Customer Code : _____

DATASHEET

DAPU P/N: **CM87B-L325-10.00MHz**

Customer P/N:_____

DAPU			Customer Approval
Drew	Audited	Approved	
Amway.wei	Carry.Wang	James.Liu	
Date: 2018.10.18			Stamp, please! Thanks!

Guangdong Dapu Telecom Technology Co.,Ltd

Bldg 16,.N.Ind.Zone,SSL Industry Park, Dongguan City, Guangdong Province, China

TEL：0086-0769-88010888 FAX：0086-0769-81800098

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

Table of Amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2018.10.18

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

Table of Content

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

1. General Description

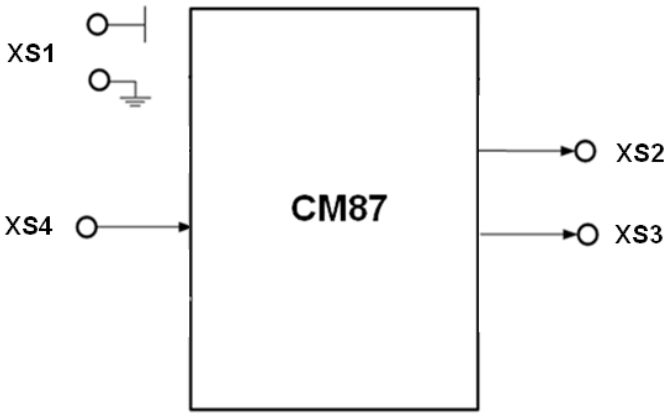

Figure 1 CM87

Figure 1 is the basic diagram of CM87. CM87 is a high-performance clock module designed to provide precise frequency and phase synchronizing with external time reference for telecom and other applications.

Key features:

- **Reference:**10MHz;
- **Clocks Input and Output:** 1*10MHz input, 2*10MHz output;
- **Indicator：2***LED
- **Mechanical Size:** 80mm*70mm*26mm.

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

2. Pin Definition

Table 1 Pin Definition

Pin group	Pin#	Pin Name	Type	Description
Supply Voltage	XS1_Pin 1	VCC	PWR	Power Supply
	XS1_ Pin 2			
	XS1_ Pin 3	GND	GND	Ground
	XS1_ Pin 4			
Output Clocks	XS2	10MHz _OUT	O	10.00MHz Output
	XS3	10MHz _OUT	O	
Input Clock	XS4	10MHz_IN	I	10MHz_IN Reference Input

Table 2 LED Definition

Name	Type	Description
LED1	ON	External 10MHz reference source is valid
	OFF	Others
LED2	ON	CM locked to external 10MHz reference
	OFF	Others

3. Electrical Parameters

Table 3 Electrical Parameters

Parameter	Symbol	Minimum	Typical	Maximum	Units
LVCMOS Input					
High Level Input Voltage	V_{IH}	2.4		3.6	V
Low Level Input Voltage	V_{IL}			0.4	V
LVCMOS Output					
High Level Output Voltage	V_{OH}	2.4			V
Low Level Output Voltage	V_{OL}			0.4	V

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

4. Performance

Table 4 Performance

Item	Parameter	Minimum	Typical	Maximum	Units	Test Condition
Clock Output	Nominal Frequency		10.00		MHz	Synchronizing with 10 MHz reference.
	Duty Cycle	45	50	55	%	Load 15pF
	Short-term Stability	-0.01		+0.01	$\times 10^{-9}$	Vcc=5.0V;T_A=25℃; 1s; using PN9000; no EMI\EMC or other interference.
	Yearly Aging	-30		+30	$\times 10^{-9}$	Vcc, T_A constant measurement referenced to frequency observed with TA=25℃,Vcc=5.0V, in LOCK condition and after 30 days of operation.
	Ten Years Aging	-50		50	$\times 10^{-9}$	
	Warm up	-50		50	$\times 10^{-9}$	Vcc=5.0V; T_A=25℃; constant measurement referenced to 10.00MHz, after power on 5mins with reference lock.
	Phase Noise		-110	-100	dBc/Hz	10Hz
			-143	-133		100Hz
			-150	-145		1KHz
			-155	-150		10KHz
			-155	-150		100KHz
			-160	-155		1MHz
Supply Voltage	Supply Voltage	4.75	5.0	5.25	V	
	Warm Up Current			1000	mA	
	Steady Current			400	mA	@25℃
	AC Ripple			50	mV pk-pk	10Hz to 1MHz

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

5. Environmental Conditions

Table 5 Environmental Conditions

Parameter	Conditions	
Operating Temperature	-40℃ to 70℃	
Storage Temperature	-55℃ to 105℃	
Storage Humidity	30%~80%	
ESD Level	Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.	
	Machine Model, class B: 200V to 400V; ANSI/ESDA/JEDEC JS-001-2010.	
Moisture Sensitivity Level	Not humidity sensitive.	
Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz～500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z), IEC 68-2-06 Test Fc.	
Shock	50g; 11ms; half sine wave (3 times for each 3 directions X, Y, Z), IEC 68-2-27 Test Ea/Severity 50A.	
Relative Humidity	20%～70%	Full Package Storage
Temperature	-10℃~35℃	

Bldg 16,.N.Ind.Zone,SSL Industry Park,
Dongguan City, Guangdong Province,
PRC China
TEL:0086-0769-88010888
FAX:0086-0769-81800098

6. Mechanical Structure (mm)

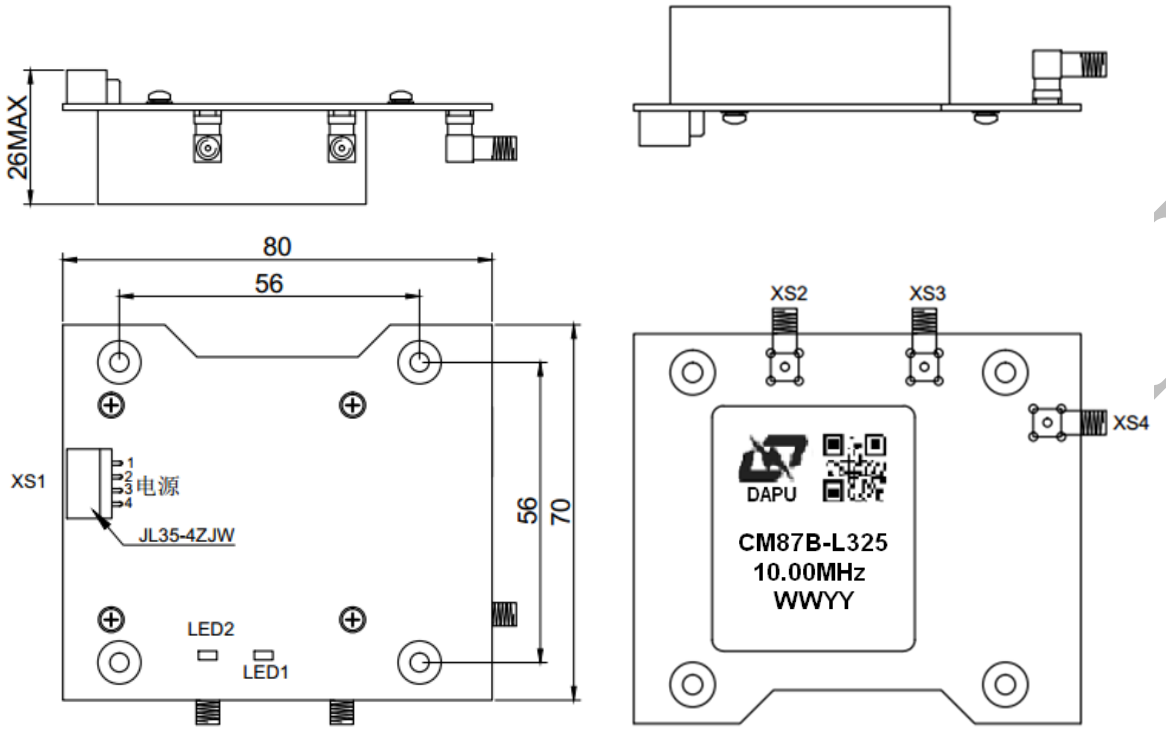

Figure 2 Mechanical structure

Note1: Tolerance ± 0.3mm without mark.

Note2: WW represents Week.
YY represents Year.

Note3: XS1 JL35-4ZJW
XS2,XS3,XS4 SMA-KWHD1

7. Package（mm）

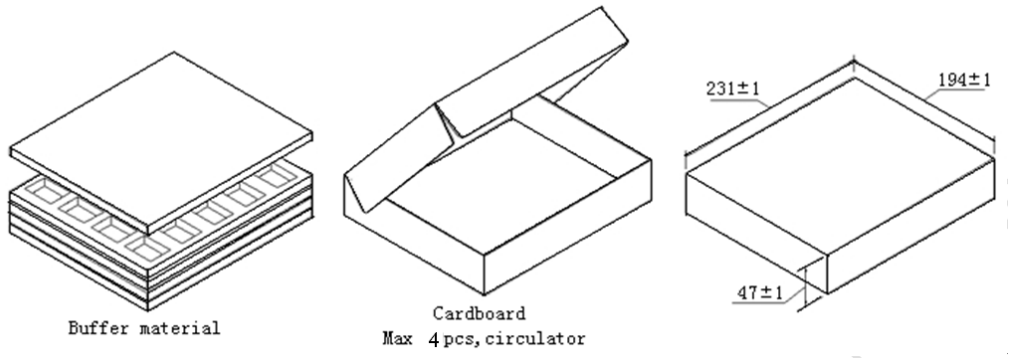

Figure 3 Package