Small Volume I/F Conversion Circuit

Introduction

ER-IFC-G10M is a high-precision current/frequency conversion circuit using charge integration. This conversion circuit can continuously convert the current signals output by three accelerometers at the same time. The three accelerometers work independently without any influence on each other. It has the characteristics of small volume, high output frequency and high precision.

Specifications

Power supply: VCC=+15V±3%, VEE=-15V±3%, VDD=+5V±3%

Spec.	Test condition	Min	Typical	Max	Unit
Measuring range FS	whole temperature range	±13	–	–	–
Scale factor SF	whole temperature range	–	20000	–	pulses/s/mA
Maximum output frequency	whole temperature range	–	–	333	kHz
Zero position F0	Room temperature	0	–	10	nA
Zero deviation temperature coefficient	Full temperature range (absolute value)	–		0.1	nA/℃
Temperature coefficient (absolute value)	whole temperature range	–	–	5	ppm/℃
Scale factor asymmetry	I=±1mA, TC =25℃	0	50	100	ppm
Synthetic non-linearity	whole temperature range 1mA≤|I|≤FS	–	30	50	ppm
Single power stability (1σ)	I=±1mA, TC =25℃	–	10	20	ppm
Operating temperature range TC	–	-45	–	70	℃
Size	65*65*10.5	mm	–	–	–
Interface form	J30JZ/LN25ZKWA000	–	–	–	–

Power supply requirements

Items	Recommended range	Steady-state current	Internal capacitance value2
+15V Power supply	+15V±3%	≤0.10A	≤50uF
-15V Power supply	-15V±3%	≤0.10A	≤50uF
+5V Power supply	+5V±3%	≤0.20A	≤50uF

Connector pin definition

No.	Name	Type	Details	To
1	VCC	Power	-15V power supply	DC/DC power panel
2	AGND	Power Ground	±15V Power supply, input current ground	DC/DC power panel
3	VEE	Power	-15V power supply	DC/DC power panel
4	VDD	Power	5V power supply	DC/DC power panel
5	NC	NC	Internal debugging, need to be suspended	–
6	NC	NC		
7	NC	NC		
8	NC	NC		
9	NC	NC		
10	F3B	output	Z channel negative pulse output	Pulse acquisition board
11	F2B	output	Y channel negative pulse output	
12	F2A	output	Y channel positive pulse output	
13	Fclk	output	256kHz Synchronous square wave	
14	IX	input	X channel accelerometer input high end	accelerometer
15	IY	input	Y channel accelerometer input high end	accelerometer
16	IZ	input	Z channel accelerometer input high end	accelerometer
17	AGND	Power Ground	±15V Power supply, input current ground	DC/DC power panel
18	DGND	Power Ground	5V Power Ground	DC/DC power panel
19	NC	NC	Internal debugging, needs to be suspended	–
20	NC	NC		
21	NC	NC		
22	NC	NC		
23	F3A	output	Z channel positive pulse output	Pulse acquisition board
24	F1B	output	X channel negative pulse output	
25	F1A	output	X channel positive pulse output	