Design Change Notification

April 12th, 2022

To: Sanyo Denki America Cooling Distributors

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

Approved	Checked	Designed
渡辺 '22.04.05 道徳	中村 '22.04.05 俊之	高桑 '22.04.05 宗仙

SANYO DENKI America, Inc.
Cooling Systems Division

Product: BLDC FAN MOTOR

Model: San Ace 80W (9WL)　80mm sq. x 25mm thick

No.	Contents	Before Change	After Change	Description
1	Motor drive IC, electronic parts, Motor Windings and PWB	Use motor drive IC manufactured by ON-Semiconductor.	Use motor drive IC manufactured by Toshiba, Rohm or Nisshinbo-Micro-Devices.	Change to the motor drive IC due to discontinuation of production by the semiconductor manufacturer. Also change to some electric parts except IC, Motor windings and PWB due to the change of the motor drive IC.
2	Specifications	See the Attached Sheet.	See the Attached Sheet.	
3	Implementation Date			Implementation Date: From February, 2023 production (Estimated). Please note that the changeover schedule to new IC may change according to the number of products in the inventory.

No. A0052891 - Attached Sheet 1 – 1/1

[MODEL LIST]

San Ace 80W (9WL) – 80mm x 25mm thick

MODEL	Change contents
9WL0812G4D001	Attached Sheet 2
9WL0812H4001 9WL0812H4002 9WL0812L4001 9WL0812L4002	Attached Sheet 3
9WL0812P4J001 9WL0812P4J003 9WL0812P4J005 9WL0812P4J006	Attached Sheet 4
9WL0812P4G001 1022-115851	Attached Sheet 5
9WL0812P4H001 9WL0812P4H003 9WL0812P4H005	Attached Sheet 6
9WL0824J4002 9WL0824J4004 9WL0824J4E003	Attached Sheet 7
9WL0824H4001 9WL0824H4002 9WL0824H4D001 9WL0824F4001 9WL0824F4002 9WL0824L4001 9WL0824L4002	Attached Sheet 8

MODEL	Change contents
9WL0824P4J001 9WL0824P4J003 9WL0824P4J004 9WL0824P4J005 9WL0824P4J006	Attached Sheet 9
9WL0824P4G001 9WL0824P4H001 9WL0824P4H003 9WL0824P4H004	Attached Sheet 10

No. A0052891 - Attached Sheet 2 - 1/1

[MODEL]

9WL0812G4D001

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11660RV	BD69740 or BD6974
	Manufacture	On-semiconductor	Rohm
Operating voltage		No change	
Electrical current		No change	
Speed		No change	
Operating temp.		No change	
Sound pressure level		No change	
Control terminal		Non-applicable	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		Non-applicable	
Sensor spec.		No change	
Life Expectancy		No change	

No. A0052891 - Attached Sheet 3 - 1/1

[MODEL]

9WL0812H4001, 9WL0812H4002,

9WL0812L4001, 9WL0812L4002

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11970	TC78B002FNG
	Manufacture	On-semiconductor	Toshiba
Operating voltage		No change	
Electrical current		No change	
Speed		No change	
Operating temp.		No change	
Sound pressure level		No change	
Control terminal		Non-applicable	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		Non-applicable	
Sensor spec.		No change	
Life Expectancy		No change	

No. A0052891 - Attached Sheet 4 - 1/1

[MODEL]

9WL0812P4J001, 9WL0812P4J003, 9WL0812P4J005, 9WL0812P4J006

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11967	BD69730 or BD6973
	Manufacture	On-semiconductor	Rohm
Operating voltage		No change	
Electrical current		No change	
Speed		No change	
Operating temp.		No change	
Sound pressure level		No change	
Control terminal		No change	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		No change	
Sensor spec.		No change	
Life Expectancy		No change	

No. A0052891 - Attached Sheet 5 - 1/1

[MODEL]

9WL0812P4G001,

1022-115851

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11660	BD69730 or BD6973
	Manufacture	On-semiconductor	Rohm
Operating voltage		No change	
Electrical current		No change	
Speed		No change	
Operating temp.		No change	
Sound pressure level		No change	
Control terminal		No change	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		No change	
Sensor spec.		No change	
Life Expectancy		No change	

No. A0052891 - Attached Sheet 6 - 1/2

[MODEL]

9WL0812P4H001, 9WL0812P4H003, 9WL0812P4H005

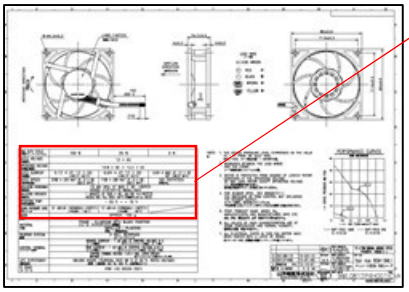
[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11970	TC78B002FNG
	Manufacture	On-semiconductor	Toshiba
Operating voltage		No change	
Electrical current		0.04[A] @ PWM 25% Refer to Fig.1	0.04[A] @ PWM 30% Refer to Fig.1
Speed		1100 +/- 330 [min^{-1}] @ PWM25% Refer to Fig.1	1100 +/- 330 [min^{-1}] @ PWM30% Refer to Fig.1
Operating temp.		No change	
Sound pressure level		13[dBA(A)] @ PWM 25% Refer to Fig.1	13[dBA(A)] @ PWM 30% Refer to Fig.1
Control terminal		No change	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		Refer to Fig.2	
Sensor spec.		No change	
Life Expectancy		No change	

No. A0052891 - Attached Sheet 6 - 2/2

FIG.1

Before Change

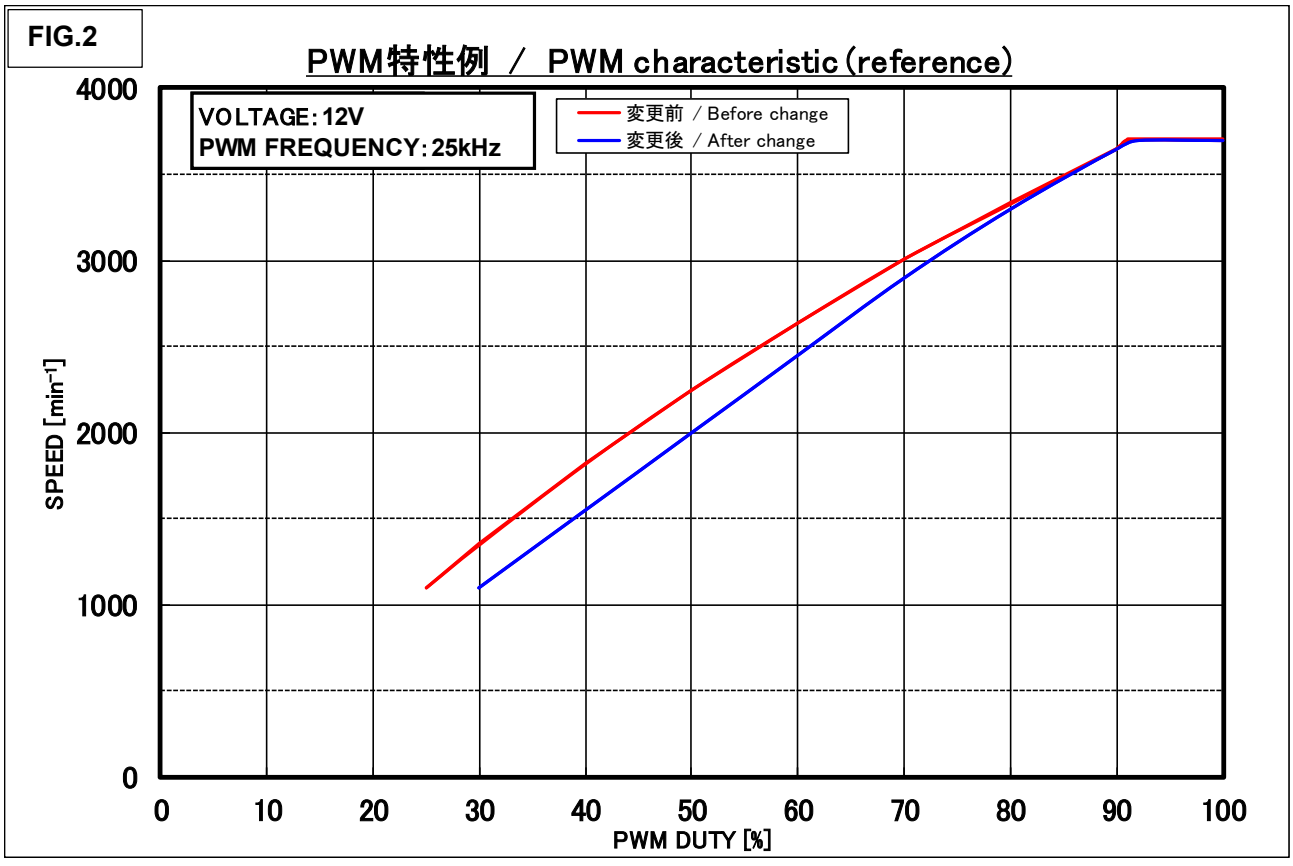


PWM DUTY CYCLE	100 %	25 %	0 %
RATED VOLTAGE	12 V DC		
OPERATING VOLTAGE	10.8 V DC ~ 13.2 V DC		
RATED CURRENT	0.12 A AT 12 V DC (DC12 Vにて)	0.04 A AT 12 V DC (DC12 Vにて)	0.04 A MAX AT 12 V DC (DC12 Vにて)
RATED SPEED	3700 ± 370 min⁻¹ AT 12 V DC (DC12 Vにて)	1100 ± 330 min⁻¹ AT 12 V DC (DC12 Vにて)	NO ROTATION 回転停止
INSULATION RESISTANCE	10 MΩ MIN. AT 500 V DC (NOTE2) DC500 Vメガーにて10 MΩ以上(注2)		
DIELECTRIC STRENGTH	1 MINUTE AT 500 V AC, 50/60 Hz(NOTE2) AC50/60 Hz, 500 Vにて1分間耐えること(注2)		
OPERATING TEMP.	- 20 ℃ ~ + 70 ℃		
SOUND PRESSURE LEVEL	31 dB(A) (NOMINAL) (NOTE1) (中心値)(注1)	13 dB(A) (NOMINAL) (NOTE1) (中心値)(注1)	

After Change

PWM DUTY CYCLE	100 %	30 %	0 %
RATED VOLTAGE	12 V DC		
OPERATING VOLTAGE	10.8 V DC ~ 13.2 V DC		
RATED CURRENT	0.12 A AT 12 V DC (DC12 Vにて)	0.04 A AT 12 V DC (DC12 Vにて)	0.04 A MAX AT 12 V DC (DC12 Vにて)
RATED SPEED	3700 ± 370 min⁻¹ AT 12 V DC (DC12 Vにて)	1100 ± 330 min⁻¹ AT 12 V DC (DC12 Vにて)	NO ROTATION 回転停止
INSULATION RESISTANCE	10 MΩ MIN. AT 500 V DC (NOTE2) DC500 Vメガーにて10 MΩ以上(注2)		
DIELECTRIC STRENGTH	1 MINUTE AT 500 V AC, 50/60 Hz(NOTE2) AC50/60 Hz, 500 Vにて1分間耐えること(注2)		
OPERATING TEMP.	- 20 ℃ ~ + 70 ℃		
SOUND PRESSURE LEVEL	31 dB(A) (NOMINAL) (NOTE1) (中心値)(注1)	13 dB(A) (NOMINAL) (NOTE1) (中心値)(注1)	

FIG.2



No. A0052891 - Attached Sheet 7 - 1/1

[MODEL]

9WL0824J4002, 9WL0824J4004, 9WL0824J4E003

[Contents of change]

		Before Change	After Change
Motor drive IC	Pulse sensor Or sensor-less type	LB11967	BD69730 or BD6973
	Lock sensor type		BD69740 or BD6974
	Manufacture	On-semiconductor	Rohm
Operating voltage		No change	
Electrical current		No change	
Speed		No change	
Operating temp.		No change	
Sound pressure level		No change	
Control terminal		Non-applicable	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		Non-applicable	
Sensor spec.		No change	
Life Expectancy		No change	

No. A0052891 - Attached Sheet 8 - 1/1

[MODEL]

9WL0824H4001, 9WL0824H4002, 9WL0824H4D001,

9WL0824F4001, 9WL0824F4002,

9WL0824L4001, 9WL0824L4002

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LV8860	NJW4320
	Manufacture	On-semiconductor	Nisshinbo-Micro-Devices
Operating voltage		No change	
Electrical current		No change	
Speed		No change	
Operating temp.		No change	
Sound pressure level		No change	
Control terminal		Non-applicable	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		Non-applicable	
Sensor spec.		No change	
Life Expectancy		No change	

No. A0052891 - Attached Sheet 9 - 1/1

[MODEL]

9WL0824P4J001, 9WL0824P4J003, 9WL0824P4J004, 9WL0824P4J005, 9WL0824P4J006

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11967	BD69730 or BD6973
	Manufacture	On-semiconductor	Rohm
Operating voltage		No change	
Electrical current		No change	
Speed		No change	
Operating temp.		No change	
Sound pressure level		No change	
Control terminal		No change	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		No change	
Sensor spec.		No change	
Life Expectancy		No change	

No. A0052891 - Attached Sheet 10 - 1/1

[MODEL]

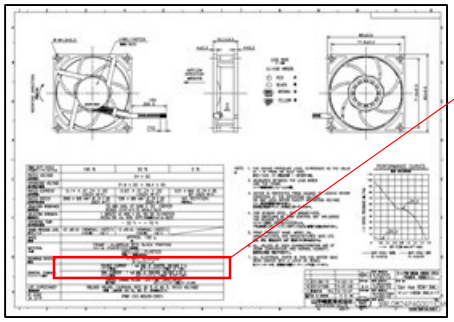
9WL0824P4G001,

9WL0824P4H001, 9WL0824P4H003, 9WL0824P4H004

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LV8860	NJW4320
	Manufacture	On-semiconductor	Nisshinbo-Micro-Devices
Operating voltage		No change	
Electrical current		No change	
Speed		No change	
Operating temp.		No change	
Sound pressure level		No change	
Control terminal		Source current: 1 mA MAX. Refer to FIG.1	Source current: 2 mA MAX. Refer to FIG.1
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		No change	
Sensor spec.		No change	
Life Expectancy		No change	

FIG.1



Before Change

SOURCE CURRENT : 1 mA MAX. AT CONTROL VOLTAGE 0 V
ソース電流 : 以下（コントロール電圧 0 V時）
SINK CURRENT : 1 mA MAX. AT CONTROL VOLTAGE 5.25 V
シンク電流 : 以下（コントロール電圧 5.25 V時）
CONTROL TERMINAL VOLTAGE : 5.25 V MAX. (OPEN CIRCUIT)
端子電圧 : 以下（コントロール端子オープン時）

After Change

SOURCE CURRENT : 2 mA MAX. AT CONTROL VOLTAGE 0 V
ソース電流 : 以下（コントロール電圧 0 V時）
SINK CURRENT : 1 mA MAX. AT CONTROL VOLTAGE 5.25 V
シンク電流 : 以下（コントロール電圧 5.25 V時）
CONTROL TERMINAL VOLTAGE : 5.25 V MAX. (OPEN CIRCUIT)
端子電圧 : 以下（コントロール端子オープン時）