

PP3535 Series(Preliminary)

Multilayer Chip Pentaplexer

Features

- ❖ Monolithic structure including one low-pass and several band-pass filters with loss pole at adjacent passband.
- ❖ RoHS compliant

Applications

- ❖ Cellular, LTE system

Part Number

PP 3535 - QF 0760 MM □ /LF
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	PP : Pentaplexer	② Dimensions (L x W)	3.5 x 3.5 mm
③ Material Code	QF	④ Frequency Range	0760=700MHz ~6000MHz
⑤ Specification Code	MM	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

Target Electrical Specifications

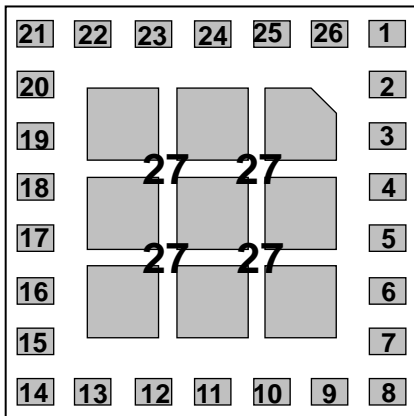
Part Number	Passband (MHz)		Insertion Loss (dB)	VSWR	Attenuation (dB)
PP3535-QF0760MM_	LB	698~960	1.2 max.	2.0 max.	24.5min. @ 1559 ~ 1610MHz
					31min. @ 1648 ~ 1698MHz
	MB	1427~2170	3 max.	2.0 max.	31min. @ 1760 ~ 1805MHz
31min. @ 1805 ~ 1880MHz					
2200		3.3 max.	28.5min. @ 2110 ~ 2170MHz		
				28min. @ 2400 ~ 2690MHz	
				32.5min. @ 2690 ~ 2745MHz	
				35.5min. @ 3246 ~ 3800MHz	
				44.5min. @ 5150 ~ 5850MHz	
				26min. @ 698 ~ 960MHz	
				12min. @ 2300 ~ 2400MHz	
				13.5min. @ 2496 ~ 2690MHz	
				26.5min. @ 3400 ~ 3800MHz	
				30min. @ 5150 ~ 5850MHz	

Part Number	Passband (MHz)		Insertion Loss (dB)	VSWR	Attenuation (dB)
PP3535-QF0760MM_	HB	2300~2690	3 max.	2.0 max.	28min. @ 698 ~ 960MHz 11min. @ 1710 ~ 2100MHz 11min. @ 2100 ~ 2200MHz 19.5min. @ 3400 ~ 3800MHz 17min. @ 5150 ~ 5850MHz
	UHB	3300~4200	2 max.	2.0 max.	23min. @ 698 ~ 960MHz 20min. @ 1710 ~ 2200MHz 13min. @ 2300 ~ 2700MHz 20min. @ 5150 ~ 5850MHz
	LTE-U	5150~7200	1.3 max.	2.0 max.	31min. @ 698 ~ 960MHz 27min. @ 1710 ~ 2200MHz 17.5min. @ 2300 ~ 2700MHz 18min. @ 3400 ~ 3800MHz

Q'ty/Reel (pcs) : 1,000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Power Capacity : 3W max.
 Moisture Sensitivity Level : MSL-3
 Storage Period : 12 months max.*

*12 months in vacuum sealed bag and 1 week after opened. Please keep unused parts in vacuum sealed bags.

Terminal Configuration

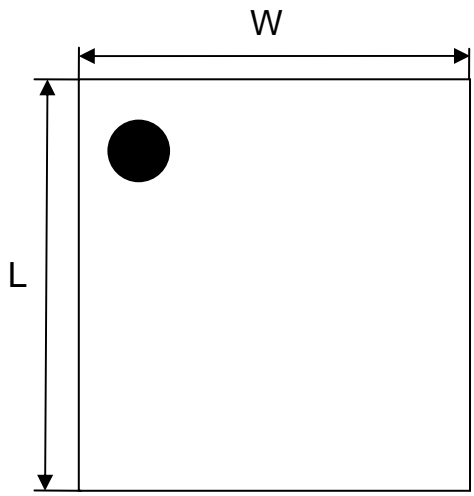


<Bottom View>

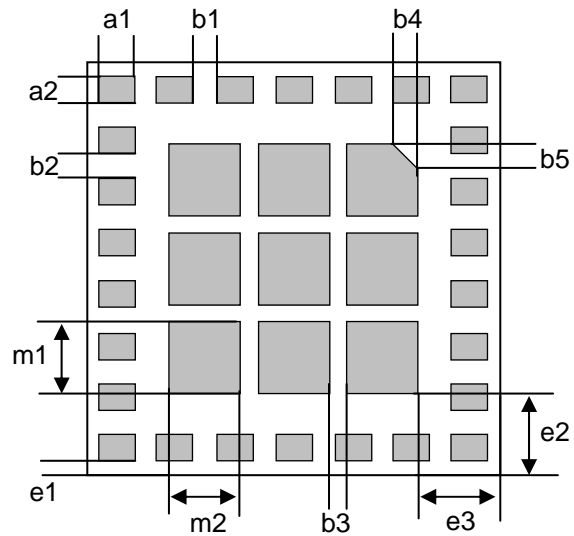
No.	Terminal Name	No.	Terminal Name
(1)	GND	(15)	GND
(2)	GND	(16)	MB
(3)	GND	(17)	GND
(4)	LTE-U	(18)	GND
(5)	GND	(19)	LB
(6)	GND	(20)	GND
(7)	UHB	(21)	GND
(8)	GND	(22)	GND
(9)	GND	(23)	GND
(10)	GND	(24)	GND
(11)	GND	(25)	GND
(12)	GND	(26)	ANT
(13)	HB	(27)	GND
(14)	GND		

Dimensions and Recommended PC Board Pattern

Unit : mm



< Top View >

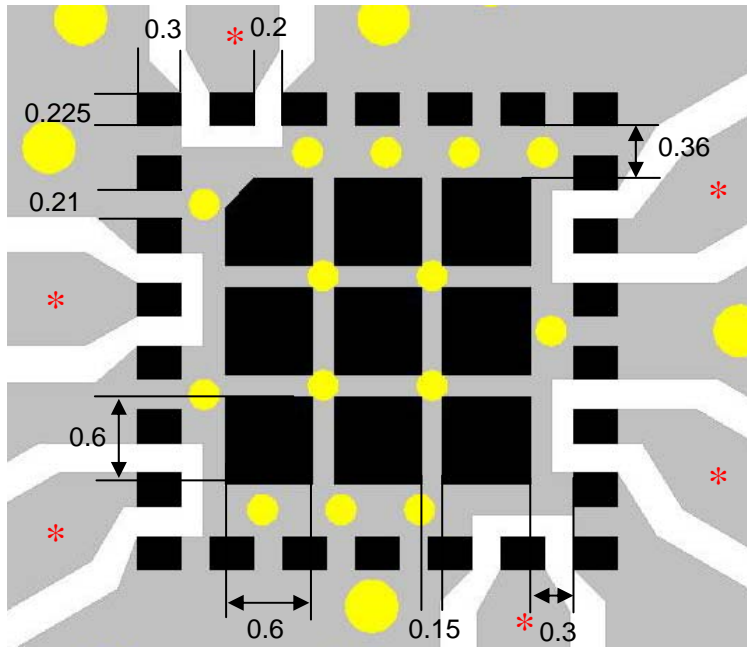


< Bottom View >



< Side View >

Mark	Dimensions	Mark	Dimensions	Mark	Dimensions
L	3.5 ± 0.2	b1	0.2 ± 0.1	e1	$0.115 + 0.2 / -0.1$
W	3.5 ± 0.2	b2	0.21 ± 0.1	e2	0.7 ± 0.1
T	1.0 typ. / 1.1max.	b3	0.15 ± 0.1	e3	0.7 ± 0.1
a1	0.3 ± 0.1	b4	0.2 ± 0.1	m1	0.6 ± 0.1
a2	0.225 ± 0.1	b5	0.2 ± 0.1	m2	0.6 ± 0.1

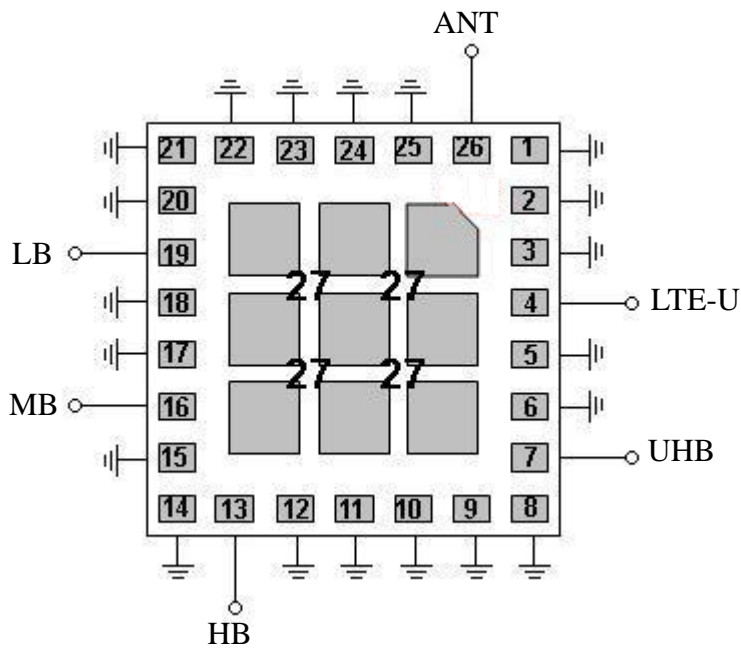


Unit : mm

- Solder Resist
- Land
- Through-hole ($\phi 0.2/\phi 0.35$)

* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram



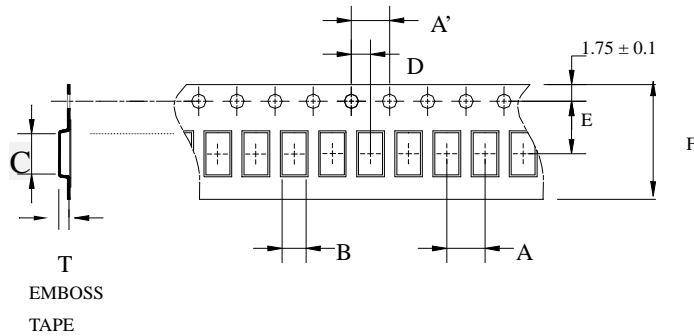
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Notes

- ❖ The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

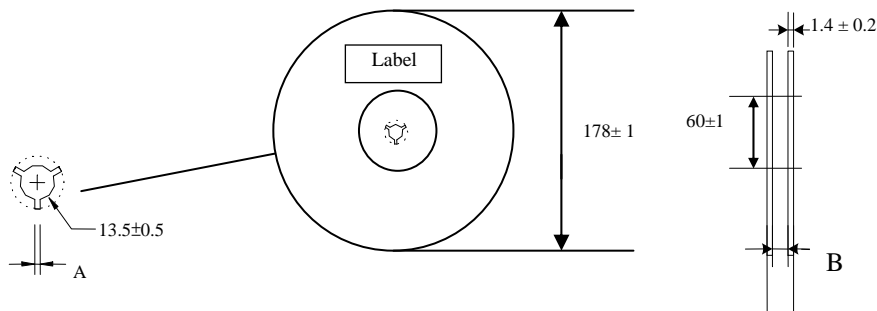
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
3535	8.0± 0.1	4.0± 0.1	3.75± 0.1	3.75± 0.1	2.0± 0.05	5.5± 0.1	12.0± 0.15	1.05± 0.10	1,000pcs	ESD

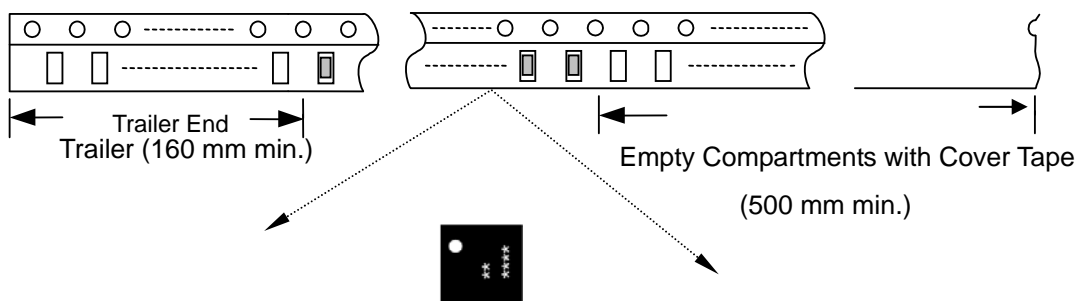
❖Reel Dimensions (Unit: mm)



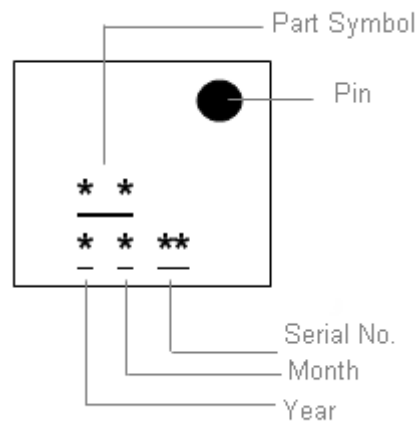
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

Type	A	B
3535	2.5±0.5	13.2±0.5

❖Leader and Trailer Tape



❖ **Marking**



❖ **Product lot code**

Year :

Year	2019	2020	2021
Code	9	0	1

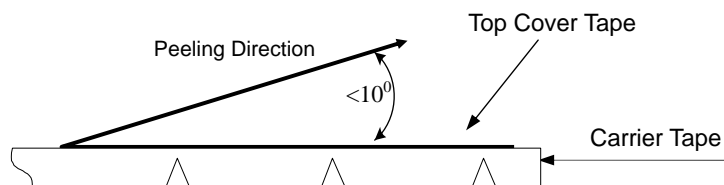
Month :

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Code	1	2	3	4	5	6	7	8	9	A	B	C

Serial No. :

from 01~99.

❖ **Peel-off Force**



Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of 300±10 mm/min .

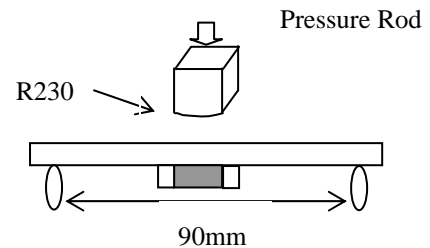
❖ **Storage Conditions**

- (1) Temperature: +5 ~35°C , relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.
- (3) Products should be properly treated at all situations from ESD potential resulting from human, equipments or other possible ESD sources.

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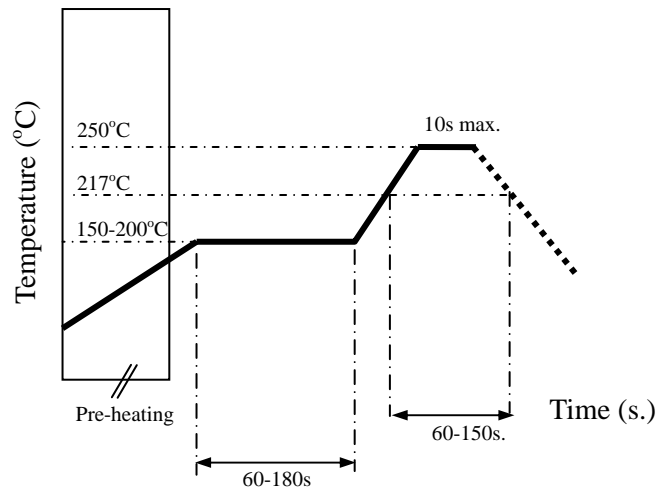
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> No apparent damage More than 95% of the terminal electrode shall be covered with new solder 	<ol style="list-style-type: none"> Preheat: $120 \pm 5^\circ\text{C}$ Solder: $245 \pm 5^\circ\text{C}$ for 5 ± 1 sec
Soldering strength (Termination Adhesion)	<ol style="list-style-type: none"> 9.8N minimum 	<ol style="list-style-type: none"> Solder specimen onto test jig. Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction
Deflection (Substrate Bending)	<ol style="list-style-type: none"> No apparent damage 	<ol style="list-style-type: none"> Solder specimen onto test jig (FR4, 1.6mm) using the recommend soldering profile. Apply a bending force of 2mm deflection Time : 10sec 
Heat/Humidity resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $85 \pm 2^\circ\text{C}$ Humidity: 90% ~ 95% RH Duration: 1000 ± 48hrs Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> One cycle/step 1 : $125 \pm 5^\circ\text{C}$ for 30 min step 2 : $-40 \pm 5^\circ\text{C}$ for 30 min No of cycles : 100 Recovery: 1-2 hrs
Low Temperature Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $-40 \pm 5^\circ\text{C}$ Duration: 500 ± 24hrs Recovery: 1-2hrs

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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