

## Design Change Notification

NO. A0051266-1/1

January 6th, 2021

To: Sanyo Denki America Cooling Distributors

Product: Blower

Model: San Ace B52 12V models

109BC12G\*, 109BC12H\*, 109BC12F\*, 109BC12M\*

(Please refer Attached Sheet for a complete part number list.)

SANYO DENKI CO.,LTD.  
Design Dept., Cooling Systems Div.

Approved	Checked	Designed
		

SANYO DENKI *America*, Inc.  
Cooling Systems Division

No.	Contents	Existence	Modification	Description
1	Drive IC	Manufacturer: Asahi Kasei Microdevices Corporation  Model: EM365T and EM366T	Manufacturer: Nuvoton Technology Corporation Japan (Former name: Panasonic Semiconductor Solutions Co., Ltd.)  Model: AN44170A	We change the drive IC and the circuit due to difficulty in procuring the drive IC used for the current models.  There is no influence in the product specification other than the sensor specification.
2	Sensor Spec.	9D0001H186 Locked rotor condition: VOH	9D0001H111 Locked rotor Condition: VOH or VOL (Differs depending on the position of rotor) Please refer to the attached sensor specification.	<Implementation date> ・ We will apply this change around May, 2021 on the basis of the present information of the demand. ・ This change shall be applied when all the stock of drive IC has been used up. ・ Lot No. is used for identification of the change.

**[Attached Sheet 1: Applicable Model List]**

109BC12FA7-1
109BC12FA7-20
109BC12FA7-2
109BC12FC7-1
109BC12FC7-20
109BC12FD7-1
109BC12FD7-20
109BC12GA7-1
109BC12GA7-20
109BC12GA7-21
109BC12GA7-3
109BC12GC7-1
109BC12GC7-20
109BC12GC7-21
109BC12GC7-22
109BC12GC7-23
109BC12GC7-24
109BC12GC7-26
109BC12GD7-1
109BC12GD7-20
109BC12GD7-21
109BC12GD7-22
109BC12GD7-3
109BC12HA7-1
109BC12HC7-1
109BC12HC7-20
109BC12HD7-1
109BC12HD7-2
109BC12MA7-1
109BC12MC7-1
109BC12MC7-21
109BC12MC7-22
109BC12MD7-1
109BC12MD7-20

**[Attached Sheet 2: Sensor Spec 9D0001H186]**

### SENSOR SPECIFICATION FOR BRUSHLESS DC FAN

ブラシレスDCファン センサー仕様

1. OUTPUT CIRCUIT - OPEN COLLECTOR  
出力回路-オープンコレクタ

2. SPECIFICATION  
仕様

$V_{ce} = +13.8 \text{ V DC MAX.}$   
 $I_c = 5 \text{ mA MAX. (} V_{ce(\text{SAT})} = 0.6 \text{ V MAX.)}$

PULL UP VOLTAGE: +13.8 V DC MAX.  
プルアップ電源

PULL UP RESISTOR  
プルアップ抵抗

DC FAN DCファン内部

SENSOR (センサー)

$I_c = 5 \text{ mA MAX.}$

SENSOR OUTPUT センサー出力

(b) LOCKED ROTOR CONDITION  
羽根ロック時

$V_{OH} = \underline{\hspace{2cm}}$

$V_{OL} = \underline{\hspace{2cm}}$

3. WAVEFORM OF SENSOR OUTPUT  
センサー出力波形

(a) RUNNING CONDITION  
通常回転時

(ONE ROTATION)  
(ファン1回転)

$T_{1-4} = (1/4) T_0$

$T_{1-4} = (1/4) T_0 = 60/4 \text{ N (s)}$

$N = \text{FAN ROTATION SPEED (min}^{-1}\text{)}$   
ファン回転速度

					承認 APPROVED BY <i>H. Nakaguchi</i> 09-04-10		PULSE SENSOR パルスセンサー
			単位 UNIT m.m		検査 CHECKED BY <i>K. YEN</i> 09-04-10		名称 TITLE SENSOR SPECIFICATION BLDCファン センサー仕様
A	新編作成 K.YEN	09-04-10	尺貫 SCALE				
B	# DESCRIPTION	B 号 DATE			設計 DESIGNED BY K.YEN 09-04-10		図番 DRAWING NO. 9D0001H186
山洋電気株式会社 SANYO DENKI CO., LTD.							図番 DRAWING NO. 9D0001H186

**[Attached Sheet 3: Sensor Spec 9D0001H111]**

### SENSOR SPECIFICATION FOR BRUSHLESS DC FAN

ブラシレスDCファン センサー仕様

1. OUTPUT CIRCUIT - OPEN COLLECTOR  
出力回路 - オープンコレクタ

2. SPECIFICATION  
仕様

$V_{ce} = +13.8 \text{ V DC MAX.}$   
 $I_c = 5 \text{ mA MAX. (} V_{ce} < \text{SAT) = 0.6 V MAX.}$

PULL UP VOLTAGE: +13.8 V DC MAX.  
プルアップ電源

PULL UP RESISTOR  
プルアップ抵抗

DC FAN DCファン内部

SENSOR (センサー)

$I_c = 5 \text{ mA MAX.}$

SENSOR OUTPUT センサー出力

3. WAVEFORM OF SENSOR OUTPUT  
センサー出力波形

(a) RUNNING CONDITION  
通常回転時

$T_{1-4} = (1/4) T_0$   
 $T_{1-4} = (1/4) T_0 = 60/4 \text{ N (s)}$   
 $N = \text{FAN ROTATION SPEED (min}^{-1}\text{)}$   
 $\text{ファン回転速度}$

(b) LOCKED ROTOR CONDITION  
羽根ロック時

SENSOR OUTPUT IS FIXED EITHER (b-1) OR (b-2) AT LOCKED ROTOR CONDITION.  
下図のどちらかに固定される。

(b-1)  $V_{OH}$  \_\_\_\_\_  
 $V_{OL}$  \_\_\_\_\_

(b-2)  $V_{OH}$  \_\_\_\_\_  
 $V_{OL}$  \_\_\_\_\_

			承認 APPROVED BY <i>M. Murata</i> 06-10-12	PULSE SENSOR パルスセンサー
			検査 CHECKED BY <i>M. Murata</i> 06-10-12	名称 TITLE SENSOR SPECIFICATION
日 EDO080323	06-10-12	単位 UNIT mm	設計 DESIGNED BY J. QUIAMBAO 06-10-12	名称 TITLE BLDCファン センサー仕様
新編作成 03-04-24	日 付 DATE	図号 DWG NO. 9D0001H111	図名 DWG TITLE 100514588	社名 COMPANY 山洋電気株式会社 SANYO DENKI CO., LTD.