PRELIMINARY DATA SHEET

XM0860SN-DL0601

DS0860SN-01 (CEL)

GaAs Very Small SPDT Switch for 0.8~6.0GHz

■ Applications

SPDT for General Purpose

■ Features (C6=1pF)

- Positive Voltage Control .....+1.8V
- Low Insertion Loss .....0.42dB@0.9GHz / 0.50dB@2.5GHz / 0.80dB@5.8GHz
- High Isolation .....26dB@0.9GHz / 22dB@2.5GHz / 19dB@5.8GHz
- Small / Thin Package .....6 pin Leadless Package (1mm×1mm×0.4mm|max,RoHS Compliant)
- MSL 3

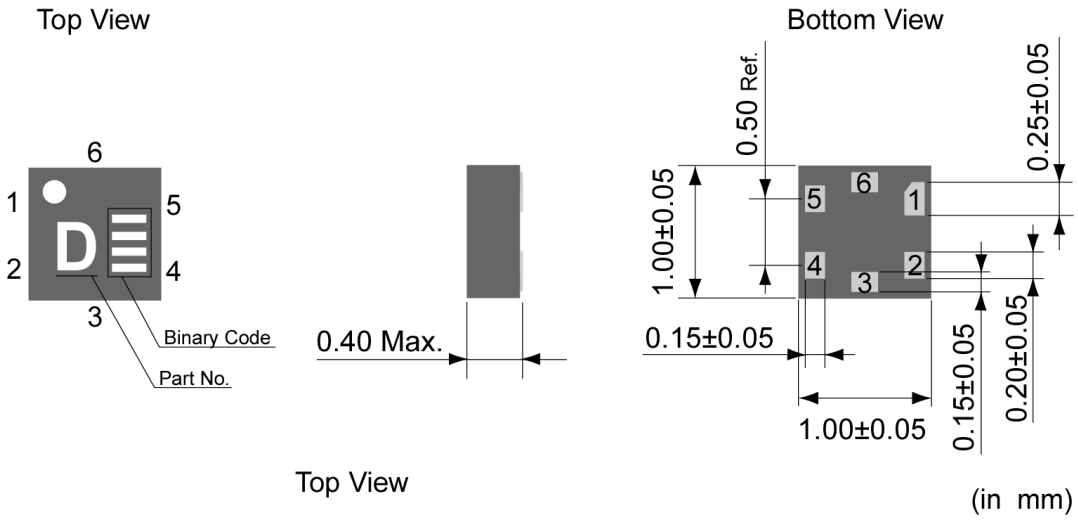
■ Absolute Maximum Ratings

Symbol	Parameter	Conditions	Rating	Unit
$V_{CTL(H)}$	Control Voltage (High)	Ta = 25°C $1.8 \leq V_{CTL(H)}-V_{CTL(L)} \leq 4.0$	1.8 to 4.0	V
$V_{CTL(L)}$	Control Voltage (Low)		-0.2 to 0.2	V
Pin	RF Input Power	Ta = 25°C	28	dBm
Top	Operating Temperature	-	-40 to 85	°C
Tstg	Storage Temperature	-	-55 to 150	°C

■ Electrical Specifications (Ta=25°C, $V_{CTL(H)}$=1.8V, $V_{CTL(L)}$=0V, C6=1pF)

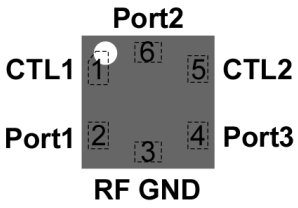
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_{CTL}	Control Current	Either State	-	1	10	μA
f_0	Operation Frequency	-	0.8	-	6.0	GHz
IL	Insertion Loss	0.9GHz	-	0.42	0.65	dB
		2.4GHz	-	0.50	0.75	dB
		5.8GHz	-	0.80	1.1	dB
ISO	Isolation (Port1or3 – Port2)	0.8 - 1.0GHz	24.0	26.0	-	dB
		1.0 - 2.5GHz	20.0	22.0	-	dB
		2.5 – 6.0GHz	17.0	19.0	-	dB
$P_{in\ 0.5dB}$	Input Power for 0.5dB Compression	2.5GHz, Vctl=1.8V	19	24	-	dBm
		2.5GHz, Vctl=2.8V	27	28		dBm

■



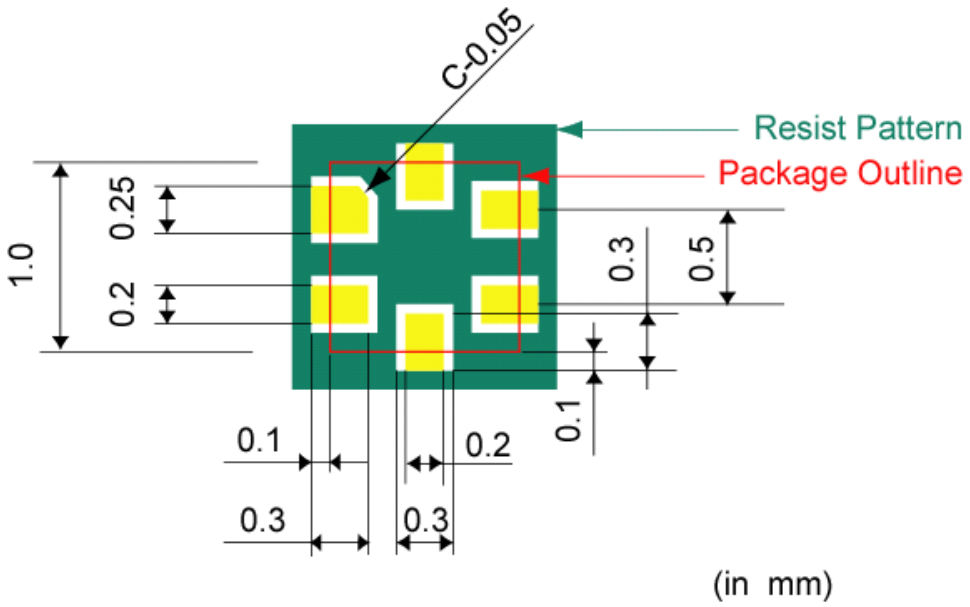
Top View

(in mm)



Package Outline and Pin Connections

■ Land Pattern

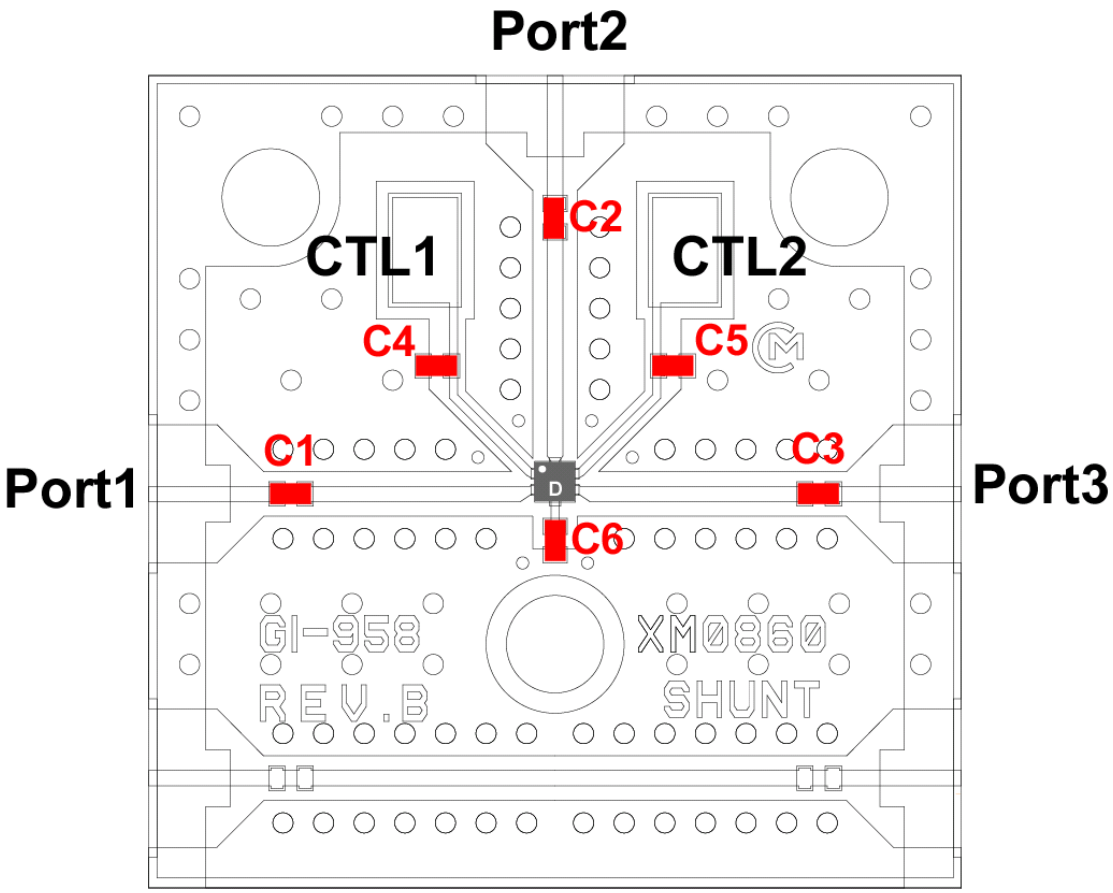


■ Truth Table

Path	CTL1	CTL2
Port1-Port2	H	L
Port2-Port3	L	H

H: 2.8V
L: 0V

■ Evaluation Board

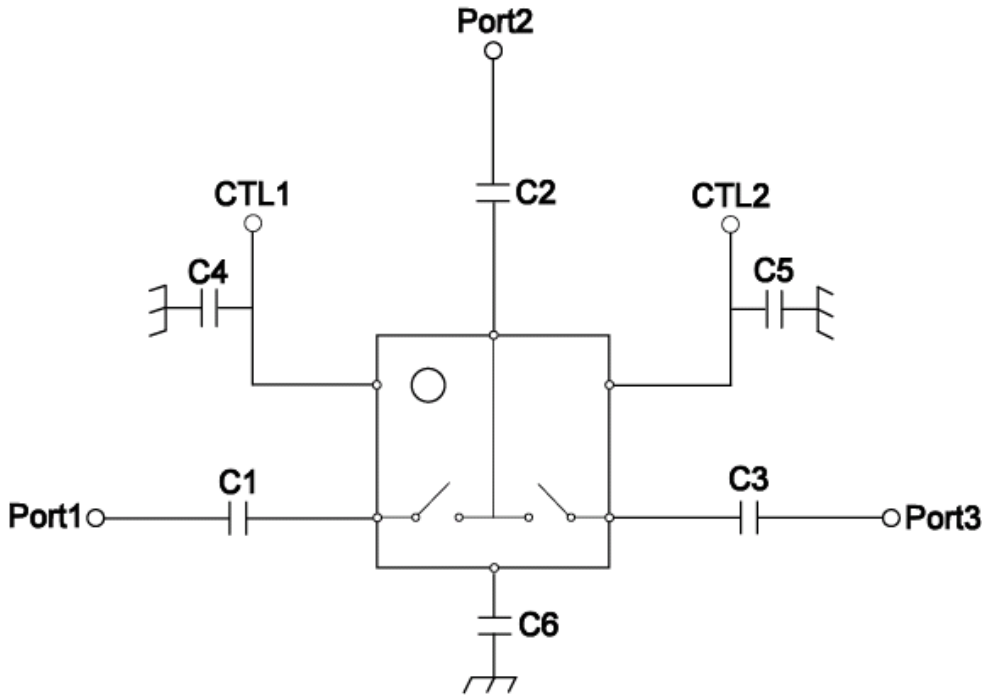


Parts List

Part No.	Products	Value
C1-C3	GRM155(Murata)	330 pF
C4, C5		100 pF
C6		1 pF

Substrate
FR4,
ε_r =4.4
Thickness = 0.2mm + 0.6mm(dummy)
Metal Thickness:18um
Size=20mm x 20mm

■ Evaluation Circuit



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

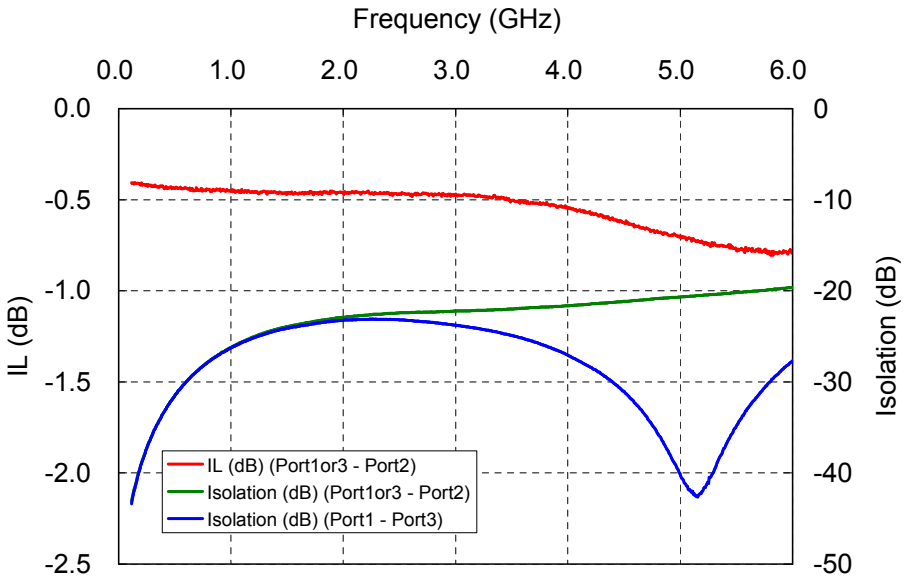


Fig.1 Insertion Loss and Isolation vs. Frequency ($V_{CTL(H)}$=2.8V), C6=1pF

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

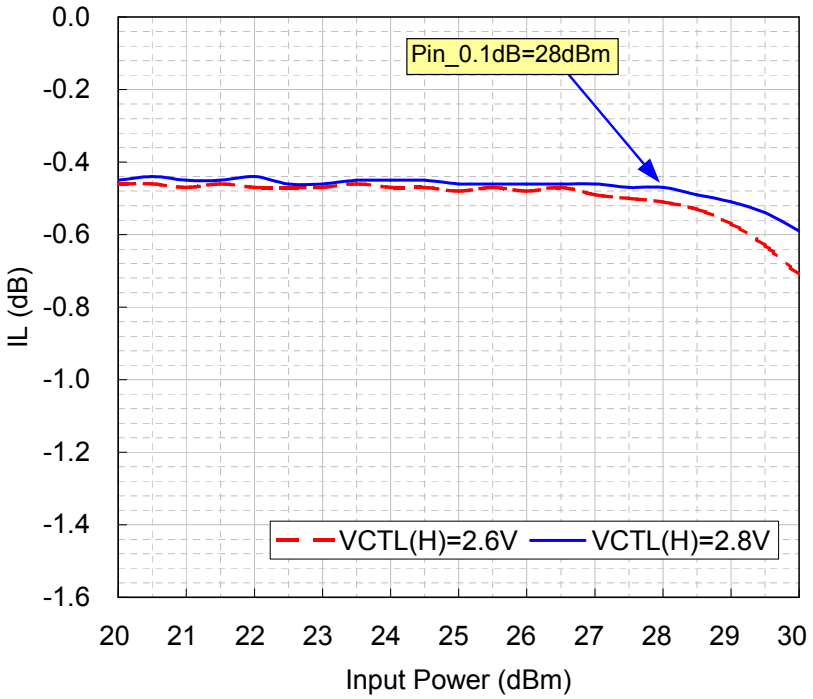


Fig.2 Power Characteristics (@2.4GHz), C6=1pF

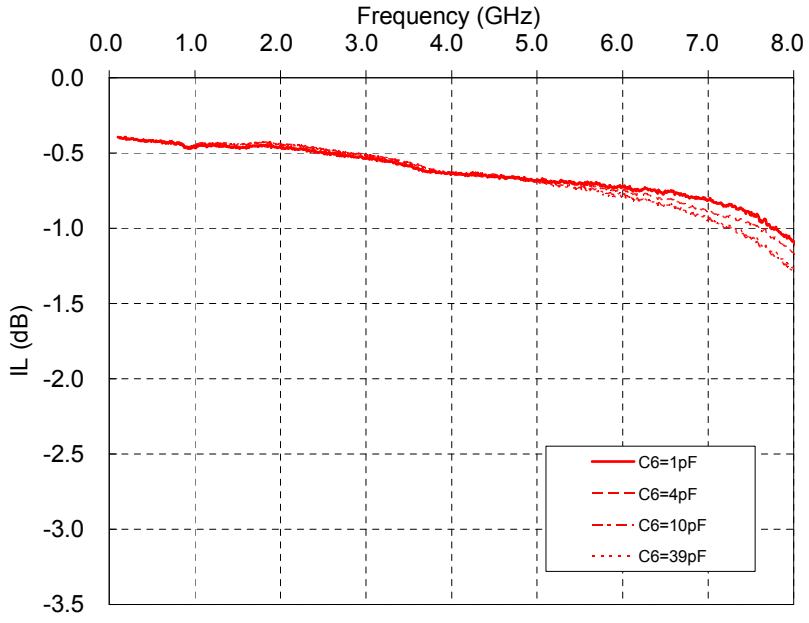


Fig.3 Insertion Loss and Isolation vs Frequency ($V_{CTL(H)}$=2.8V), C6 dependency

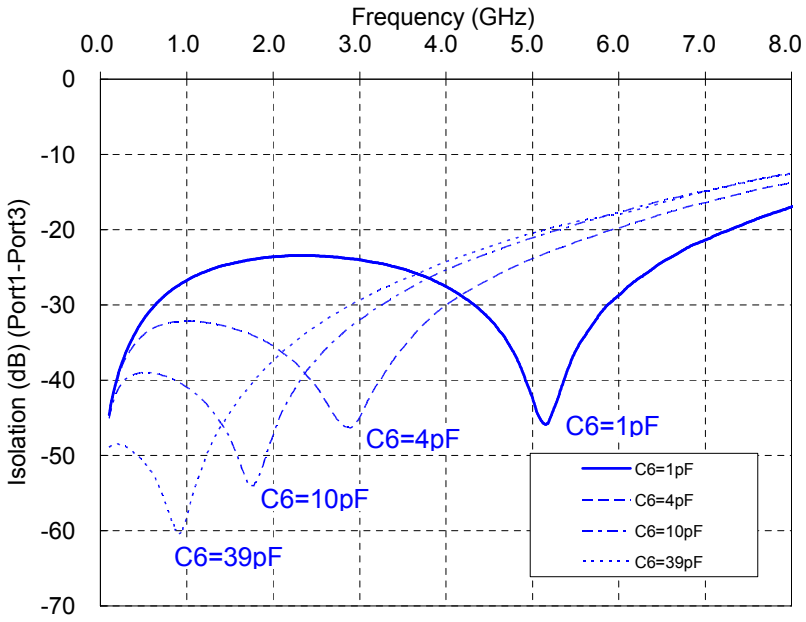


Fig.4 Isolation(Port1-port3) vs Frequency ($V_{CTL(H)}$=2.8V), C6 dependency

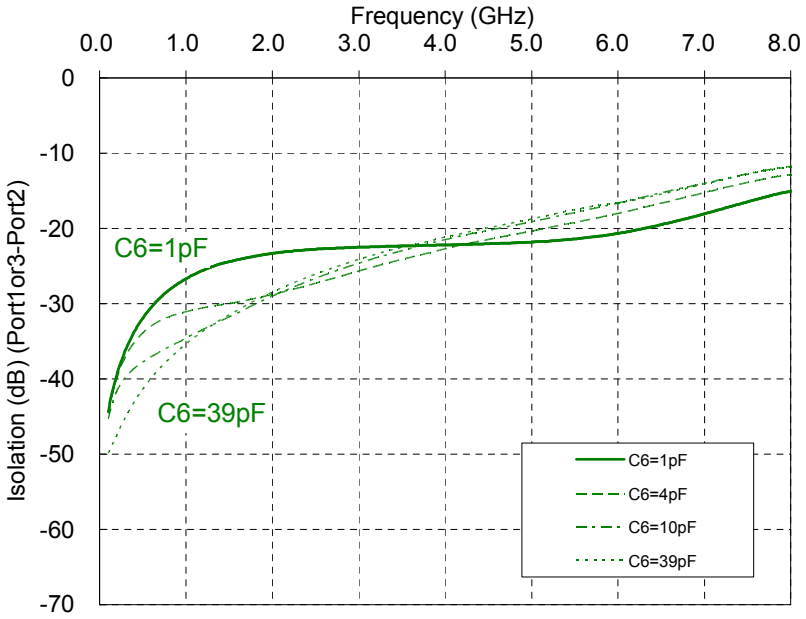


Fig.5 Isolation(Port1or3-port2) vs Frequency ($V_{CTL(H)}$=2.8V), C6 dependency

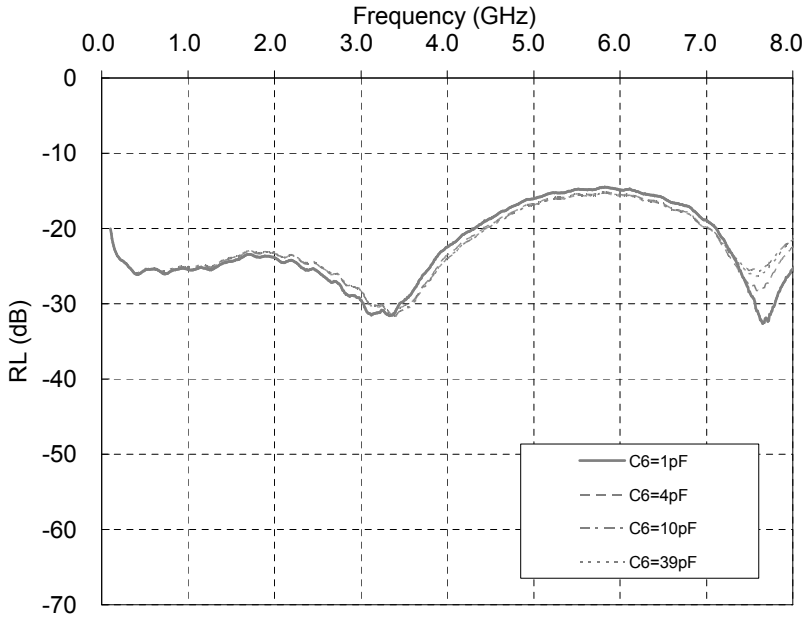
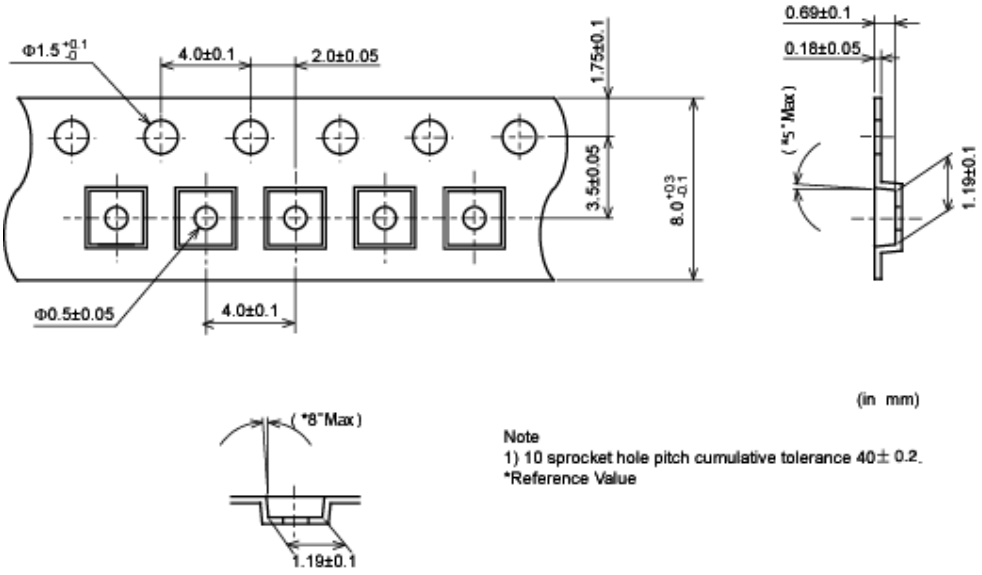


Fig.6 Retern Loss vs Frequency ($V_{CTL(H)}$=2.8V), C6 dependency

■ Taping Specification

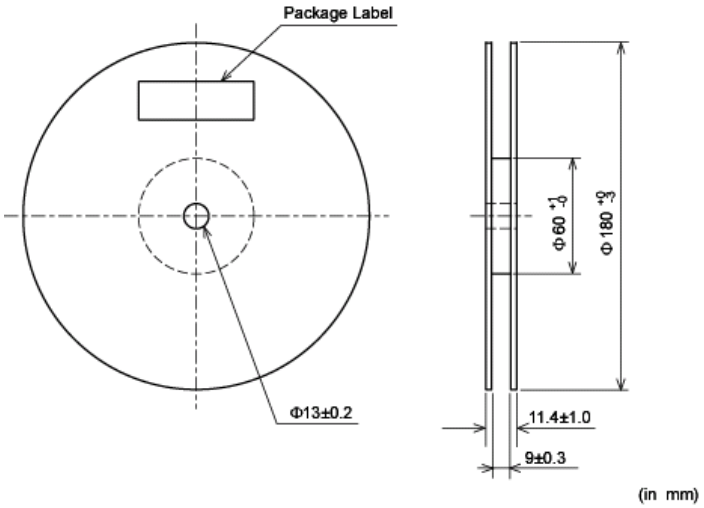
Tape Dimensions



(in mm)

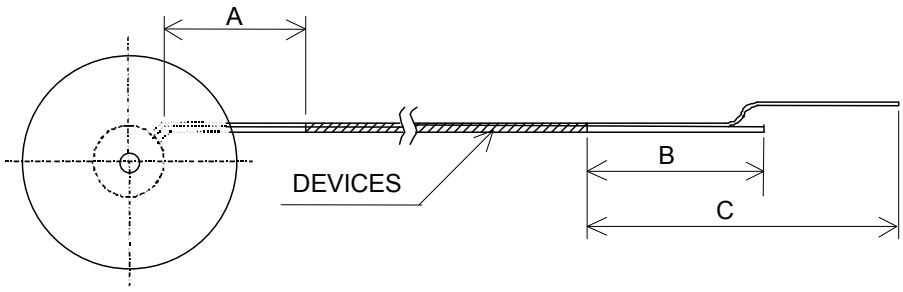
Note
1) 10 sprocket hole pitch cumulative tolerance 40± 0.2.
*Reference Value

Reel Dimensions



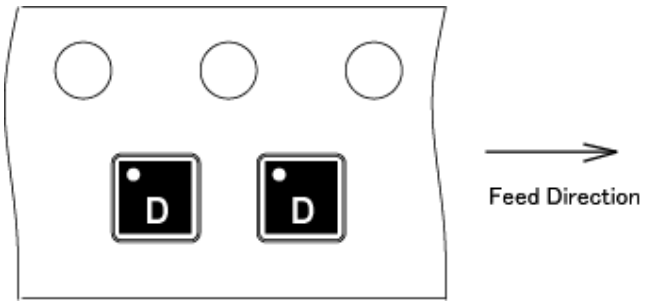
(in mm)

Leader and Trailer Dimensions



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

Device Dimensions



Packing Unit
5,000pcs / 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.