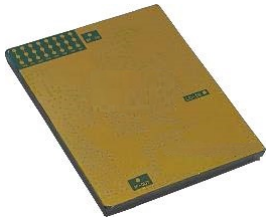
GF352103ME-618

Switch filter mixing multifunctional 3D integrated device, 6～18GHz

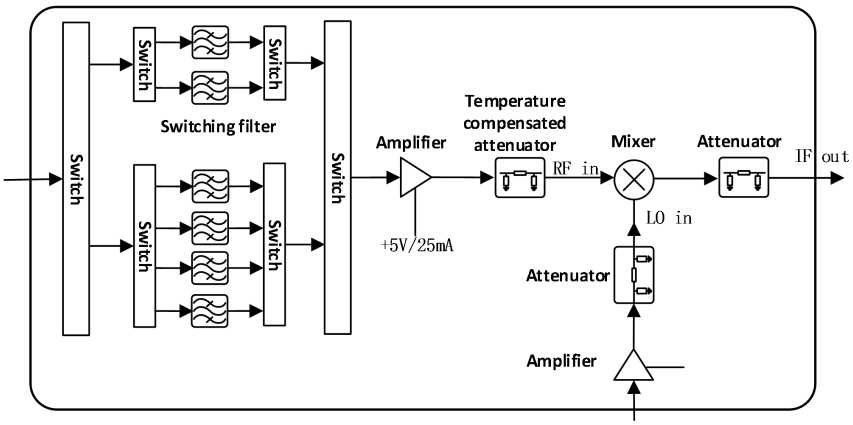
Product Name: Si-based switch filter mixing multifunctional 3D integrated device

Model Number: GF352103ME-618

Outline Dimensions: 18x22x1.25mm



Principle diagram



Product Introduction

GF352103ME-618 is a silicon-based switch filter mixing multifunctional 3D integrated device, which integrates chip circuits such as microwave switches, high-performance MEMS bandpass filters, mixers, and amplifiers. The module inputs signals ranging from 6GHz to 18GHz, selects one of the four switch filter banks through a switch for filtering, and then down converts them to 1.3GHz to 2.3GHz through a mixer before final output. This device has bidirectional transmission and reception capabilities. This device is manufactured using Si-based MEMS 3D integration technology, with multi-layer stacking achieved through wafer bonding, it is housed in a Si-based BGA package, suitable for SMT.

Electrical parameters(TA = +25°C, 50Ω system)

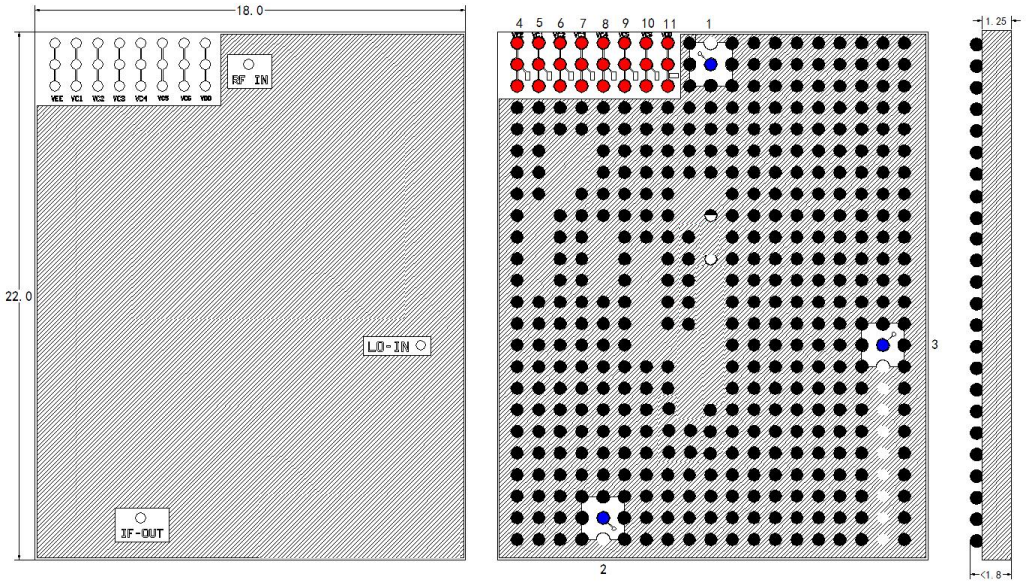
Index	Symbol	Min value	Typical value	Max value	Unit
RF frequency range	f_{RF}	6～18			GHz
LO frequency range	f_{LO}	6～20			GHz
IF frequency range	f_{IF}	1.3～2.3			GHz
Conversion loss	L_C	-	-11	-	dB
RF input P-1	P-1(IFin)	-	22	-	dBm
+5V supply current	I_{DD}	-	130	-	mA
-5V supply current	I_{EE}	-	25	-	mA

Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 89472019

GF352103ME-618

Switch filter mixing multifunctional 3D integrated device, 6～18GHz

External structure



Pin	Function	Description
1	RF port	RF signal input
2	IF port	IF intermediate frequency signal output
3	LO port	LO signal input
4	Power port VEE	-5V power port, current<25mA
5	Control port VC1	Microwave switch control port, 0/-5V TTL level.
6	Control port VC2	Microwave switch control port, 0/-5V TTL level.
7	Control port VC3	Microwave switch control port, 0/-5V TTL level
8	Control port VC4	Microwave switch control port, 0/-5V TTL level
9	Control port VC5	Microwave switch control port, 0/-5V TTL level.
10	Control port VC6	Microwave switch control port, 0/-5V TTL level.
11	Power port VDD	+5V power port, current<100mA
Note: Other BGA solder pads should be grounded		

Truth table

No.	Control signal voltage						Channel and passband frequency (GHz）
	VC1	VC2	VC3	VC4	VC5	VC6	
1	0	0	0	-5V	-5V	0V	Channel: 10～12GHz
2	0	-5V	0	-5V	-5V	0V	Channel: 6～8GHz
3	-5V	0V	0	-5V	-5V	0V	Channel: 12～14GHz
4	-5V	-5V	0	-5V	-5V	0V	Channel: 8～10GHz
5	×	×	0	-5V	0	-5V	Channel: 14～16GHz
6	×	×	-5V	0V	0	-5V	Channel: 16～18GHz

Add: 101 cecil street #14-10, tong eng building singapore 069533
Email: info@standardcircuit.com
Web: www.standardcircuit.com
Tel: +65 89472019

Notice

- Anti static measures are taken during the use and assembly process of product;
- The product needs to be assembled and used in a purified environment, and it is prohibited to use liquid cleaning agents to clean the module;
- Long term stable operation of the product requires airtight conditions;
- The module must be placed in a container with electrostatic protection function and stored in a nitrogen environment;
- Please use a vacuum chuck or precision pointed tweezers to retrieve the module. During the operation, avoid touching the surface of the module with tools or fingers;
- The chip should be installed on a substrate with a thermal expansion coefficient equivalent to that of silicon (2.9ppm/℃), and the thermal expansion coefficient of the substrate should be ≤ ppm/℃.