SK3530FE

MSL 3 Device

GPS L1+L2+L5 SAW Filter, 1 in 2 out
Unbalanced / 10pin / 1511
Rev 1.0

❒Features

❒Applications

❒Typical Application Circuit

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❒Reflow Condition

❒Packing Information

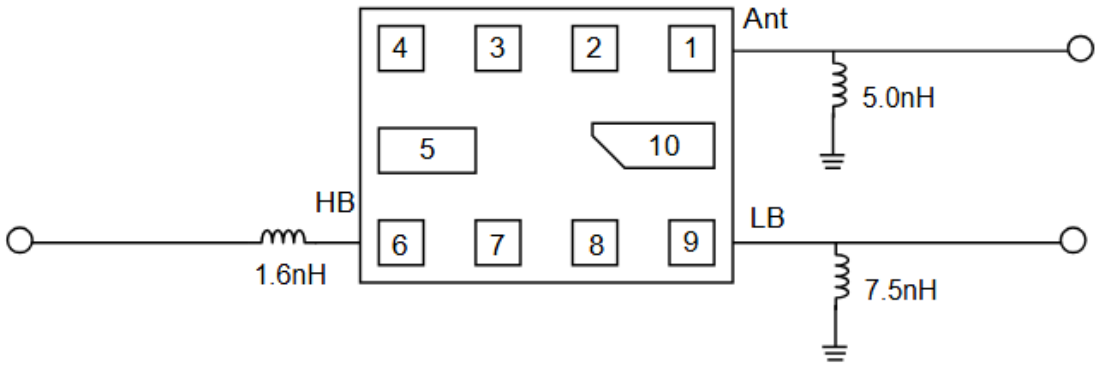
FEATURES

- RF SAW Filter
- Low Insertion Loss
- Support GPS(L5)+GPS(L2)+GLONASS(G3) +Beidou(B2)
- Support GPS(L1)+BEIDOU(B1)+GLONASS(G1)
- Moisture Sensitivity: MSL3
- RoHS compliant
- CSP (10-pin, 1.5mm x 1.1mm x 0.55mm) package

APPLICATIONS

- GPS SAW RX filter for GNSS L1, L2, L5
- Low-loss, pre-LNA comb filter for GNSS

TYPICAL APPLICATION CIRCUIT



Source & Load Impedance: 50Ω

Note: Matching component values shown are recommended based on the evaluation board. Value adjustment may be required on the end-user's circuit boards for the selected component manufacturer and PCB material.

PIN CONFIGURATION

Pin Number	Pin Name	Pin Description
1	Input	SAW filter input
2/3/4/5/7/8/10	GND	Ground
6	Output	Output GPS L1 (HB port)
9	Output	Output GPS L2/L5 (LB port)

❒ Electrical Characteristics

Maximum Ratings

Parameters Description		Unit	Minimum	Typical	Maximum
Operating Temperature Range		℃	-40	-	+85
Storage Temperature Range		℃	-40	-	+85
Maximum DC Voltage		V	-	-	5
Maximum Input Power (CW for 5000h/+55℃)		dBm	-	-	15
Source Impedance (unbalanced)		Ω	-	50	-
Load Impedance (unbalanced)		Ω	-	50	-
Length x Width		mm²	-	1.5 x 1.1	-
Height		mm	-	0.55	-
ESD voltage	CDM	V	-	-	500
	HBM	V	-	-	250

Electrical Specification

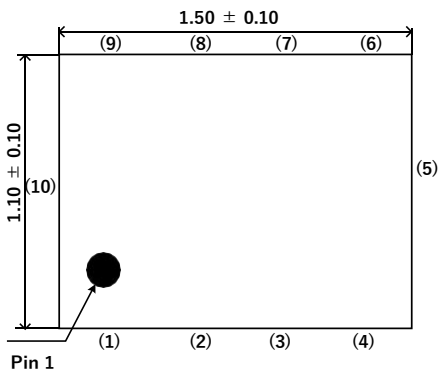
GPS(L1)+BEIDOU(B1)+GLONASS(G1)		Characteristics			Unit	Notes
Parameters Description		Min	Typ.	Max		
Insertion Loss	1574.39 to 1576.45 MHz		1.4	2.0	dB	
	1559.05 to 1563.15 MHz		1.5	2.2	dB	
	1597.55 to 1605.89 MHz		1.5	2.2	dB	
Passband Ripple	1559.05 to 1605.89 MHz		0.2	1.0	dB	
Group Delay Ripple	1559.05 to 1605.89 MHz		6	20	ns	
VSWR ANT	1559.05 to 1605.89 MHz		1.5	2.2	-	
VSWR H-CH	1559.05 to 1605.89 MHz		1.6	2.2	-	
Attenuation	638 to 698 MHz	40	43		dB	
	698 to 748 MHz	38	42		dB	
	777 to 798 MHz	37	42		dB	
	807 to 915 MHz	34	40		dB	
	925 to 960 MHz	33	39		dB	
	1427 to 1463 MHz	28	35		dB	
	1710 to 1800 MHz	29	41		dB	
	1910 to 1980 MHz	29	35		dB	
	2010 to 2025 MHz	31	35		dB	
	2300 to 2315 MHz	34	40		dB	
	2400 to 2483 MHz	38	41		dB	
	2496 to 2690 MHz	38	43		dB	
	5150 to 5925 MHz	29	34		dB	

Typical value at 25±2°C

GPS(L5)+GPS(L2)+GLONASS(G3)+Beidou(B2)		Characteristics			Unit	Notes
Parameters Description			Min	Typ.	Max	
Insertion Loss	1166.22 to 1186.88 MHz			1.5	2.3	dB	
	1205.59 to 1209.19 MHz			1.4	2.0	dB	
	1226.58 to 1228.62 MHz			1.5	2.3	dB	
Passband Ripple	1166.22 to 1228.62 MHz			0.5	1.5	dB	
Group Delay Ripple	1166.22 to 1228.62 MHz			19	40	ns	
VSWR	ANT	1166.22 to 1228.62 MHz		1.8	2.3		
	L-CH	1166.22 to 1228.62 MHz		1.7	2.3		
Attenuation	500 to 748 MHz		33	40		dB	
	777 to 798 MHz		33	40		dB	
	807 to 915 MHz		30	36		dB	
	925 to 960 MHz		30	39		dB	
	1427 to 1463 MHz		27	33		dB	
	1626.5 to 1660.5 MHz		25	30		dB	
	1695 to 1785 MHz		30	36		dB	
	1850 to 2025 MHz		33	39		dB	
	2300 to 2400 MHz		36	45		dB	
	2400 to 2483 MHz		36	45		dB	
	2496 to 2690 MHz		35	42		dB	
	3400 to 3800 MHz		30	37		dB	
	4400 to 4900 MHz		27	35		dB	
	5150 to 5925 MHz		26	34		dB	

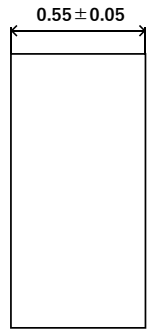
Note: Typical value at 25±2°C

❒ Package Dimensions

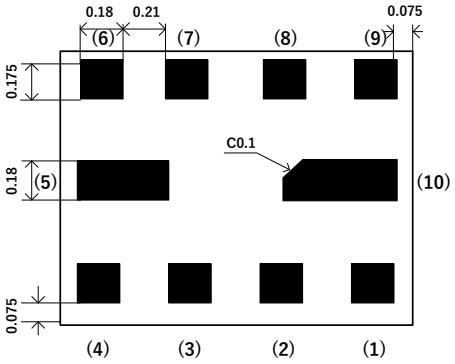


Unit: mm

Top View

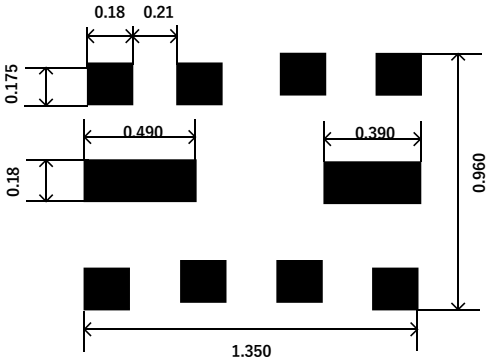


Side View



Bottom View

Land Pattern

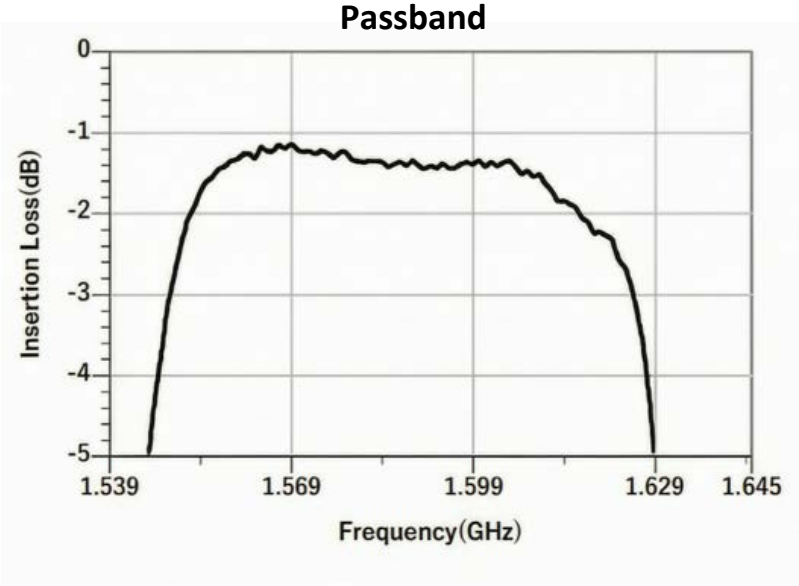


Unit: mm

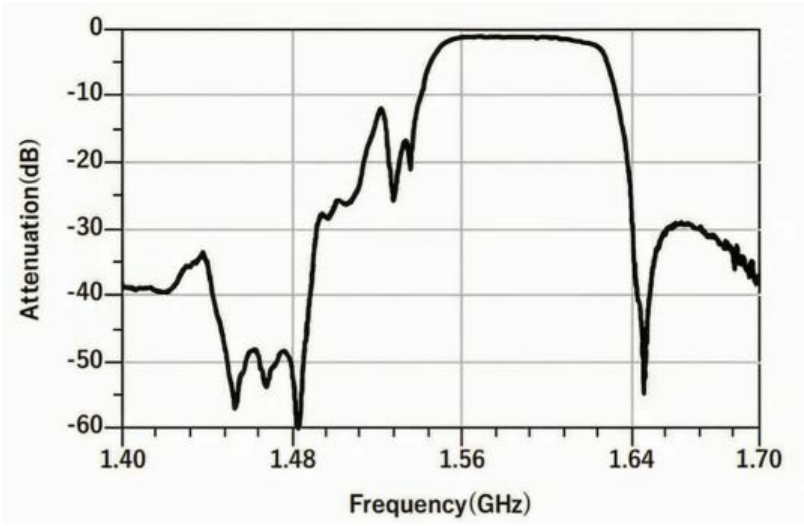
❒ Frequency Characteristics

GPS L1

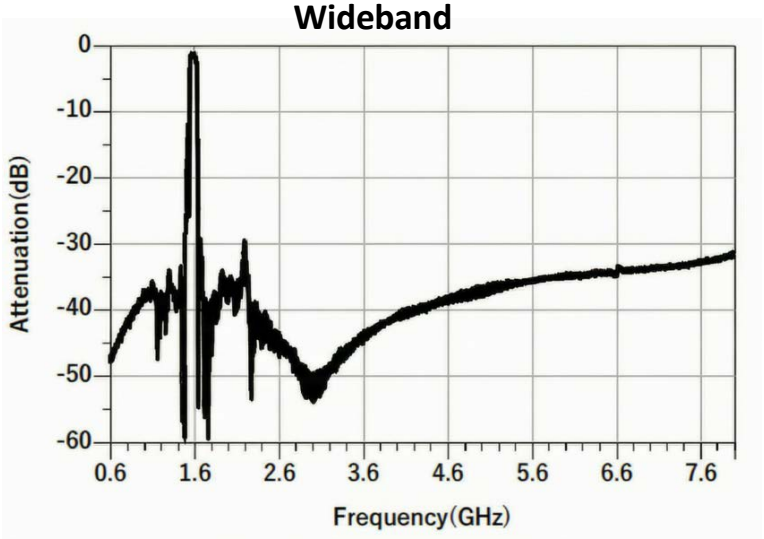
Passband



Narrowband

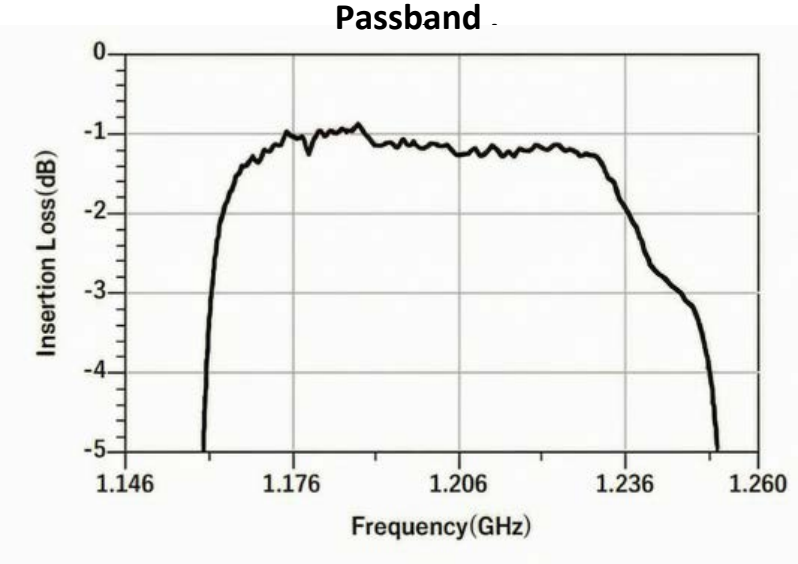


Wideband

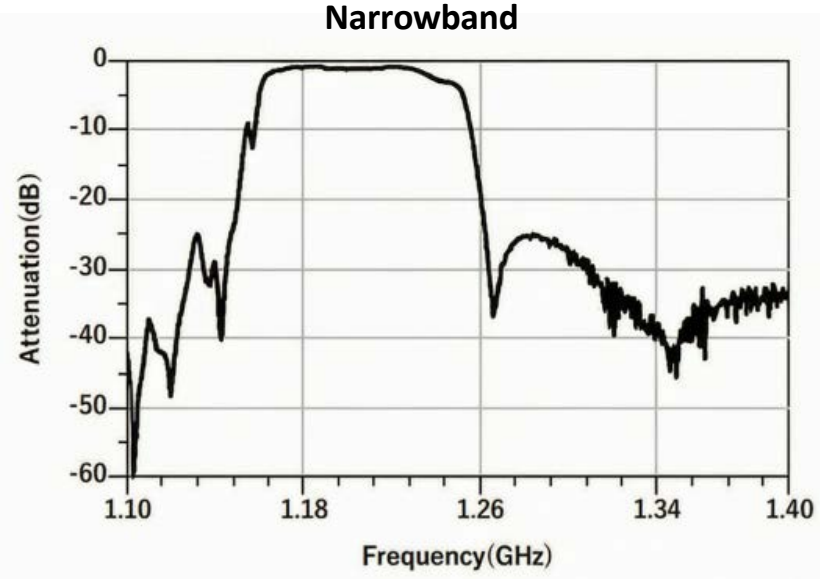


GPS L2 & L5

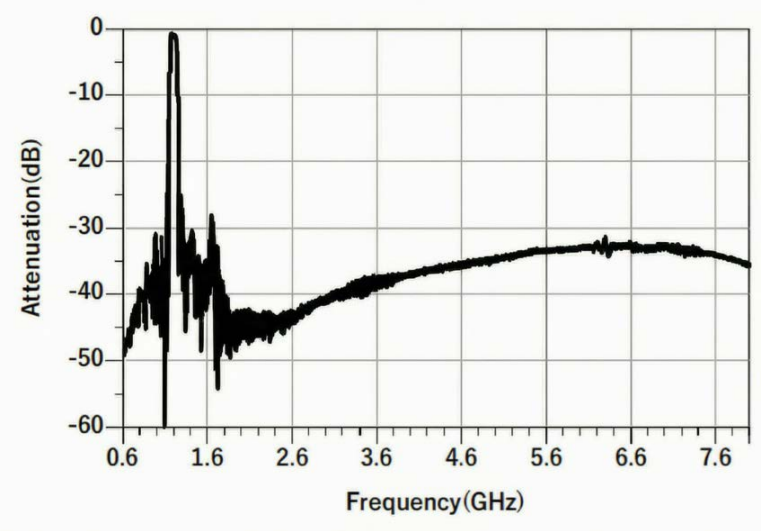
Passband



Narrowband

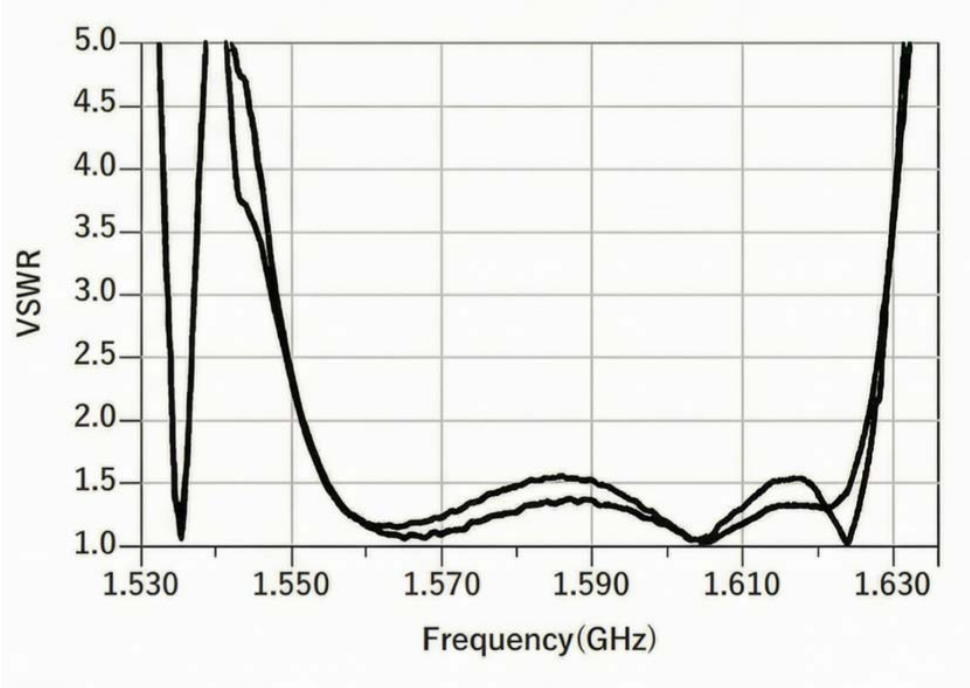


Wideband

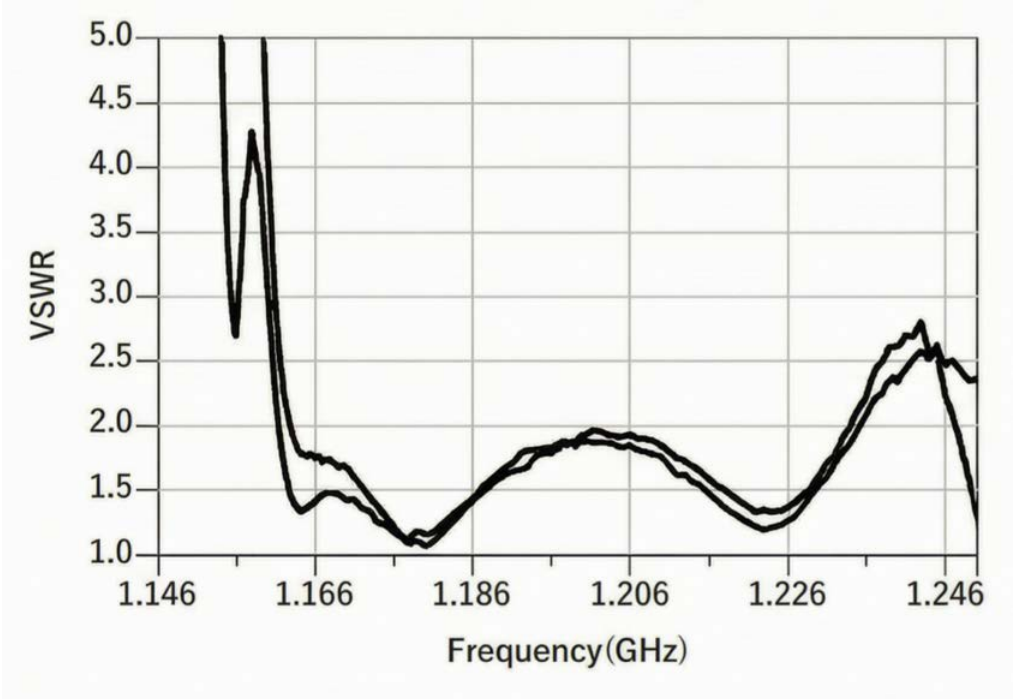


VSWR

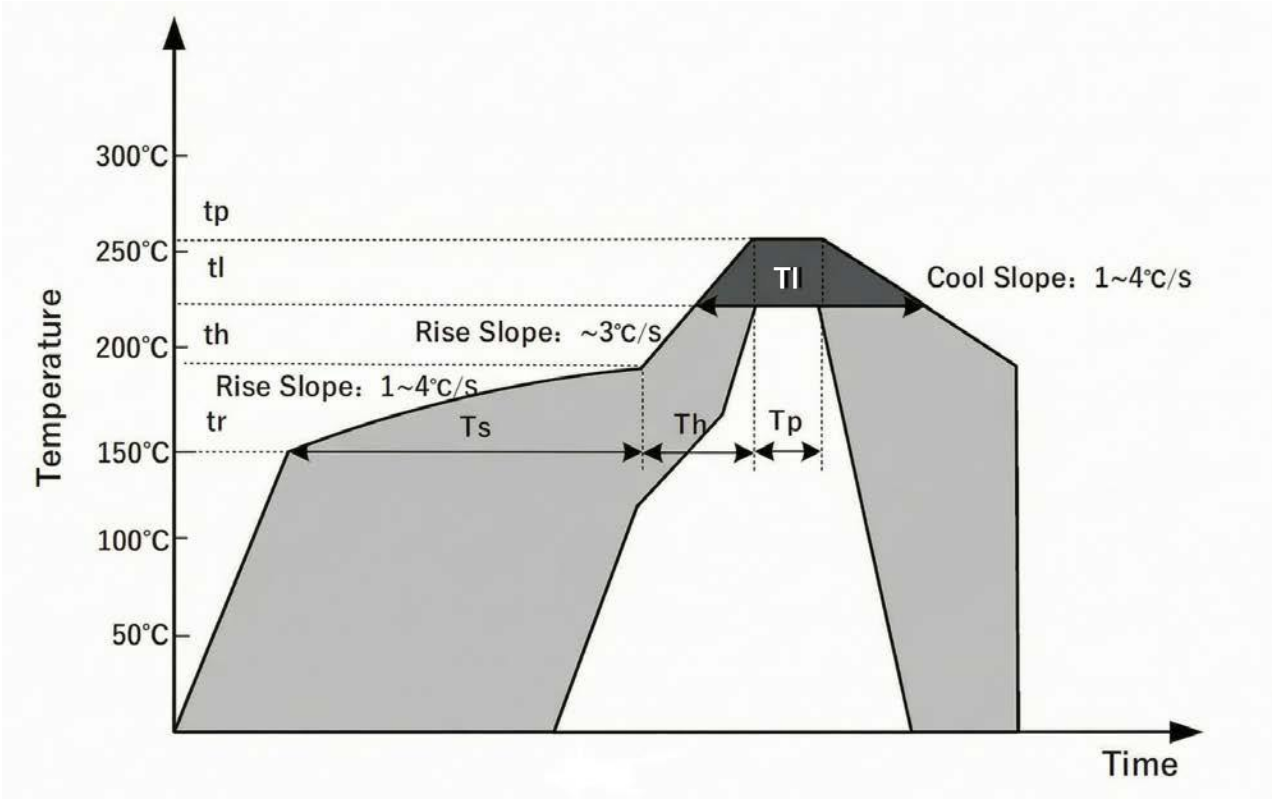
GPS L1



GPS L2 & L5



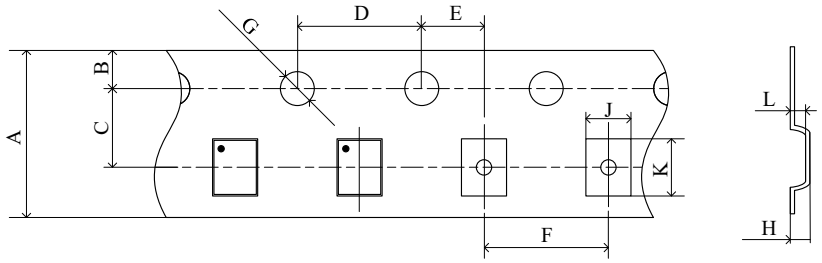
❒Reflow Condition



Reflow Parameter	Values
Preheating time T_S	50 ~ 110s
Temperature tr	~150°C
Time Th	~30s
Temperature th	~180°C
Peak Time Tp	~10s
Peak Temperature tp	~255°C min
Time Tl	~230°C
Temperature tl	~50s max

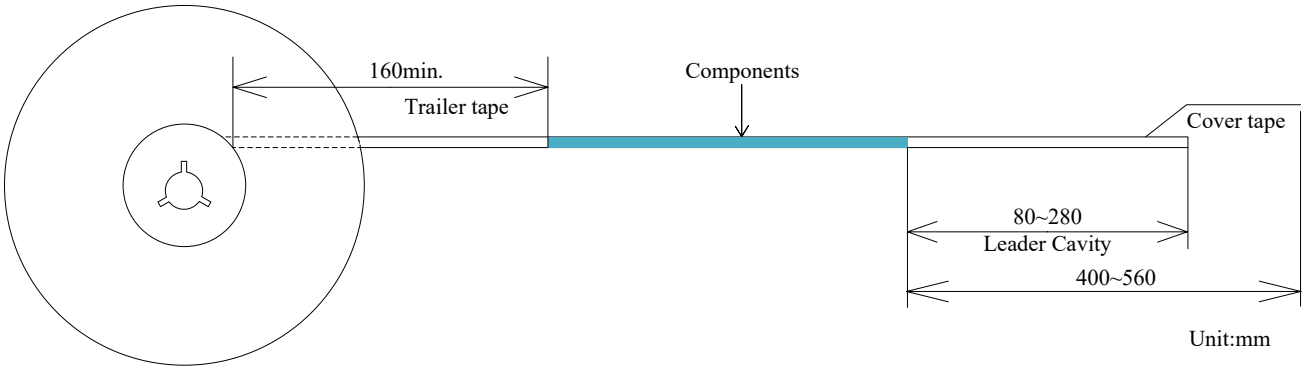
❒Packing Information

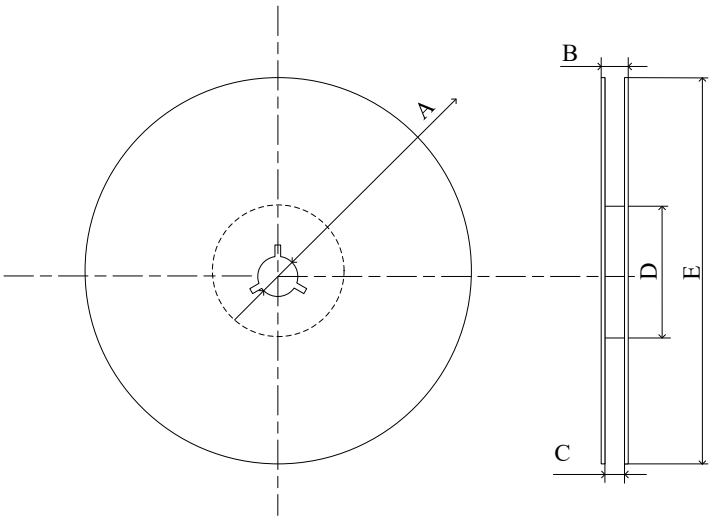
Tape Dimension



A:	8.0	H:	0.95
B:	1.75	J:	1.3
C:	3.50	K:	1.6
D:	4.0	L:	0.70
E:	2.00		
F:	4.0		
G:	φ1.5		

Reel Dimension





φ178Reel		φ330Reel	
A:	φ13.0	A:	φ13.0
B:	13.5max	B:	15.5max
C:	9.0	C:	9.5
D:	φ60	D:	φ100
E:	φ178	E:	φ330