









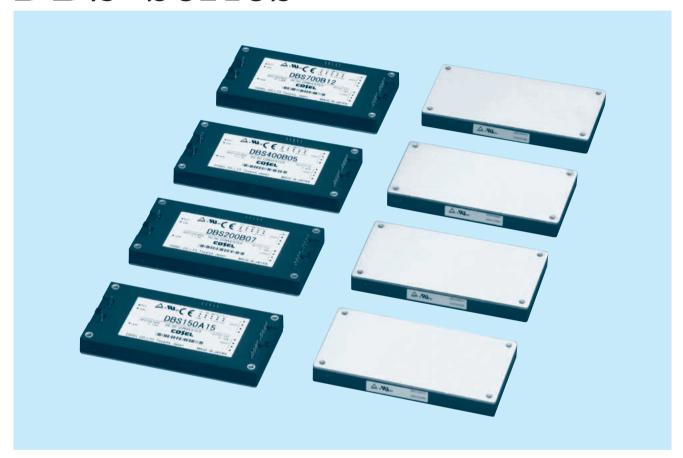








## **DBS-series**



#### Feature

Ideal for distributed power systems

Thin and small size

Built-in overcurrent, overvoltage and thermal protection circuits

Built-in remote ON/OFF (on both side of input and output)

Inverter operating monitoring (IOG)

Mounting hole (M3 tapped)

The beet noise is decreased by installing of the crystal oscillator (DBS700)

#### CE marking

Low Voltage Directive RoHS Directive

#### UKCA marking

Electrical Equipment Safety Regulations RoHS Regulations

#### Safety agency approvals

UL, C-UL recognized, TÜV approved

#### 5-year warranty

## DBS100A/DBS150A

150 15 DB



- ①Series name ②Single output ③Output wattage (4) Input voltage A:DC110V input
- ⑤Output voltage

MODEL	DBS100A05	DBS100A13R8	DBS150A12	DBS150A15	DBS150A24
MAX OUTPUT WATTAGE[W]	100	100.7	150	150	151
DC OUTPUT	5V 20A	13.8V 7.3A	12V 12.5A	15V 10A	24V 6.3A

	MODEL		DBS100A05	DBS100A13R8	DBS150A12	DBS150A15	DBS150A24			
	VOLTAGE[V]		DC45 - 160		DC66 - 160					
INPUT	CURRENT[A]	*1	1.11typ	1.10typ	1.57typ	1.59typ	1.58typ			
PROTECTION CIRCUIT AND OTHERS	EFFICIENCY[%]	*1	82typ	83typ	87typ	86typ	87typ			
OUTPUT	VOLTAGE[V]		5	13.8	12	15	24			
	CURRENT[A]		20	7.3	12.5	10	6.3			
	LINE REGULATION	V[mV]	20max	60max	40max	60max	95max			
	LOAD REGULATIO	N[mV]	40max	150max	100max	150max	190max			
	RIPPLE[mVp-p]	0 to +85°C *2	80max	120max	120max	120max	120max			
	nieecc[iiivp-p]	-20 - 0℃ *2	140max	160max	160max	160max	160max			
	RIPPLE NOISE[mVp-p]	0 to +85°C *2	100max	150max	150max	150max	150max			
	HIPPLE NOISE[IIIVP-P]	-20 - 0°C *2	150max	180max	180max	180max	180max			
	TEMPERATURE REGULATION[mV]	0 to +65℃	50max	180max	120max	180max	280max			
	TEMPERATURE REGULATION[IIIV]	-20 to +85℃	85max	310max	200max	310max	480max			
	DRIFT[mV]	*3	20max	60max	40max	60max	90max			
	START-UP TIME[ms]		200max (DCIN 110V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE		Fixed (TRM pin open), 60 - 110% adjustable by external VR or external voltage							
	OUTPUT VOLTAGE SETTING[V]		4.90 - 5.20	13.25 - 14.35	11.60 - 12.60	14.40 - 15.60	23.04 - 24.96			
	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically							
			5.75 - 7.00V	15.87 - 19.32V	13.80 - 16.80V	17.25 - 21.00V	27.60 - 33.60V			
	REMOTE SENSING		Provided							
	REMOTE ON/OFF		Provided (On both s	160max						
	INPUT-OUTPUT		AC3,000V 1minute,	Cutoff current = 10m/	A, DC500V 50M $\Omega$ mi	n (20±15℃)				
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15°C)							
ISOLATION	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)							
	OUTPUT-RC2,RC3		AC100V 1minute, Cutoff current = 100mA, DC100V 10M $\Omega$ min (20±15 $^{\circ}$ C)							
	OPERATING TEMP.,HUMID.AND A	LTITUDE *4	-20 to +85°C (On aluminum base plate), 20 - 95%RH (Non condensing) (Refer to "Derating"), 3,000m (10,000feet) max							
ENVIRONMENT	STORAGE TEMP.,HUMID.AND	ALTITUDE	-40 to +85°C, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max							
LIVINONWLIVI	VIBRATION		10 - 55Hz, 49.0m/s <sup>2</sup>	(5G), 3minutes perio	d, 60minutes each ald	ong X, Y and Z axis				
	IMPACT		196.1m/s <sup>2</sup> (20G), 11	ms once each along	X, Y and Z axis					
SAFETY	AGENCY APPROV	ALS	UL60950-1, C-UL, E	N62368-1						
OTHERS	CASE SIZE/WEIGH	łT	61 × 12.7 × 116.8mm	[2.4×0.5×4.6 inche	s] (W×H×D) / 150g	max				
	COOLING METHO	D	Conduction cooling (	e.g. heat radiation fro	m the aluminum base	e plate to the attached	d heat sink)			

 <sup>\*1</sup> At rated input(DC110V) and rated load.
 \*2 Ripple and ripple noise is measured by using measuring board with the recommended capacitor Co & the film capacitor 0.1 µF.
 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:RM101). Refer to the manual.

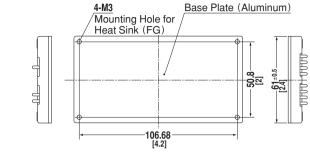
<sup>\*3</sup> Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

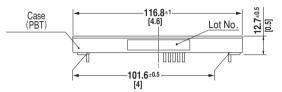
\*4 Please consult us in regard to use from -40°C.

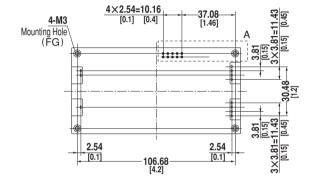
## DBS100A/DBS150A | CD\$EL

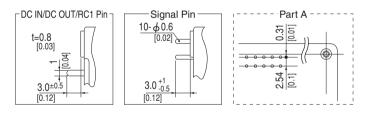


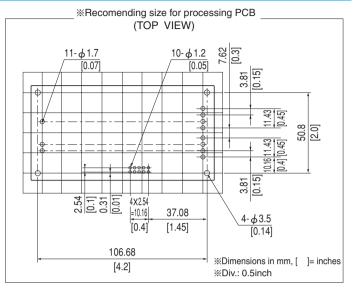
#### **External view**

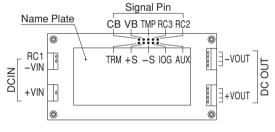












\*Weight: 150g max \*\*Tolerance: ±0.3 [±0.012] \*Base Plate: Aluminum

※Dimensions in mm, [ ]= inches

## **DBS200B**

03 200 DB



- ①Series name ②Single output ③Output wattage
- (4) Input voltage B:DC200 400V (5) Output voltage

MODEL	DBS200B03	DBS200B05	DBS200B07	DBS200B12
MAX OUTPUT WATTAGE[W]	165	200	210	240
DC OUTPUT	3.3V 50A	5V 40A	7.5V 28A	12V 20A

	MODEL		DBS200B03	DBS200B05	DBS200B07	DBS200B12			
	VOLTAGE[V]		DC200 - 400			_			
INPUT	CURRENT[A]	*1	0.75typ	0.86typ	0.87typ	0.99typ			
INPUT  E  V  C  L  L  L  F  OUTPUT  F  OUTPUT  F  OUTPUT  F  OUTPUT  III  ISOLATION  C  C  C  C  C  C  C  C  C  C  C  C  C	EFFICIENCY[%] *1		79typ	83typ	86typ	87typ			
	VOLTAGE[V]		3.3	5	7.5	12			
	CURRENT[A]		50	40	28	20			
	LINE REGULATION	V[mV]	16max	20max	30max	40max			
	LOAD REGULATIO	N[mV]	30max	40max	60max	100max			
	RIPPLE[mVp-p]	0 to +85°C *2	80max	80max	100max	120max			
	HIPPEE[IIIVP-P]	<b>-20 - 0</b> °C <b>*</b> 2	140max	140max	150max	160max			
OUTDUT	RIPPLE NOISE[mVp-p]	0 to +85°C *2	100max	100max	140max	150max			
OUTPUT	MIPPLE NOISE[IIIVP-P]	-20 - 0°C <b>*</b> 2	150max	150max	160max	180max			
	TEMPERATURE REGULATION[mV]	0 to +65℃	35max	50max	75max	120max			
	TEMPERATURE REGULATION[IIIV]	-20 to +85℃	60max	85max	130max	200max			
	DRIFT[mV]	*3	16max	20max	30max	40max			
	START-UP TIME[ms]		200max (DCIN 280V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMENT RANGE		Fixed (TRM pin open), 60 - 110% adjustable by external VR or external voltage						
	OUTPUT VOLTAGE SETTING[V]		3.25 - 3.45	4.90 - 5.20	7.25 - 7.85	11.60 - 12.60			
	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically						
	OVERVOLTAGE PROTECTION		4.00 - 5.50V	5.75 - 7.00V	8.60 - 10.50V	13.80 - 16.80V			
	REMOTE SENSING		Provided						
	REMOTE ON/OFF		Provided (On both side of	vided (On both side of input and output)					
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)						
ISOL ATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)						
IOOLATION	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)						
	OUTPUT-RC2,RC3		AC100V 1minute, Cutoff current = 100mA, DC100V 10M $\Omega$ min (20±15 $^{\circ}$ C)						
	OPERATING TEMP.,HUMID.AND A	ALTITUDE *4	-20 to +85°C (On aluminum base plate), 20 - 95%RH (Non condensing) (Refer to "Derating"), 3,000m (10,000feet) max						
ENVIRONMENT	STORAGE TEMP.,HUMID.AND	ALTITUDE	-40 to +85°C, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max						
LIVIIIONIILIVI	VIBRATION		10 - 55Hz, 49.0m/s² (5G), 3minutes period, 60minutes each along X, Y and Z axis						
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms or	nce each along X, Y and Z	axis				
SAFETY	AGENCY APPROV			68-1 Complies with DEN-A					
OTHERS	CASE SIZE/WEIGH	łT		$\times 0.5 \times 4.6$ inches] (W $\times$ H $\times$	, 0				
	COOLING METHO	D	Conduction cooling (e.g. h	neat radiation from the alur	ninum base plate to the at	tached heat sink)			

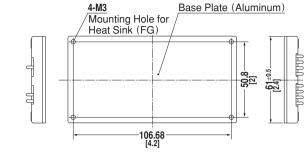
 <sup>\*1</sup> At rated input(DC280V) and rated load.
 \*2 Ripple and ripple noise is measured by using measuring board with the recommended capacitor Co & the film capacitor 0.1 µF.
 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:RM101). Refer to the manual.

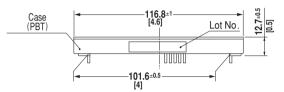
<sup>\*3</sup> Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

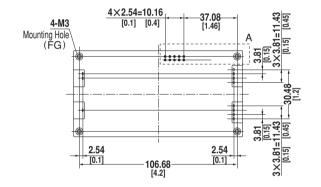
\*4 Please consult us in regard to use from -40°C.

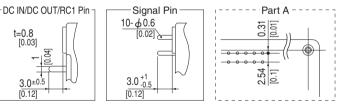


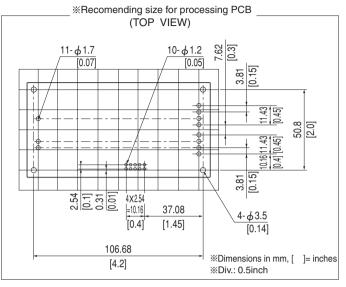
#### **External view**

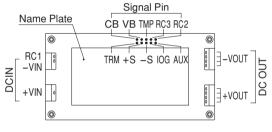


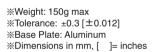








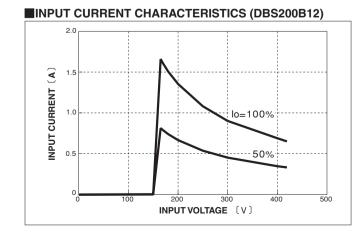


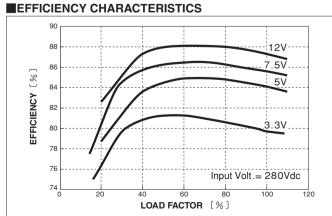


#### **Performance data**

3.0±0.5

[0.12]





## **DBS400B**

400 03 DB



 Series name
 Single output
 Output wattage (4) Input voltage B:DC200 - 400V

⑤Output voltage

MODEL DBS400B03 | DBS400B05 | DBS400B07 | DBS400B12 | DBS400B15 DBS400B18 DBS400B24 DBS400B28 MAX OUTPUT WATTAGE[W] 264 400 405 408 405 396 408 406 DC OUTPUT 5V 80A 12V 34A 15V 27A 18V 22A 3.3V 80A 7.5V 54A 24V 17A 28V 14.5A

	MODEL		DBS400B03	DBS400B05	DBS400B07	DBS400B12	DBS400B15	DBS400B18	DBS400B24	DBS400B28	
	VOLTAGE[V]		DC200 - 400	)							
INPUT	CURRENT[A]	*1	1.19typ	1.72typ	1.68typ	1.67typ	1.66typ	1.61typ	1.67typ	1.63typ	
	EFFICIENCY[%]	*1	79typ	83typ	86typ	87typ	87typ	89typ	87typ	88typ	
	VOLTAGE[V]		3.3	5	7.5	12	15	18	24	28	
	CURRENT[A]		80	80	54	34	27	22	17	14.5	
	LINE REGULATION	V[mV]	16max	20max	30max	40max	60max	60max	95max	95max	
	LOAD REGULATIO	N[mV]	30max	40max	60max	100max	150max	150max	190max	190max	
	RIPPLE[mVp-p]	0 to +85°C *2	80max	80max	100max	120max	120max	120max	120max	120max	
ОИТРИТ	nieecciiivp-pj	-20 - 0°C *2	140max	140max	150max	160max	160max	160max	160max	160max	
	RIPPLE NOISE[mVp-p]	0 to +85°C *2	100max	100max	140max	150max	150max	150max	150max	150max	
	HIPPLE NOISE[IIIVP-P]	-20 - 0℃ *2	150max	150max	160max	180max	180max	180max	180max	180max	
	TEMPERATURE REGULATION[mV]	0 to +65℃	35max	50max	75max	120max	180max	180max	280max	280max	
	TEMPENATURE REGULATION[IIIV]	-20 to +85℃	60max	85max	130max	200max	310max	310max	480max	480max	
	DRIFT[mV]	*3	16max	20max	30max	40max	60max	60max	90max	90max	
	START-UP TIME[ms]		200max (DCIN 280V, Io=100%)								
	OUTPUT VOLTAGE ADJUSTMENT RANGE										
	OUTPUT VOLTAGE SETTING[V]		3.25 - 3.45	4.90 - 5.20	7.25 - 7.85	11.60 - 12.60	14.40 - 15.60	17.28 - 18.72	23.04 - 24.96	26.88 - 29.12	
	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically   4.00 - 5.50V   5.75 - 7.00V   8.60 - 10.50V   13.80 - 16.80V   17.25 - 21.00V   20.70 - 25.20V   27.60 - 33.60V   32.20 - 39.20V								
PROTECTION CIRCUIT AND			4.00 - 5.50V	5.75 - 7.00V	8.60 - 10.50V	13.80 - 16.80V	17.25 - 21.00V	20.70 - 25.20V	27.60 - 33.60V	32.20 - 39.20V	
OTHERS	REMOTE SENSING		Provided								
	REMOTE ON/OFF		Provided (O	n both side of	input and ou	tput)					
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)								
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)								
1002/111011	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)								
	OUTPUT-RC2,RC3		AC100V 1minute, Cutoff current = 100mA, DC100V 10M $\Omega$ min (20±15°C)								
	OPERATING TEMP.;HUMID.AND A		4 -20 to +85℃ (On aluminum base plate), 20 - 95%RH (Non condensing) (Refer to "Derating"), 3,000m (10,000feet) max								
ENVIRONMENT	STORAGE TEMP.;HUMID.AND	ALTITUDE	-40 to +85℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max								
	VIBRATION		10 - 55Hz, 49.0m/s² (5G), 3minutes period, 60minutes each along X, Y and Z axis								
	IMPACT		`	20G), 11ms or		<u> </u>					
SAFETY	AGENCY APPROV			C-UL, EN623							
OTHERS	CASE SIZE/WEIGH			16.8mm [2.4)							
	COOLING METHO	D	Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)								

<sup>\*1</sup> At rated input(DC280V) and rated load.

<sup>\*2</sup> Ripple and ripple noise is measured by using measuring board with the recommended capacitor Co & the film capacitor 0.1 µF.

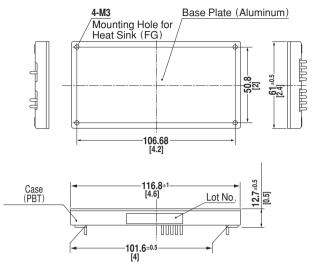
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:RM101). Refer to the manual.

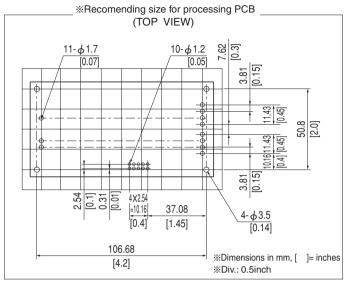
<sup>\*3</sup> Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

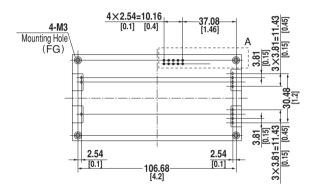
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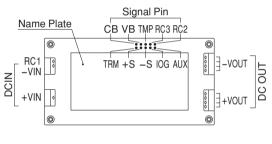


#### **External view**

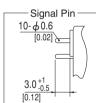


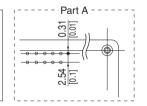










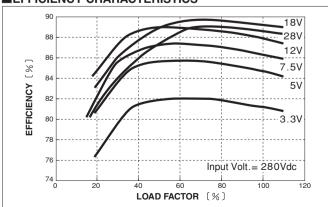


- **%Weight: 180g max**
- \*\*Tolerance: ±0.3 [±0.012]
- **%Base Plate: Aluminum**
- \*\*Dimensions in mm, [ ]= inches
- \*Mounting hole screwing torque: 0.49N·m(5.0kgf·cm)

#### **Performance data**

### **■INPUT CURRENT CHARACTERISTICS (DBS400B12)** INPUT CURRENT (A) lo=100% 50% 100 300 400 500 INPUT VOLTAGE (V)

#### **■**EFFICIENCY CHARACTERISTICS



## **DBS700B**

700 DB



 Series name
 Single output
 Output wattage (4) Input voltage B:DC200 - 400V (5) Output voltage ⑥Optional T: with Mounting hole  $(\phi 3.4 \text{ thru})$ 

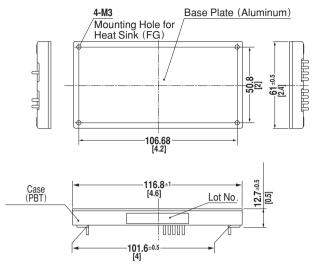
MODEL DBS700B12 DBS700B24 DBS700B28 DBS700B36 DBS700B48 MAX OUTPUT WATTAGE[W] 696 696 700 702 696 DC OUTPUT 28V 25A 36V 19.5A 12V 58A 24V 29A 48V 14.5A

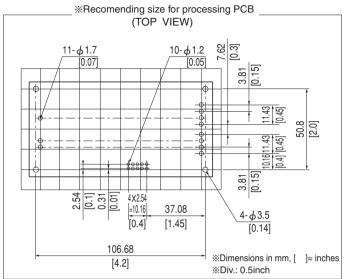
	MODEL		DBS700B12	DBS700B24	DBS700B28	DBS700B36	DBS700B48			
	VOLTAGE[V]		DC200 - 400							
INPUT  E  V  C  L  L  L  F  OUTPUT  F  OUTPU	CURRENT[A]	*1	2.76typ	2.76typ	2.76typ	2.76typ	2.73typ			
	EFFICIENCY[%]	*1	90.0typ	90.0typ	90.5typ	90.0typ	91.0typ			
ОИТРИТ	VOLTAGE[V]		12	24	28	36	48			
	CURRENT[A]		58	29	25	19.5	14.5			
	LINE REGULATION[mV]		40max	95max	95max	95max	120max			
	LOAD REGULATIO	N[mV]	100max	190max	190max	200max	240max			
	RIPPLE[mVp-p]	0 to +100℃*2	120max	120max	120max	150max	200max			
	HIPPLE[IIIVP-P]	-40 to 0℃*2	160max	160max	160max	200max	250max			
	RIPPLE NOISE[mVp-p]	0 to +100℃*2	150max	150max	150max	200max	250max			
	MIPPLE NOISE[IIIVP-P]	-40 to 0℃*²	180max	180max	180max	240max	400max			
	TEMPERATURE REGULATION[mV]	0 to +65℃	120max	280max	280max	360max	480max			
	TEMPERATURE REGULATION[IIIV]	-40 to +100°C	200max	480max	480max	680max	960max			
	DRIFT[mV] *3		40max	90max	90max	120max	180max			
	START-UP TIME[ms]		200max (DCIN 280V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE *4		Fixed (TRM pin open), 60 - 110% adjustable by external VR or external voltage							
	OUTPUT VOLTAGE SETTING[V]		11.64 - 12.36	23.28 - 24.72	27.16 - 28.84	34.92 - 37.08	46.56 - 49.44			
L	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically							
	OVERVOLTAGE PROTECTION		14.40 - 16.80V	27.60 - 33.60V	32.20 - 39.20V	41.40 - 50.40V	55.20 - 63.00V			
	REMOTE SENSING	à	Provided							
OUTPUT R  TE  S  0  PROTECTION CIRCUIT AND OTHERS F  III  ISOLATION C  C  ENVIRONMENT V  V	REMOTE ON/OFF		Provided (On both side of input and output)							
	INPUT-OUTPUT		AC3,000V 1minute,	Cutoff current = 10m	A, DC500V 50M $\Omega$ m	in (20±15℃)				
ISOL ATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)							
SOLATION	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)							
	OUTPUT-RC2,RC3		AC100V 1minute, Cutoff current = 100mA, DC100V 10M $\Omega$ min (20±15°C)							
	OPERATING TEMP.;HUMID.AND	ALTITUDE	-40 to +100°C (On aluminum base plate), 20 - 95%RH (Non condensing) (Refer to "Derating"), 3,000m (10,000feet) max							
ENVIDONMENT	STORAGE TEMP.,HUMID.AND	ALTITUDE	-40 to +100°C, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max							
LIVVINONWIENT	VIBRATION		10 - 55Hz, 49.0m/s <sup>2</sup>	, 3minutes period, 6	Ominutes each along	X, Y and Z axis				
	VIBRATION10 - 55Hz, 49.0m/s² , 3minutes period, 60minutes each along X, Y and Z axisIMPACT196.1m/s² , 11ms once each along X, Y and Z axis									
SAFETY	AGENCY APPROV	ALS	UL60950-1, C-UL, E	N62368-1						
VALETT	CASE SIZE/WEIGHT		61 X 12.7 X 116.8mm [2.4 X 0.5 X 4.6 inches] (WX H X D) / 180g max							
OTHERS	CASE SIZE/WEIGH	11	01 × 12.7 × 110.01111	1 [2.4 \ 0.3 \ 4.0   110116	55] (WATTAD) / 100g	IIIdx				

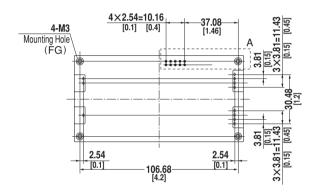
- \*1 At rated input(DC280V) and rated load.
- \*2 Ripple and ripple noise is measured by using measuring board with the recommended capacitor Co & the film capacitor 0.1 µF. Refer to the manual.
- \*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- \*4 Refer to the manual for the input range.

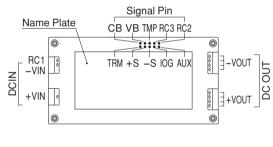


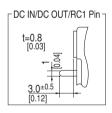
#### **External view**

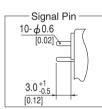


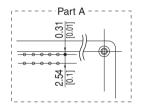






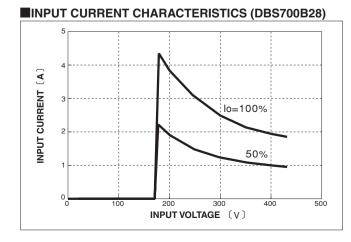


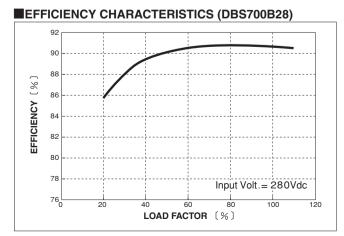




- **%Weight: 180g max**
- \*\*Tolerance: ±0.3 [±0.012]
- **%Base Plate: Aluminum**
- \*Dimensions in mm, [ ]= inches
- Mounting hole screwing torque: 0.49N⋅m(5.0kgf⋅cm)

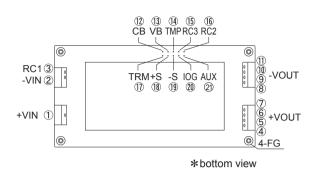
#### Performance data







#### Pin Configuration



NO.	Pin Connection	Function
1	+VIN	+DC input
2	-VIN	-DC input
3	RC1	Remote ON/OFF(Input side)
4567	+VOUT	+DC output
8 9 10 11	-VOUT	-DC output
12	СВ	Current balance
13	VB	Voltage balance
14)	TMP	Thermal detection signal
15	RC3	Remote ON/OFF(output side)
16	RC2	Remote ON/OFF(output side)
17)	TRM	Adjustment of output voltage
18	+S	+Remote sensing
19	-S	-Remote sensing
20	IOG	Inverter operation monitor
21)	AUX	Auxiliary power supply
	FG	Mounting hole(FG)

#### **Implementation • Mounting Method**

#### Mounting method

- ■The unit can be mounted in any direction. When two or more power supplies are used side by side, position them with proper intervals to allow enough air ventilation. Aluminum base plate temperature around each power supply should not exceed the temperature range shown in "Derating".
- ■Avoid placing the DC input line pattern lay out underneath the unit, it will increase the line conducted noise. Make sure to leave an ample distance between the line pattern lay out and the unit. Also avoid placing the DC output line pattern underneath the unit because it may increase the output noise. Lay out the pattern away from the unit.
- ■High-frequency noise radiates directly from the unit to the atmosphere. Therefore, design the shield pattern on the printed circuit board and connect its one to FG.

The shield pattern prevents noise radiation.

#### Stress onto the pins

- ■When too much stress is applied to the pins of the power supply, the internal connection may be weakened. As shown in right figure avoid applying stress of more than 29.4N (3kgf) on the input pins/output pins (A part) and more than 9.8N (1kgf) to the signal pins (B part).
- ■The pins are soldered on PCB internally, therefore, do not pull or bend them with abnormal forces.
- ■Mounting hole diameter of PCB should be 3.5mm to reduce the stress onto the pins.
- ■Fix the unit on PCB(fixing fittings) by screws to reduce the stress onto the pins. Be sure to mount the unit first, then solder the unit.

# Shield pattern RC1 -VIN Shield pattern +VOUT +VOUT

\*bottom view

A part

Less than
29.4N(3kgf)

Less than 29.4N(3kgf)

Less than 29.4N(3kgf)

Less than 29.4N(3kgf)

Less than 29.4N(3kgf)

Less than 29.4N(3kgf)

Less than 9.8N(1kgf)

#### Soldering temperature

■Flow soldering : 260°Cless than 15 seconds.

■Soldering iron

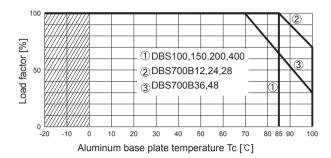
DC IN/DC OUT/RC1: 450°Cless than 5 seconds.

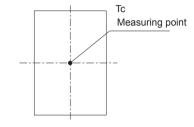
Signal pins : 350°Cless than 3 seconds (less than 20W)



#### Derating

- ■Use with the conduction cooling(e.g. heat radiation by conduction from the aluminum base plate to the attached heat sink). Below shows the derating curve based on the aluminum base plate temperature. In the hatched area, the specification of ripple and ripple noise is different from other areas.
- ■It is necessary to note thermal fatigue life by power cycle. Please reduce the temperature fluctuation range as much as possible when the up and down of temperature are frequently gener-ated. Contact for more information on cooling methods.





#### **Instruction Manual**

◆ It is neccessary to read the "Instruction Manual" and "Before using our product" before you use our product.

Instruction Manual https://www.cosel.co.jp/redirect/catalog/en/DBS/ Before using our product https://en.cosel.co.jp/technical/caution/index.html





#### **Basic Characteristics Data**

Madalal	Mandal Oirranit readle ad		Input	Bated	Inrush	PCB/Pattern			Series/Parallel operation availability	
Model	Circuit method	frequency [kHz]	current [A]	input fuse	current protection	Material	Single sided	Double sided	Series operation	Parallel operation
DBS100A	Forward converter	370	1.10 *1	-	-	Aluminum	Yes		Yes	Yes
DBS150A	Forward converter	370	1.59 *1	-	-	Aluminum	Yes		Yes	Yes
DBS200B	Forward converter	370	0.99 *1	-	-	Aluminum	Yes		Yes	Yes
DBS400B	Forward converter	370	1.72 *1	-	-	Aluminum	Yes		Yes	Yes
DBS700B	Forward converter	381	2.76 *1	-	-	Aluminum	Yes		Yes	Yes

<sup>\*1</sup> The value of input current is at rated input and rated load.