

Design Change Notification

March 4th, 2022

To: Sanyo Denki America Cooling Distributors

Product: BLDC FAN MOTOR _____

Model: San Ace 60 (S) _____ 60mm sq. x 25mm thick
(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	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 Rohm or Toshiba.	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. A0052826 - Attached Sheet 1 - 1/2

[MODEL LIST]

San Ace 60(S) – 60mm x 25mm thick

MODEL	Change contents
9S0612S401	Attached Sheet 2
9S0612S4011	
9S0612S402	
9S0612S403	
9S0612S4031	
9S0612S404	
9S0612S4041-C	
9S0612S405	
9S0612S406	
9S0612S407	
9S0612S408	
9S0612S410	
9S0612S412	
9S0612S4D01	
9S0612S4D04	
9S0612S401-A01	
1023-100642	
9S0612A4031	Attached Sheet 3
9S0612H401	Attached Sheet 4
9S0612H4011	
9S0612H402	
9S0612H4021	
9S0612H4041	
9S0612H4051	
9S0612H407	
9S0612H4081	
9S0612H410	
9S0612H4101	
9S0612H413	
9S0612H414	
9S0612H416	
9S0612H417	
9S0612H418	
9S0612H419	
9S0612H4D01	
9S0612H4D011	
9S0612H4D011-2	
9S0612H401-A01	

MODEL	Change contents
9S0612F401	Attached Sheet 5
9S0612F4011	
9S0612F402	
9S0612F4021	
9S0612F403	
9S0612F4031	
9S0612F404	
9S0612F4041	
9S0612F407	
9S0612F408	
9S0612F409	
9S0612F410	
9S0612F412	
9S0612F4D01	
9S0612F4D011	
9S0612F401-A01	
9S0612F401-A02	
9S0612F402-A01	
9S0612M401	Attached Sheet 6
9S0612M4011	
9S0612M402	
9S0612M4021	
9S0612M4031	
9S0612M404	
9S0612M405	
9S0612M4051	
9S0612M4061	
9S0612M407	
9S0612M408	
9S0612M409	
9S0612M410	
9S0612M411	
9S0612M412	
9S0612M413	
9S0612M4D01	
9S0612M4D011	
9S0612B4031	Attached Sheet 7

No. A0052826 - Attached Sheet 1 - 2/2**[MODEL LIST]**

San Ace 60(S) – 60mm x 25mm thick

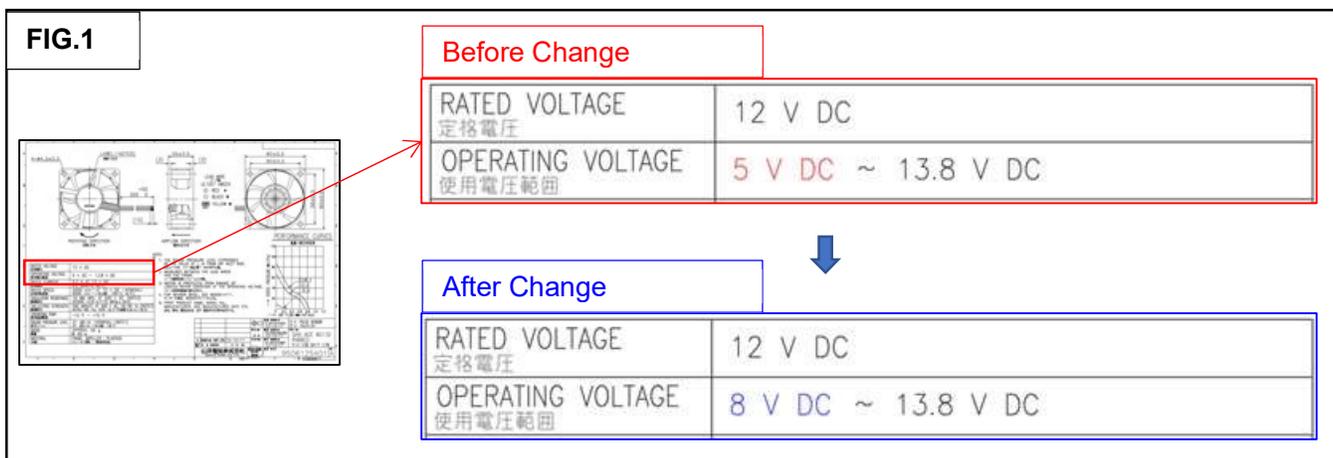
MODEL	Change contents
9S0612P4S01 9S0612P4S011 9S0612P4S041 9S0612P4S05 9S0612P4S07 9S0612P4S09 9S0612P4S10	Attached Sheet 8
9S0612P4S06	Attached Sheet 9
9S0612P4H01 9S0612P4H011 9S0612P4H04 9S0612P4H08 9S0612P4H09 9S0612P4H10 9S0612P4H15 9S0612P4H16 9S0612P4H17 9S0612P4H19 9S0612P4H20 9S0612P4H01-A01	Attached Sheet 10
9S0612P4F01 9S0612P4F011	Attached Sheet 11
9S0612P4M01 9S0612P4M06	Attached Sheet 12

No. A0052826 - Attached Sheet 2 - 1/1**[MODEL]**

9S0612S401, 9S0612S4011, 9S0612S402, 9S0612S403, 9S0612S4031, 9S0612S404, 9S0612S4041-C,
 9S0612S405, 9S0612S406, 9S0612S407, 9S0612S408, 9S0612S410, 9S0612S412,
 9S0612S4D01, 9S0612S4D04,
 9S0612S401-A01, 1023-100642

[Contents of change]

		Before Change	After Change
Motor drive IC	Pulse sensor Or sensor-less type	LA6583	BD6962
	Lock sensor type		BD6964
	Manufacture	On-semiconductor	Rohm
Operating voltage		5 VDC to 13.8 VDC Refer to FIG.1	8 VDC to 13.8 VDC Refer to FIG.1
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	



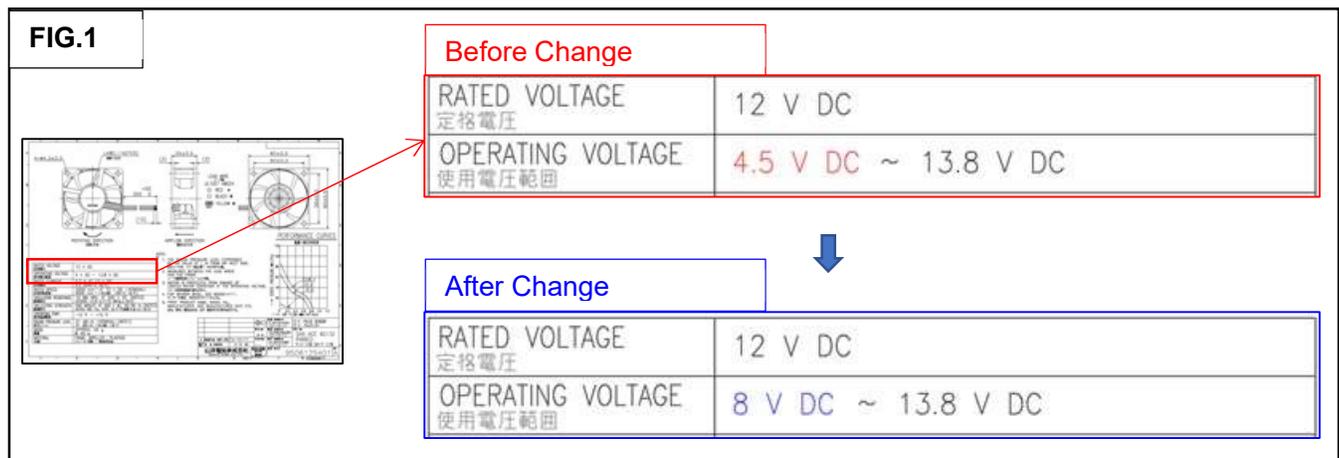
No. A0052826 - Attached Sheet 3 - 1/1

[MODEL]

9S0612A4031

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LA6583	BD6962
	Manufacture	On-semiconductor	Rohm
Operating voltage		4.5 VDC to 13.8 VDC Refer to FIG.1	8 VDC to 13.8 VDC Refer to FIG.1
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	



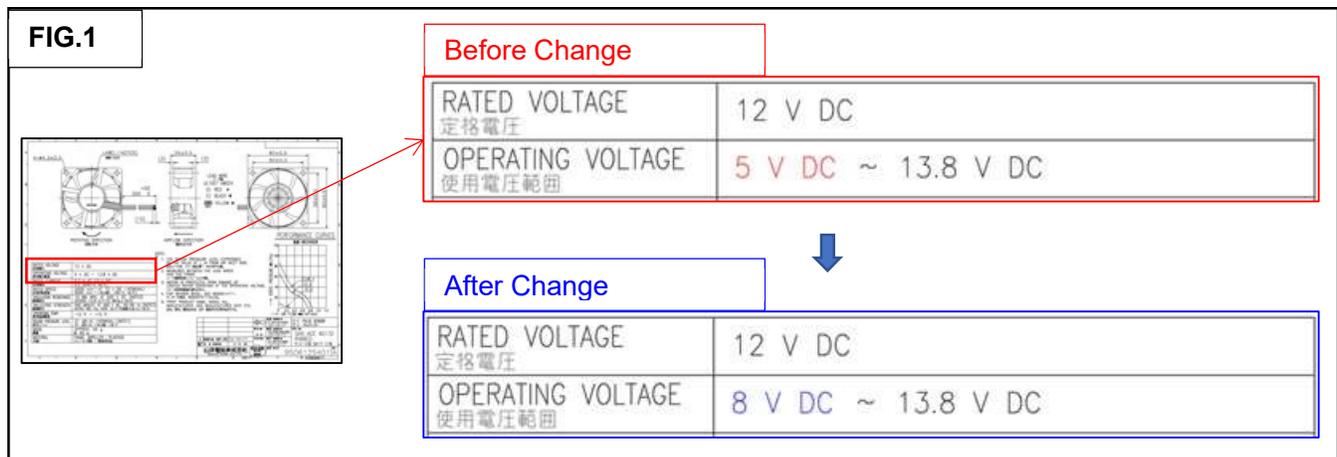
No. A0052826 - Attached Sheet 4 - 1/1

[MODEL]

9S0612H401, 9S0612H4011, 9S0612H402, 9S0612H4021, 9S0612H4041, 9S0612H4051, 9S0612H407,
 9S0612H4081, 9S0612H410, 9S0612H4101, 9S0612H413, 9S0612H414, 9S0612H416, 9S0612H417,
 9S0612H418, 9S0612H419,
 9S0612H4D01, 9S0612H4D011, 9S0612H4D011-2,
 9S0612H401-A01

[Contents of change]

		Before Change	After Change
Motor drive IC	Pulse sensor Or sensor-less type	LA6583	BD6962
	Lock sensor type		BD6964
	Manufacture	On-semiconductor	Rohm
Operating voltage		5 VDC to 13.8 VDC Refer to FIG.1	8 VDC to 13.8 VDC Refer to FIG.1
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	



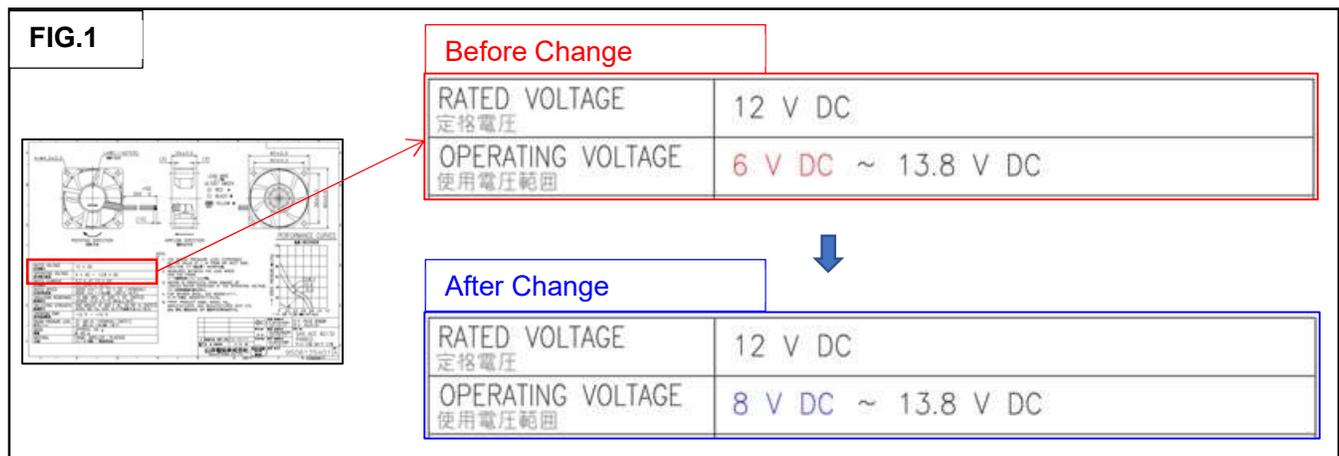
No. A0052826 - Attached Sheet 5 - 1/1

[MODEL]

9S0612F401, 9S0612F4011, 9S0612F402, 9S0612F4021, 9S0612F403, 9S0612F4031, 9S0612F404,
 9S0612F4041, 9S0612F407, 9S0612F408, 9S0612F409, 9S0612F410, 9S0612F412,
 9S0612F4D01, 9S0612F4D011,
 9S0612F401-A01, 9S0612F401-A02, 9S0612F402-A01

[Contents of change]

		Before Change	After Change
Motor drive IC	Pulse sensor Or sensor-less type	LA6583	BD6962
	Lock sensor type		BD6964
	Manufacture	On-semiconductor	Rohm
Operating voltage		6 VDC to 13.8 VDC Refer to FIG.1	8 VDC to 13.8 VDC Refer to FIG.1
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	



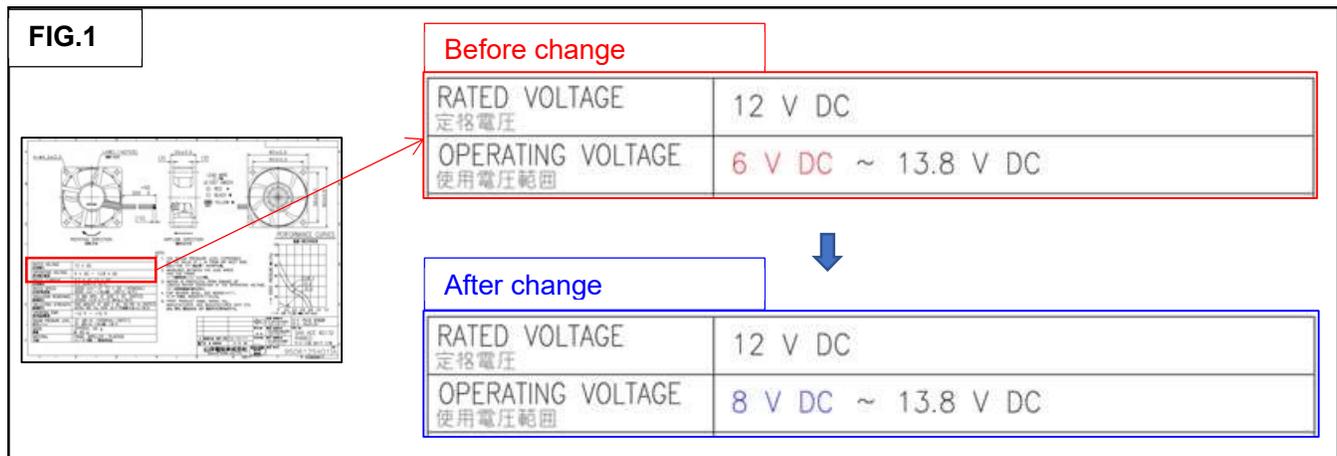
No. A0052826 - Attached Sheet 6 - 1/1

[MODEL]

9S0612M401, 9S0612M4011, 9S0612M402, 9S0612M4021, 9S0612M4031, 9S0612M404, 9S0612M405,
 9S0612M4051, 9S0612M4061, 9S0612M407, 9S0612M408, 9S0612M409, 9S0612M410, 9S0612M411,
 9S0612M412, 9S0612M413,
 9S0612M4D01, 9S0612M4D011

[Contents of change]

		Before Change	After Change
Motor drive IC	Pulse sensor Or sensor-less type	LA6583	BD6962
	Lock sensor type		BD6964
	Manufacture	On-semiconductor	Rohm
Operating voltage		6 VDC to 13.8 VDC Refer to FIG.1	8 VDC to 13.8 VDC Refer to FIG.1
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	



No. A0052826 - Attached Sheet 7 - 1/1

[MODEL]

9S0612B4031

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LA6583	BD6962
	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	

No. A0052826 - Attached Sheet 8 - 1/1

[MODEL]

9S0612P4S01, 9S0612P4S011, 9S0612P4S041, 9S0612P4S05, 9S0612P4S07, 9S0612P4S09, 9S0612P4S10

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11660FV	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		No change	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		No change	
Sensor spec.		No change	

No. A0052826 - Attached Sheet 9 - 1/2

[MODEL]

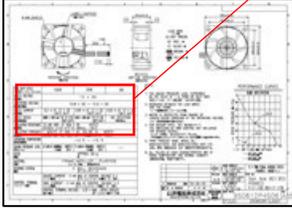
9S0612P4S06

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11660FV	TC78B002FNG
	Manufacture	On-semiconductor	Toshiba
Operating voltage		No change	
Electrical current		0.05[A] @ PWM 20% Refer to Fig.1	0.05[A] @ PWM 30% Refer to Fig.1
Speed		1450 +/- 300 [min ⁻¹] @ PWM 20% Refer to Fig.1	1450 +/- 440 [min ⁻¹] @ PWM 30% Refer to Fig.1
Operating temp.		No change	
Sound pressure level		12[dBA(A)] @ PWM 20% Refer to Fig.1	12[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	

No. A0052826 - Attached Sheet 9 - 2/2

FIG.1



Before Change

PWM DUTY CYCLE PWMデューティサイクル	100%	20%	0%
RATED VOLTAGE 定格電圧	12 V DC		
OPERATING VOLTAGE 使用電圧範囲	10.8 V DC ~ 12.6 V DC		
RATED CURRENT 定格電流	0.2 A AT 12 V DC (DC12 Vにて)	0.05 A AT 12 V DC (DC12 Vにて)	0.03 A AT 12 V DC (DC12 Vにて)
RATED SPEED 定格回転速度	5000 ± 500 min ⁻¹ AT 12 V DC (DC12 Vにて)	1450 ± 300 min ⁻¹ AT 12 V DC (DC12 Vにて)	NO ROTATION 回転停止

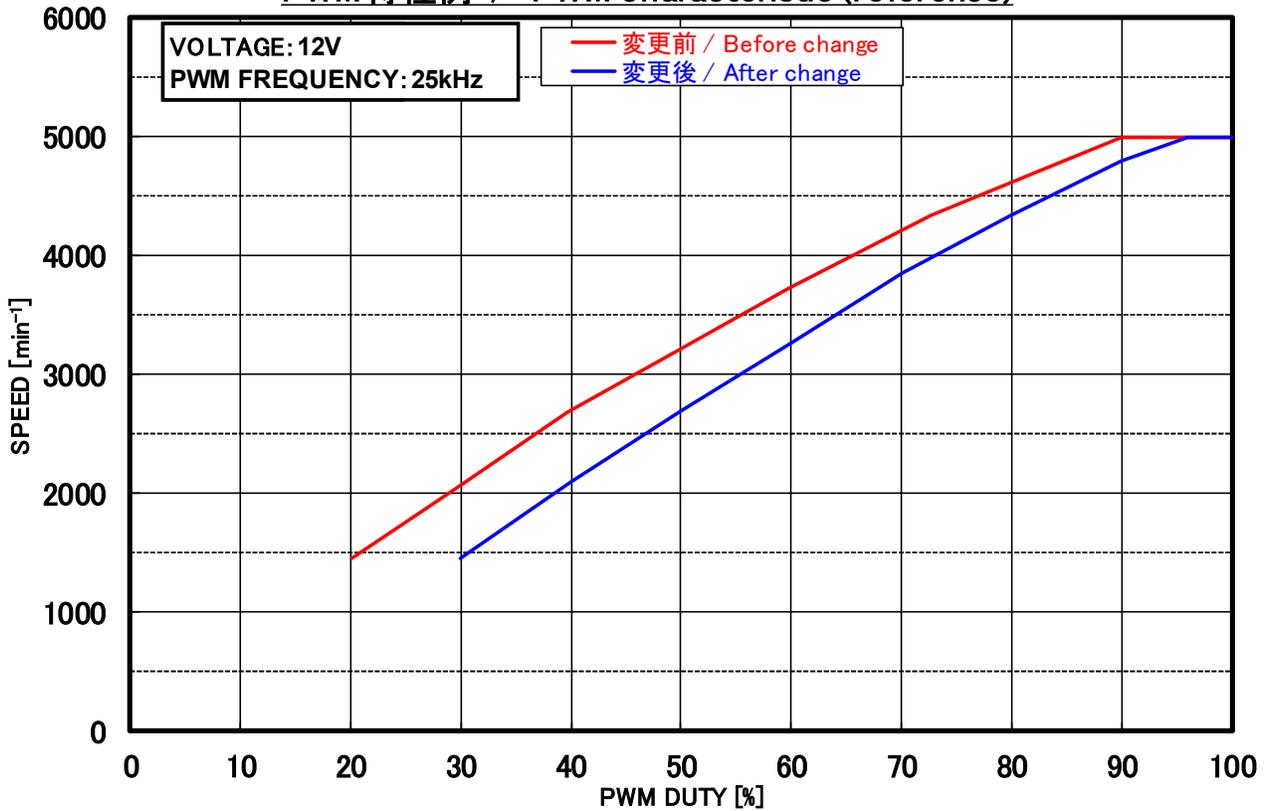


After Change

PWM DUTY CYCLE PWMデューティサイクル	100%	30%	0%
RATED VOLTAGE 定格電圧	12 V DC		
OPERATING VOLTAGE 使用電圧範囲	10.8 V DC ~ 12.6 V DC		
RATED CURRENT 定格電流	0.2 A AT 12 V DC (DC12 Vにて)	0.05 A AT 12 V DC (DC12 Vにて)	0.03 A AT 12 V DC (DC12 Vにて)
RATED SPEED 定格回転速度	5000 ± 500 min ⁻¹ AT 12 V DC (DC12 Vにて)	1450 ± 440 min ⁻¹ AT 12 V DC (DC12 Vにて)	NO ROTATION 回転停止

FIG.2

PWM特性例 / PWM characteristic (reference)



No. A0052826 - Attached Sheet 10 - 1/1

[MODEL]

9S0612P4H01, 9S0612P4H011, 9S0612P4H04, 9S0612P4H08, 9S0612P4H09, 9S0612P4H10, 9S0612P4H15,
 9S0612P4H16, 9S0612P4H17, 9S0612P4H19, 9S0612P4H20,
 9S0612P4H01-A01

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11660FV	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		No change	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		No change	
Sensor spec.		No change	

No. A0052826 - Attached Sheet 11 - 1/1

[MODEL]

9S0612P4F01, 9S0612P4F011

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11660FV	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		No change	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		No change	
Sensor spec.		No change	

No. A0052826 - Attached Sheet 12 - 1/1

[MODEL]

9S0612P4M01, 9S0612P4M06

[Contents of change]

		Before Change	After Change
Motor drive IC	Type name	LB11660FV	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		No change	
Air flow – static pressure character		No change	
PWM duty cycle - Speed characteristic		No change	
Sensor spec.		No change	