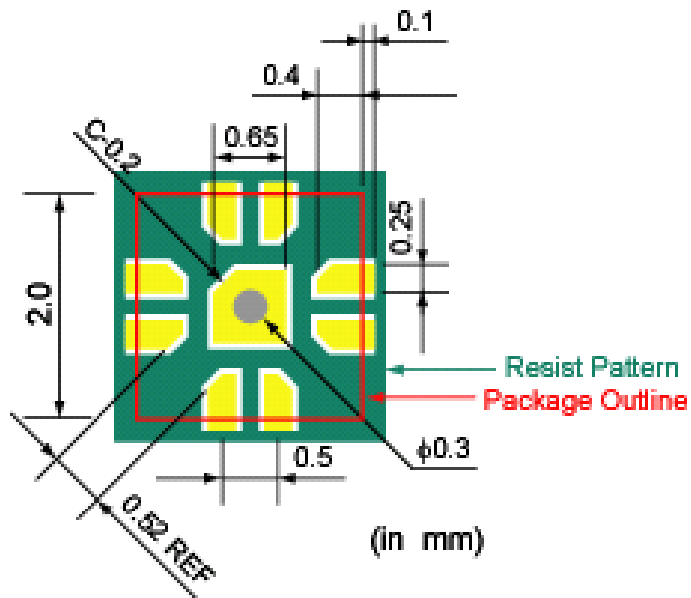
■ Package Outline and Pin Connections



(in mm)



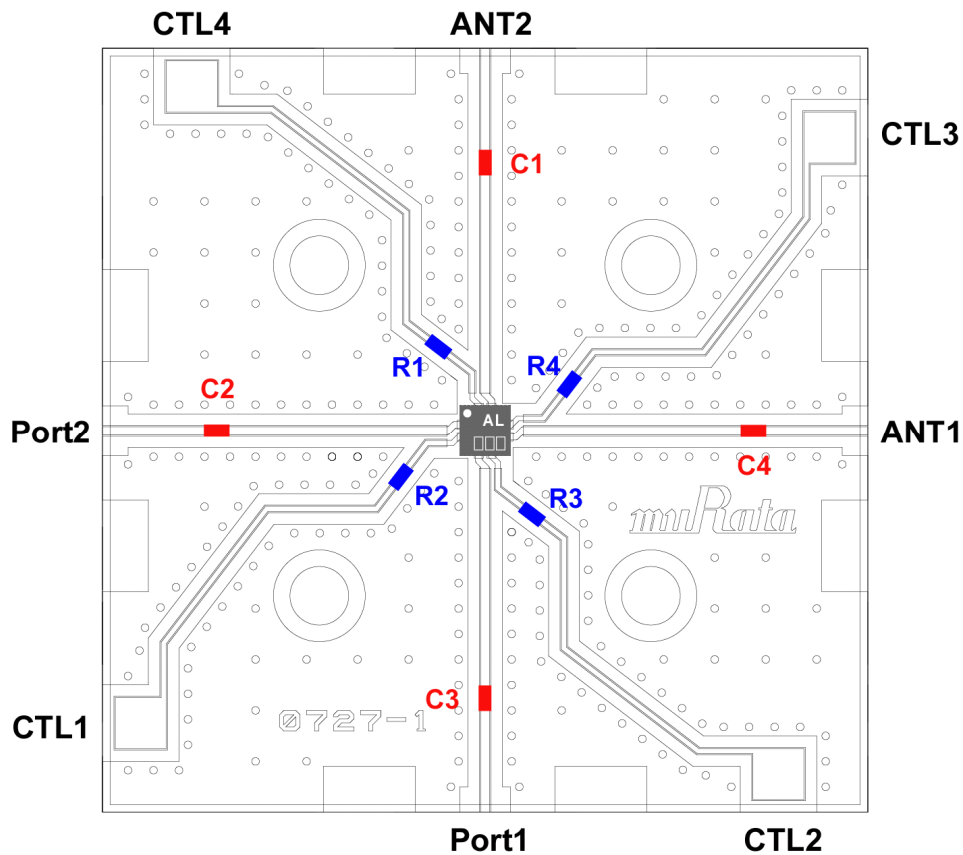
■ Land Pattern



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■ Evaluation Board



Parts List

Part No.	Products	Value
R1-R4	MCR01 (Rohm)	100Ω
C1-C4	GRM155(Murata)	100pF

Substrate

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

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■ Truth Table 1

Path	CTL1	CTL2	CTL3	CTL4
Port2-ANT2	H*	L*	L*	L*
Port1-ANT1	L*	H*	L*	L*
Port2-ANT1	L*	L*	H*	L*
Port1-ANT2	L*	L*	L*	H*

* : H....3V

L.....0V

■ Truth Table 2 (Operation by 2 controls)

Path	CTL1&2	CTL3&4
Port1-ANT1 / Port2-ANT2	H*	L*
Port1-ANT2 / Port2-ANT1	L*	H*

* : H... 3V

L.... 0V

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

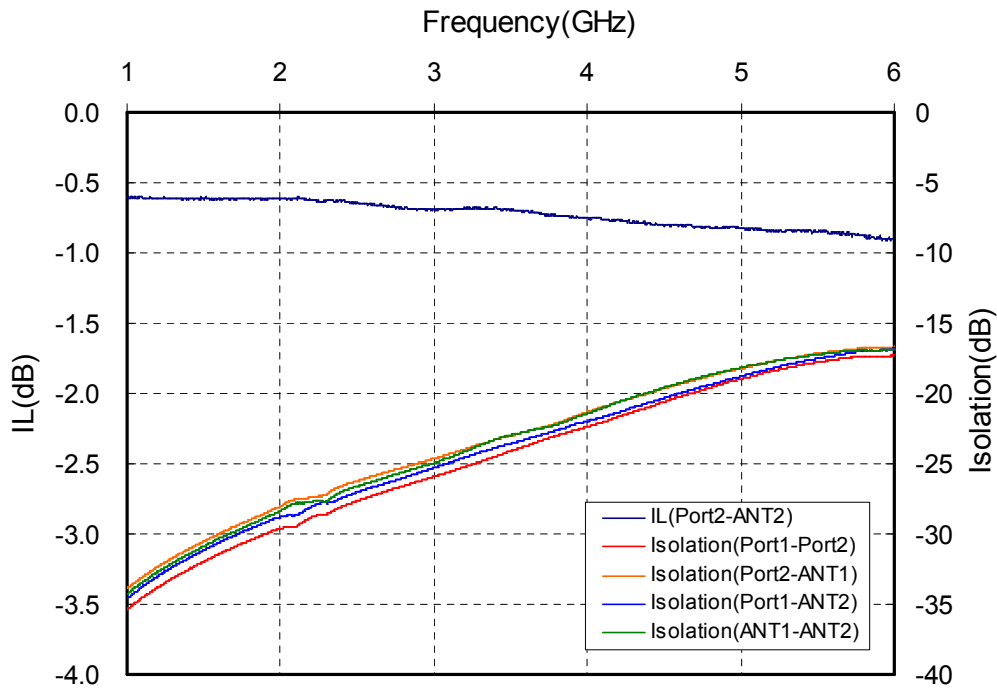


Fig.1 Insertion Loss and Isolation vs. Frequency
(CTL1=High, CTL2,3,4=Low)

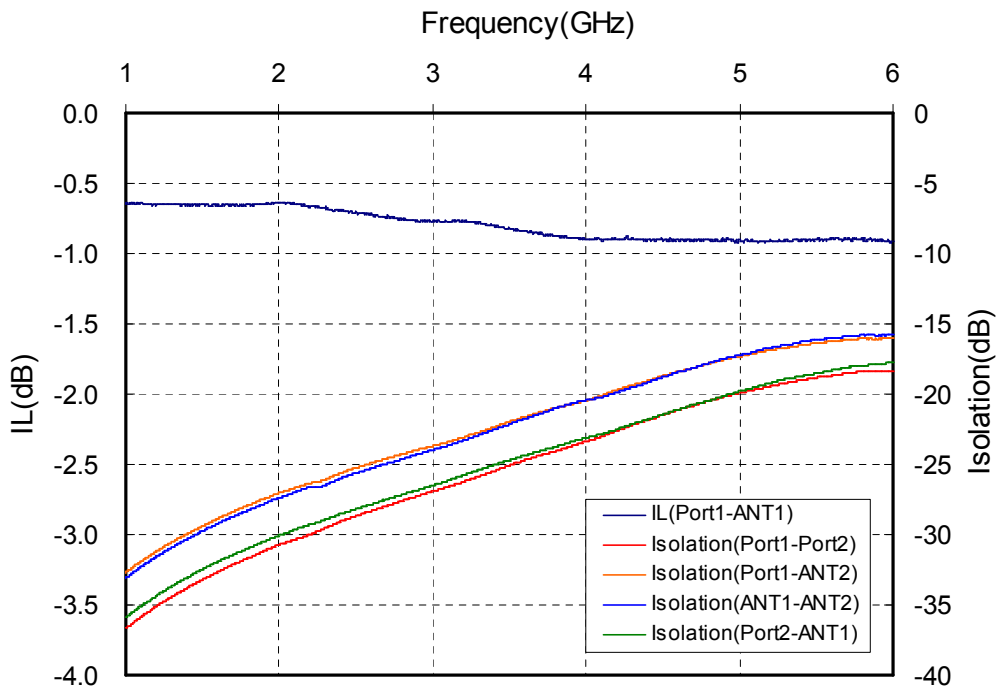


Fig.2 Insertion Loss and Isolation vs. Frequency
(CTL2=High, CTL1,3,4=Low)

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

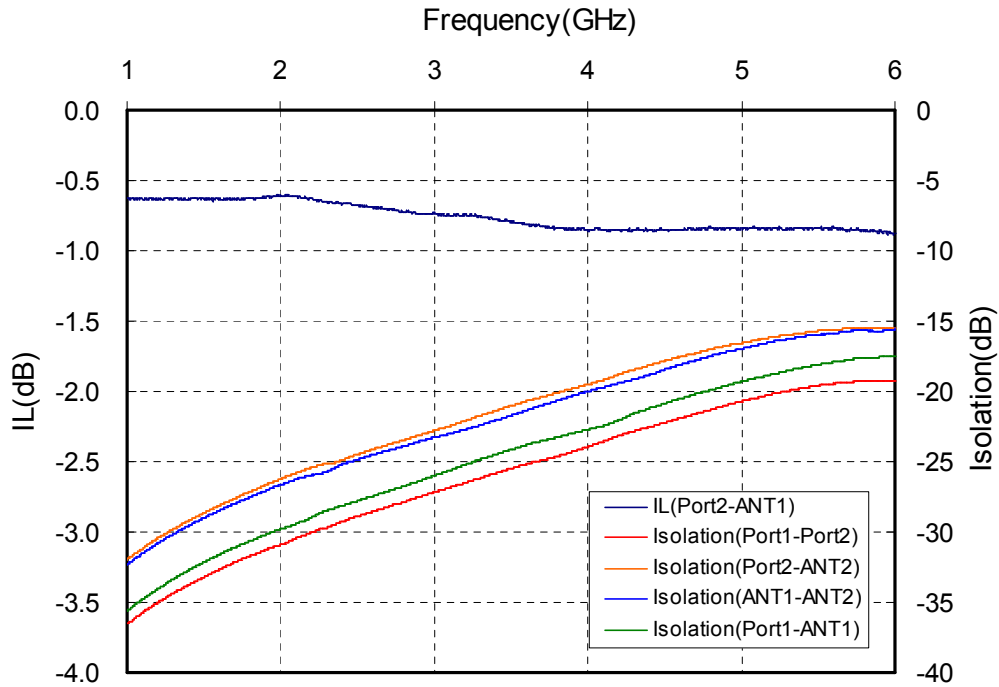


Fig.3 Insertion Loss and Isolation vs. Frequency
(CTL3=High, CTL1,2,4=Low)

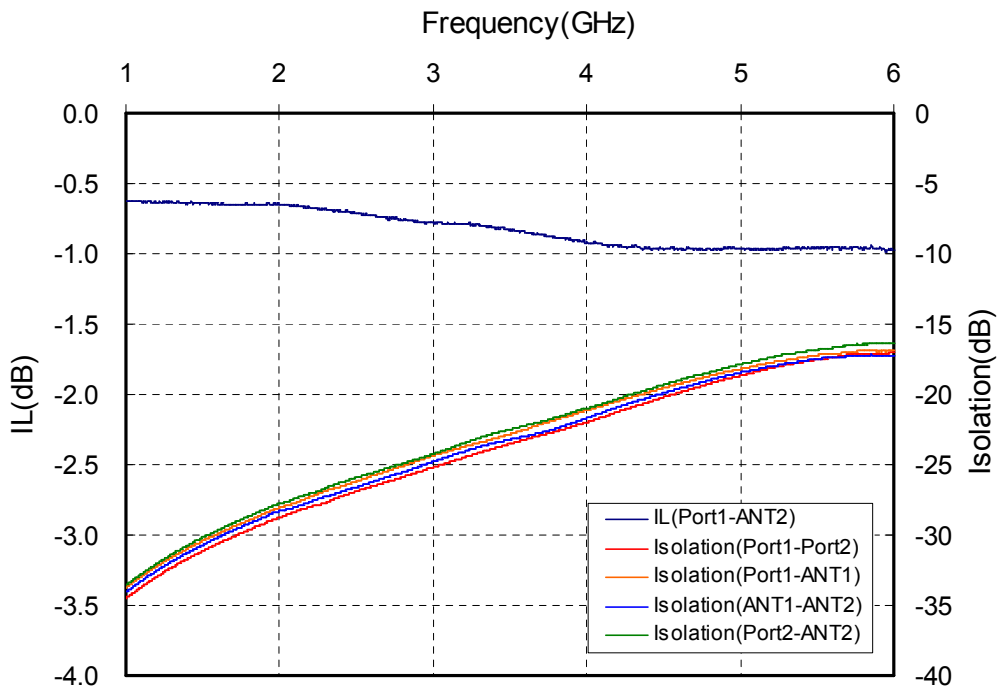


Fig.4 Insertion Loss and Isolation vs. Frequency
(CTL4=High, CTL1,2,3=Low)

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

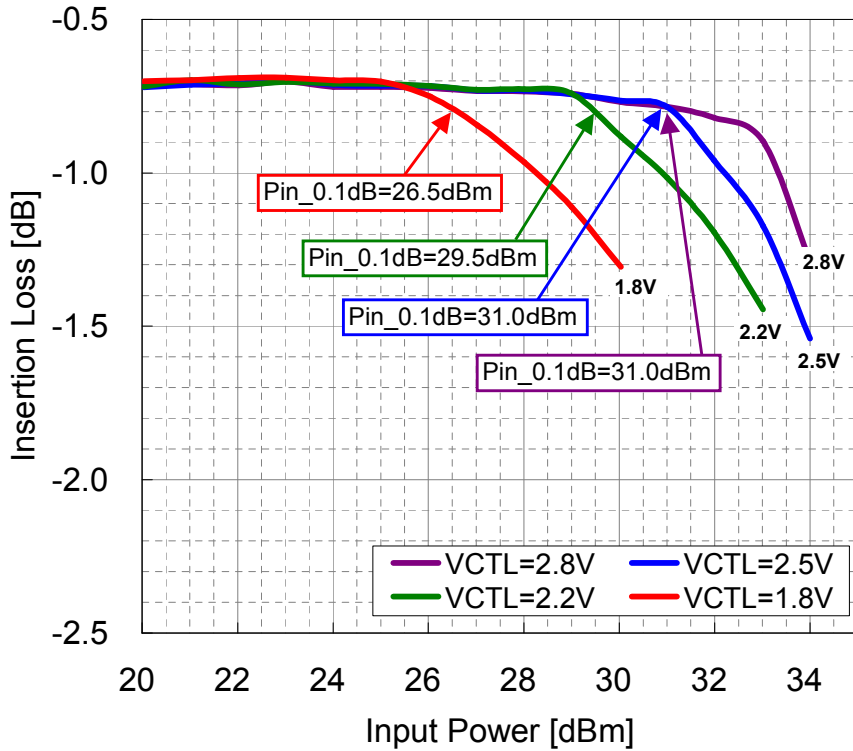


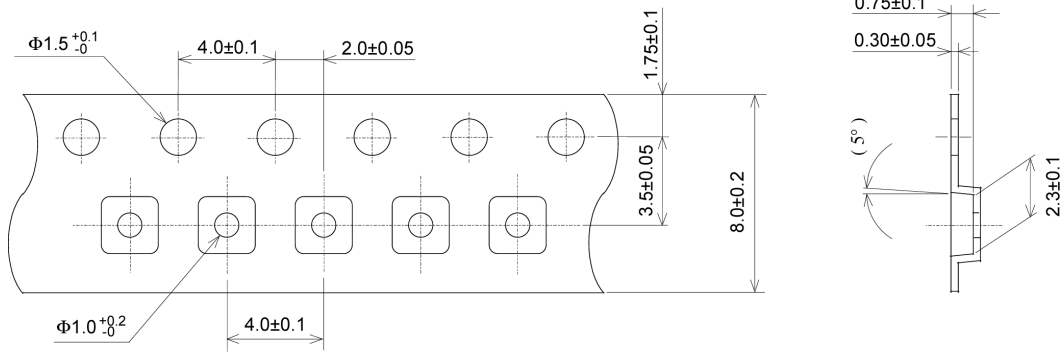
Fig.5 Power Characteristics(@2.0GHz)

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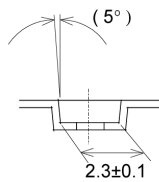
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1. Taping Specification

Tape Dimensions



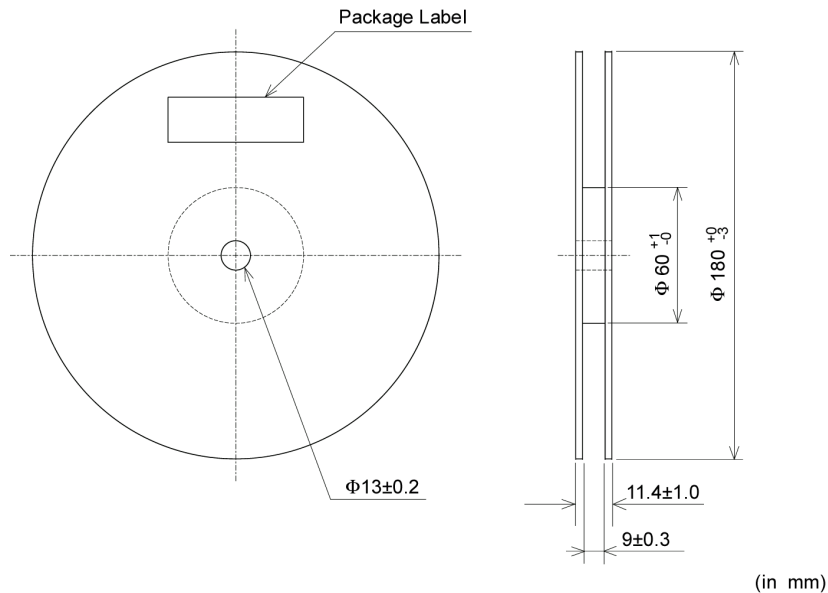
(in mm)



Note

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

Reel Dimensions

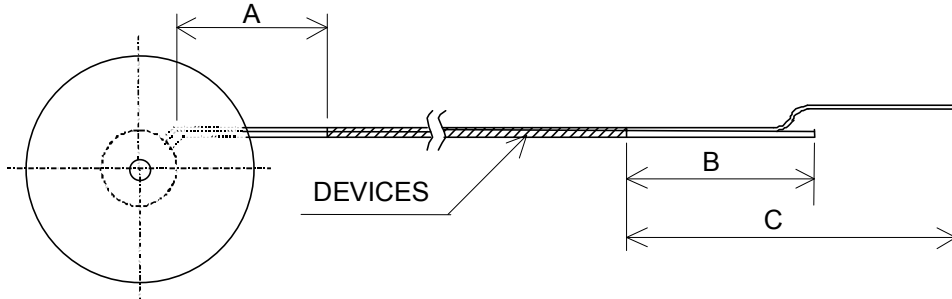


(in mm)

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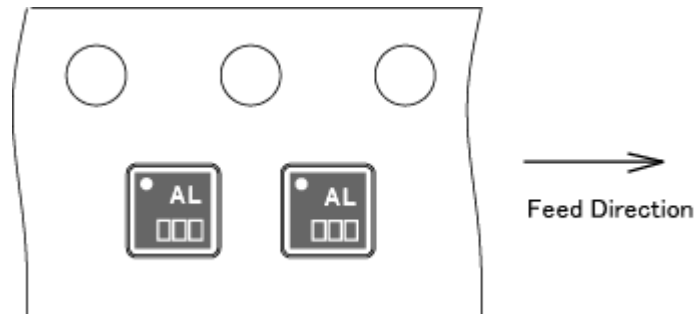
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Leader and Trailer Dimensions



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

Device Dimensions



Packing Unit
3000pcs / reel

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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.

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