AC－DCスイッチング電源 オンボードタイプ

入力フィルタを内蔵した、オンボード絶縁型AC-DCスイッチング電源です。

シリーズ名 Series Name		出力容量 Output Power (W)	形状(H×W×L) Dimension (mm)	入力電圧 Input Voltage (V.AC)	出力電圧 Output Voltage (V.DC)	効率 Efficiency (%)	特　長 Feature	ページ Page
LC		12～15W	20×40×60	AC100V (85～132V) AC200V (175～264V)	3.3, 5, 12, 15, 24, ±5, ±12, ±15	75～85%	VCCI クラスB 準拠 VCCI class B	
MC		24～30W	20×50×90	AC100V (85～132V)	3.3, 5, 12, 15, 24	84～85%	VCCI クラスB 準拠 VCCI class B	

AC－DCスイッチング電源 ユニットタイプ

シャーシや放熱板への取付けにより長寿命化が可能で、入力フィルタを内蔵した、ユニットタイプ絶縁型AC-DCスイッチング電源です。

シリーズ名 Series Name		出力容量 Output Power (W)	形状(H×W×L) Dimension (mm)	入力電圧 Input Voltage (V.AC)	出力電圧 Output Voltage (V.DC)	効率 Efficiency (%)	特　長 Feature	ページ Page
QC		15～24W	25×50×82	AC100V (85～132V) AC200V (175～264V)	5, 12, 15, 24, ±5, ±12, ±15	75～80%	VCCI クラスB 準拠 VCCI class B	
AFC		20～25W	30×60×112		5, 12, 15, 24, ±12, ±15, 5•±12, 5•±15	75～80%	高信頼性 High reliability	
AKC		25～35W	30×60×132			75～80%	高信頼性 High reliability	
KC		50W	30×60×132	AC100V (85～132V) AC200V (175～264V)	5, 12, 15, 24	85～88%	力率改善回路内蔵 VCCI クラスB 準拠 Improved Power Factor VCCI class B	
KCW		36W		AC160V (85～264V)		83～86%	力率改善回路内蔵 VCCI クラスB 準拠 Improved Power Factor VCCI class B	
PC		70～100W	35×70×158	AC100V (85～132V) AC200V (175～264V)	5, 12, 15, 24, ±12, ±15	80～87%	VCCI クラスB、FCC クラスB準拠 VCCI class B, FCC class B	

LC SERIES

12～15W　AC-DC スイッチング電源

H20×W40×L60 (mm)

■ Features

- ● Input-Output Isolation
- ● Completely Molding Device
- ● High Efficiency 75～85%
- ● High Reliability
- ● 6 Sided Metal Shielding
- ● Operating Ambient Temperature
  －30℃～＋71℃
- ● VCCI Class B
- ● Conformity to RoHS2 Directive

- ● 入出力間絶縁
- ● 完全モールド製品
- ● 高効率　75～85%
- ● 高信頼性
- ● 6面メタルシールド
- ● 動作周囲温度
  －30℃～＋71℃
- ● VCCI クラスB 準拠
- ● RoHS2指令対応

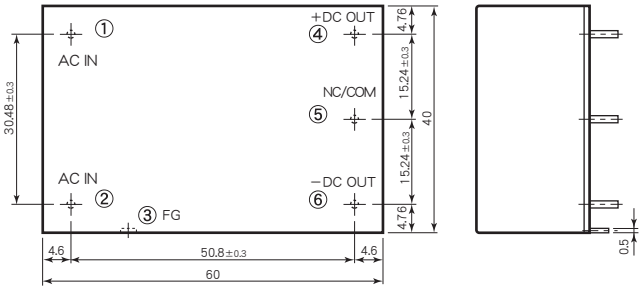
■ General Characteristics

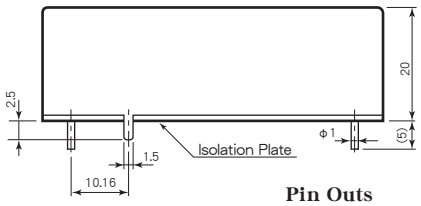
(at Ta : 25℃, Full Load, Nominal Vin)

- ● Input Voltage, Range — AC100, 200V (See Table 1)
- ● Input Frequency — 47～440Hz
- ● Output Voltage, Current — See Table 1
- ● Output Voltage Accuracy — ±2%
  ±3% (3.3, 5V Vout only)
- ● Efficiency — See Table 1
- ● Line Regulation — 0.5% max. (at Vin Range)
- ● Load Regulation — Single : ±0.5% max.
  (0～100% Load)
  Dual : ±2% max.
  ±3% max. (±5V Vout only)
  (10～100% Load)
- ● Output Ripple — (0.2% Vout＋40mV) p-p max.
- ● Output Noise — (0.5% Vout＋50mV) p-p max.
- ● Short Circuit Protection — Built-in, Auto-restart (See Fig. 2)
- ● Input Rush Current — 20A max.
- ● Temperature Coefficient — 0.02%/℃ max.
- ● Operating Ambient Temp. — －30℃～＋71℃ (See Fig. 1)
- ● Max. Case Temperature — ＋85℃
- ● Storage Temperature — －40℃～＋85℃
- ● Isolation Voltage — AC1500V one minute
  (Input－Output－Case)
- ● Isolation Impedance — 100MΩ min. (at DC1000V)
  (Input－Output－Case)
- ● Weight — 120g max.
- ● Humidity — 20～95% RH
- ● Shock — 490m/s² (11msec 3directions)
- ● Vibration — 10～55Hz 98m/s²
  (30minutes 3directions)
- ● Surface Structure — 6 Sided Metal Case
- ● Soldering Conditions
  Soldering DIP — 260℃, for 15 seconds max.
  Soldering iron — 360℃, for　5 seconds max.
- ● MTBF — Single : 140,000H
  Dual　: 120,000H
  (Ta : 25℃, 80% Load, Nominal Vin)
- ● Warranty — 5 years

■ Pin Outs & Dimensions (±0.5mm)

〈Top View〉

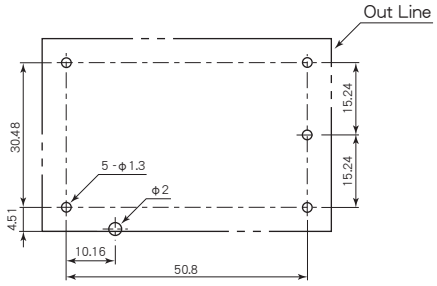




Pin Outs

Single Output		Dual Outputs	
①	AC in	①	AC in
②	AC in	②	AC in
③	Frame Ground	③	Frame Ground
④	＋Vdc out	④	＋Vdc out
⑤	No Connection	⑤	Common
⑥	－Vdc out	⑥	－Vdc out

■ Hole Configurations on PCB (Top View)



■ Selection Guide

Table 1

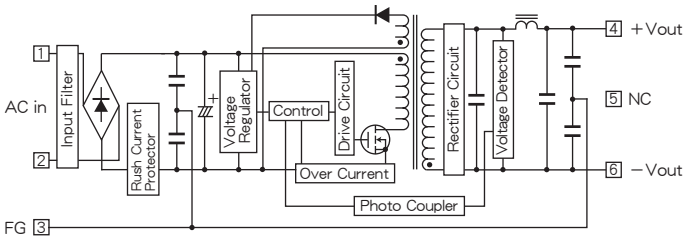
Model Number	Input Volt. (Range) (V. AC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical) (%)
LC100－3.3S　3.5A	100 (85～132)	3.3	3.5	81
LC100－　5S　3A		5	3	83
LC100－ 12S　1.3A		12	1.3	85
LC100－ 15S　1A		15	1	85
LC100－ 24S 0.65A		24	0.65	85
LC100－　5D　1.5A		±　5	±1.5	75
LC100－ 12D 0.65A		±12	±0.65	80
LC100－ 15D 0.52A		±15	±0.52	81
LC200－3.3S　3.5A	200 (175～264)	3.3	3.5	81
LC200－　5S　3A		5	3	83
LC200－ 12S　1.3A		12	1.3	85
LC200－ 15S　1A		15	1	85
LC200－ 24S 0.65A		24	0.65	85
LC200－　5D　1.5A		±　5	±1.5	75
LC200－ 12D 0.65A		±12	±0.65	80
LC200－ 15D 0.52A		±15	±0.52	81

Note : Fuse is not included in this AC/DC converter, so fuse should be used outside.

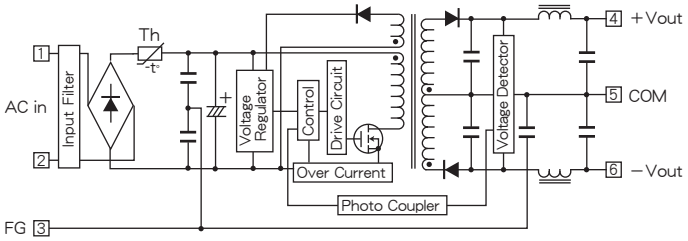
※ 上記仕様以外にも対応可能ですので お問い合わせ下さい。
Please consult with us about other specification.

■ Block Diagram

Single Output



Dual Outputs



■ Characteristic Curves

Fig. 1 Derating Curve

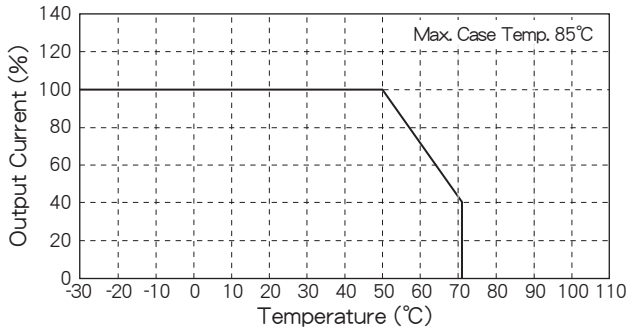


Fig. 2 Short Circuit Operating Area

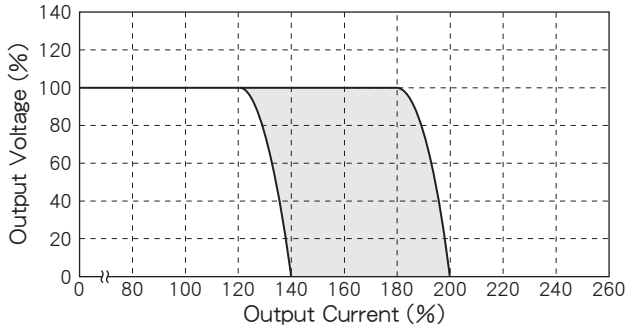


Fig. 3 Temperature Characteristic on Case Surface

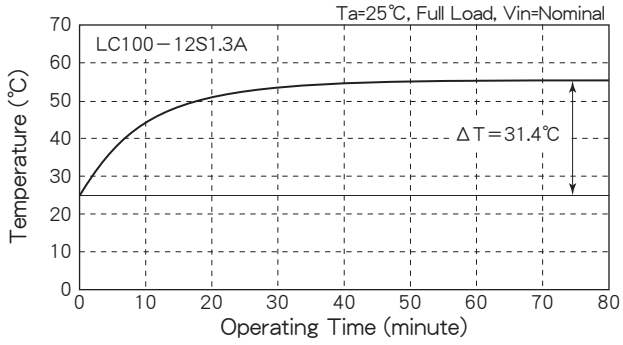


Fig. 4 Efficiency vs. Output Current

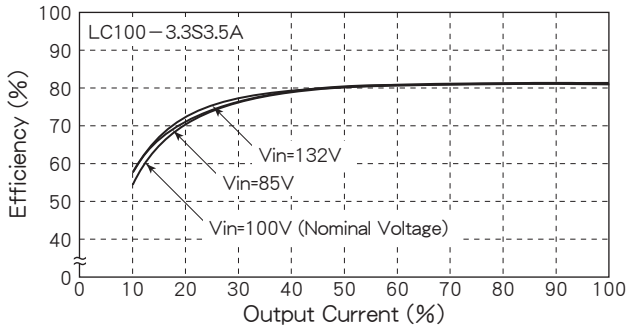


Fig. 5 Efficiency vs. Output Current

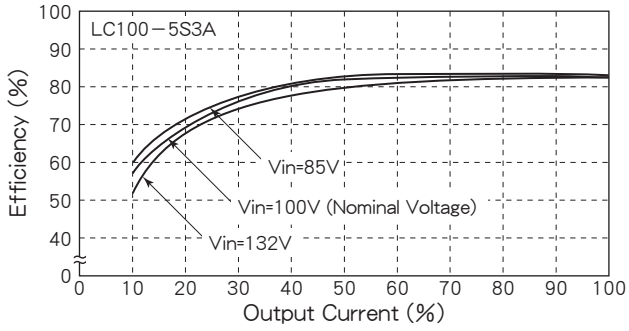


Fig. 6 Efficiency vs. Output Current

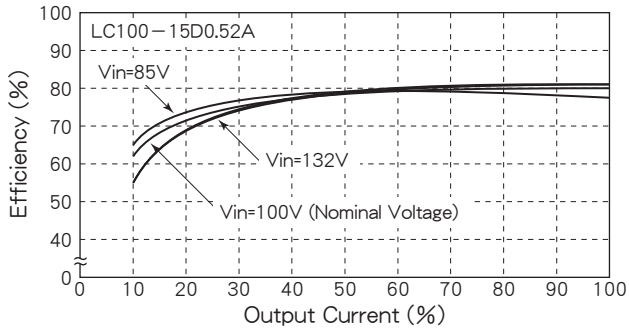


Fig. 7 Efficiency vs. Output Current

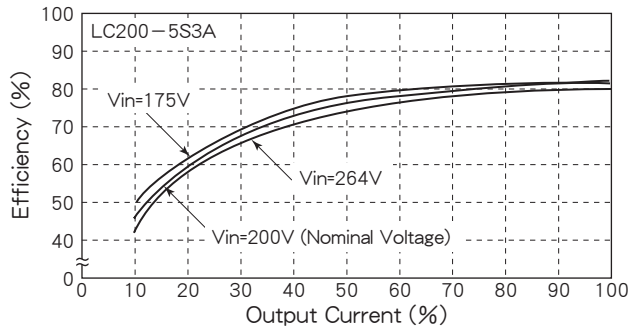
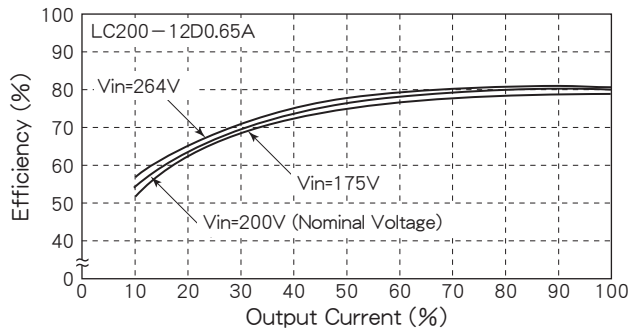


Fig. 8 Efficiency vs. Output Current



MC SERIES

24～30W　AC-DC スイッチング電源

H20×W50×L90 (mm)

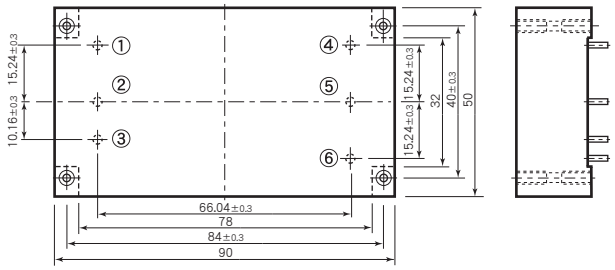
■ Features

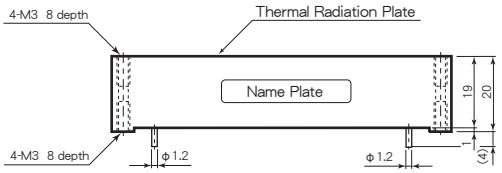
- ●Low Profile 20mm
- ●Input-Output Isolation (AC2000V)
- ●High Efficiency 84～85%
- ●Completely Molding Device
- ●6 Sided Metal Shielding
- ●Output Over Voltage Protection
- ●Thermal Protection
  ＋90℃～＋100℃
- ●Operating Ambient Temperature
  －30℃～＋71℃
- ●VCCI Class B
- ●Conformity to RoHS2 Directive

- ●薄型 20mm
- ●入出力間絶縁 (AC2000V)
- ●高効率　84～85%
- ●完全モールド製品
- ● 6 面メタルシールド
- ●出力過電圧保護回路内臓
- ●過熱保護回路内蔵
  ＋90℃～＋100℃
- ●動作周囲温度
  －30℃～＋71℃
- ●VCCI クラスB 準拠
- ●RoHS2指令対応

■ Pin Outs & Dimensions (±0.5mm)

〈Top View〉

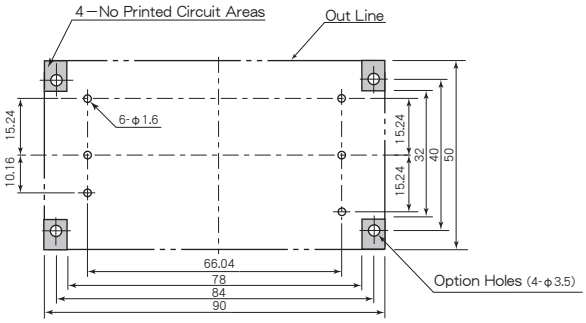




Pin Outs

①	AC in
②	AC in
③	Frame Ground
④	＋Vdc out
⑤	0 Vdc out
⑥	No Connection

■ Hole Configurations on PCB (Top View)



■ General Characteristics

(at Ta：25℃, Full Load, Nominal Vin)

- ●Input Voltage, Range　AC100V (See Table 1)
- ●Input Frequency　47～440Hz
- ●Output Voltage, Current　See Table 1
- ●Output Voltage Accuracy　±2%
  ±3% (3.3, 5V Vout only)
- ●Efficiency　See Table 1
- ●Line Regulation　±0.5% max. (at Vin Range)
- ●Load Regulation　±0.5% max. (0~100% Load)
- ●Output Ripple　(0.2% Vout+40mV) p-p max.
- ●Output Noise　(0.5% Vout+50mV) p-p max.
- ●Short Circuit Protection　Built-in, Auto-restart (See Fig. 2)
- ●Over Voltage Protection　115～140% Output Voltage
- ●Temperature Coefficient　0.02%/℃ max.
- ●Operating Ambient Temp.　－30℃～＋71℃ (See Fig. 1)
- ●Max. Case Temperature　＋85℃
- ●Storage Temperature　－40℃～＋85℃
- ●Isolation Voltage　AC2000V one minute
  (Input－Output－Case)
- ●Isolation Impedance　100MΩ min. (at DC1000V)
  (Input－Output－Case)
- ●Weight　200g max.
- ●Humidity　20～95% RH
- ●Shock　490m/s² (11msec 3directions)
- ●Vibration　10～55Hz 98m/s²
  (30minutes 3directions)
- ●Surface Structure　6 Sided Aluminum Case
- ●Soldering Conditions
  Soldering iron　360℃, for 5 seconds max.
- ●MTBF　130,000H
  (Ta：25℃, 80% Load, Nominal Vin)
- ●Warranty　5 years

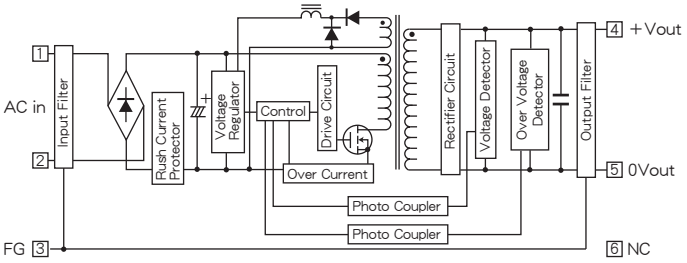
■ Selection Guide

Table 1

Model Number	Input Volt. (Range) (V. AC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical)(%)	
				20% Load	80% Load
MC100 － 3.3 S 7.2 A	100 (85～132)	3.3	7.2	75	84
MC100 －　5 S　6 A		5	6	75	85
MC100 － 12 S 2.6 A		12	2.6	75	85
MC100 － 15 S　2 A		15	2	75	85
MC100 － 24 S 1.3 A		24	1.3	75	85

※ 上記仕様以外にも対応可能ですので お問い合わせ下さい。
Please consult with us about other specification.

■ Block Diagram



■ Characteristic Curves

Fig. 1 Derating Curve

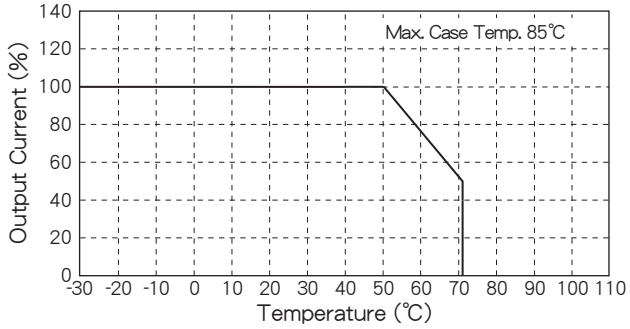


Fig. 2 Short Circuit Operating Area

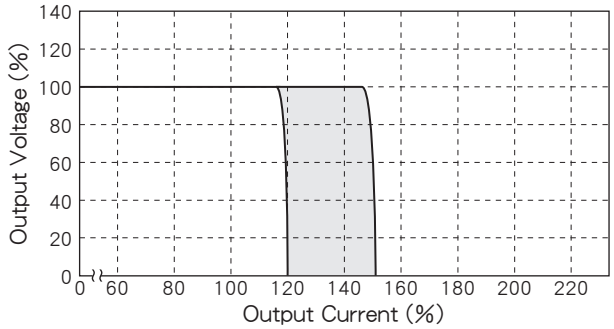


Fig. 3 Temperature Characteristic on Case Surface

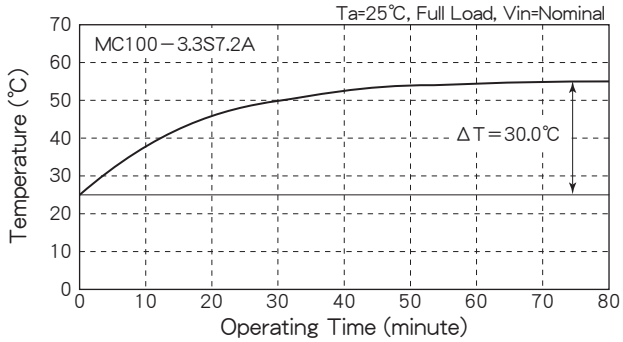


Fig. 4 Efficiency vs. Output Current

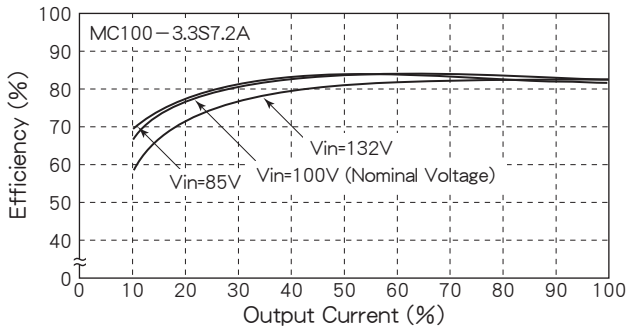


Fig. 5 Efficiency vs. Output Current

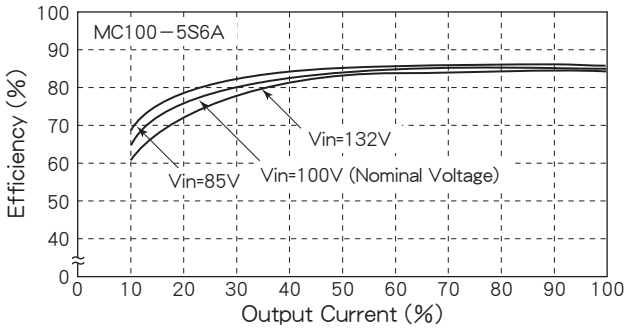


Fig. 6 Efficiency vs. Output Current

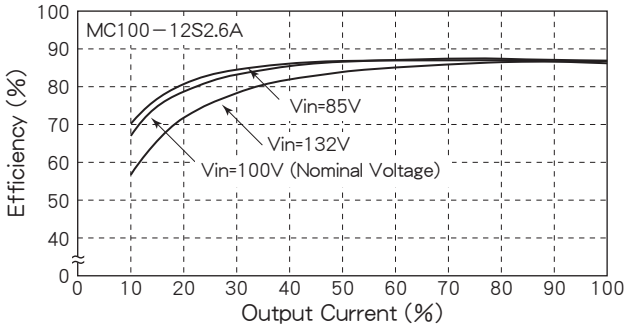


Fig. 7 Efficiency vs. Output Current

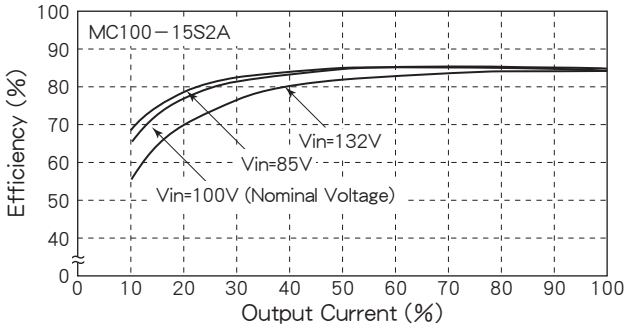
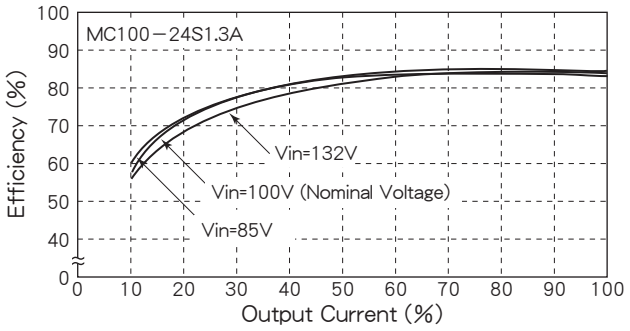


Fig. 8 Efficiency vs. Output Current



QC SERIES

15～24W AC-DC スイッチング電源
Single Output & Dual Outputs

H25×W50×L82 (mm)

■ Features

- ●Input-Output Isolation
- ●Completely Molding Device
- ●High Efficiency 75～80%
- ●Long Life by Mounting on Chassis or Using Heat Sink
- ●Operating Ambient Temperature －30℃～＋71℃
- ●Conformity to VCCI Class B
- ●Conformity to RoHS2 Directive

- ●入出力間絶縁
- ●完全モールド製品
- ●高効率 75～80%
- ●シャーシや放熱板への取付けにより長寿命化
- ●動作周囲温度 －30℃～＋71℃
- ●VCCI クラスB 準拠
- ●RoHS2指令対応

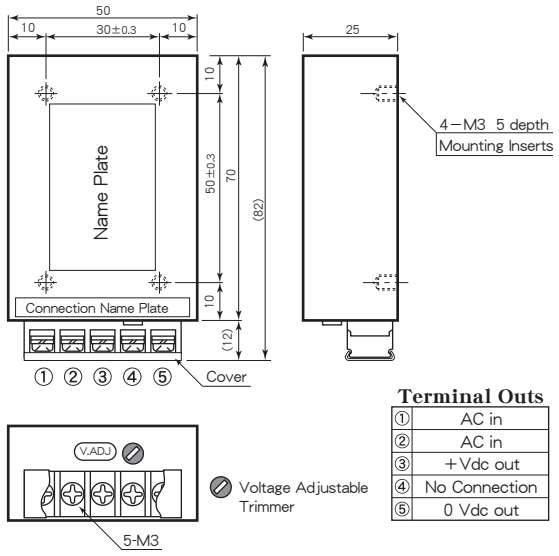
■ General Characteristics

(at Ta : 25℃, Full Load, Nominal Vin)

- ●Input Voltage, Range — AC100, 200V (See Table 1)
- ●Input Frequency — 47～440Hz
- ●Output Voltage, Current — See Table 1
- ●Output Voltage Adjustment — Single : ±5%
- ●Output Voltage Accuracy — Dual : ±2%, ±3% (5V Vout only)
- ●Efficiency — See Table 1
- ●Line Regulation — ±0.5% max. (at Vin Range)
- ●Load Regulation — Single : ±0.5% max. (0～100% Load); Dual : ±2% max., ±3% max. (±5V Vout only) (10～100% Load)
- ●Output Ripple — (0.1% Vout＋40mV) p-p max.
- ●Output Noise — (0.5% Vout＋50mV) p-p max.
- ●Short Circuit Protection — Built-in, Auto-restart (See Fig. 2)
- ●Input Rush Current — 40A max.
- ●Temperature Coefficient — 0.02%/℃ max.
- ●Operating Ambient Temp. — －30℃～＋71℃ (See Fig. 1)
- ●Max. Case Temperature — ＋85℃
- ●Storage Temperature — －40℃～＋85℃
- ●Isolation Voltage — AC2000V one minute (Input－Output－Case)
- ●Isolation Impedance — 100MΩ min. (at DC1000V) (Input－Output－Case)
- ●Weight — 210g max.
- ●Humidity — 20～95% RH
- ●Shock — 490m/s² (11msec 3directions)
- ●Vibration — 10～55Hz 98m/s² (30minutes 3directions)
- ●Surface Structure — Aluminum Case
- ●MTBF — Single : 130,000H; Dual : 110,000H (Ta : 25℃, 80% Load, Nominal Vin)
- ●Warranty — 5 years

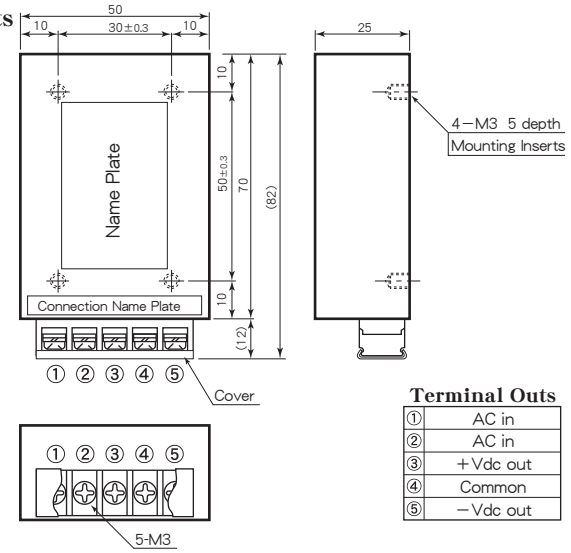
■ Terminal Outs & Dimensions (±0.5mm)

Single Output 〈Top View〉



Terminal Outs	
①	AC in
②	AC in
③	＋Vdc out
④	No Connection
⑤	0 Vdc out

Dual Outputs 〈Top View〉



Terminal Outs	
①	AC in
②	AC in
③	＋Vdc out
④	Common
⑤	－Vdc out

■ Selection Guide

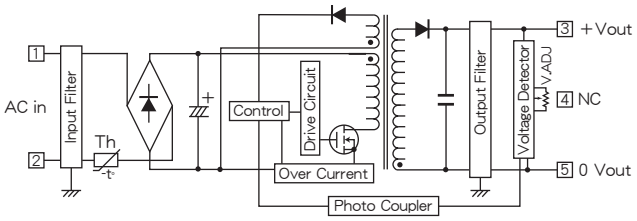
Table 1

Model Number	Input Volt. (Range) (V. AC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical) (%)
QC100－ 5S 3A	100 (85～132)	5	3	75
QC100－ 12S 1.8A		12	1.8	79
QC100－ 15S 1.6A		15	1.6	80
QC100－ 24S 1A		24	1	80
QC100－ 5W 1.5A		± 5	±1.5	75
QC100－12W 0.9A		±12	±0.9	78
QC100－15W 0.8A		±15	±0.8	79
QC200－ 5S 3A	200 (175～264)	5	3	75
QC200－ 12S 1.8A		12	1.8	79
QC200－ 15S 1.6A		15	1.6	80
QC200－ 24S 1A		24	1	80
QC200－ 5W 1.5A		± 5	±1.5	75
QC200－12W 0.9A		±12	±0.9	78
QC200－15W 0.8A		±15	±0.8	79

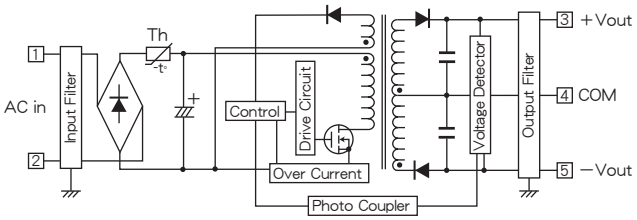
※ 上記仕様以外にも対応可能ですので お問い合わせ下さい。
Please consult with us about other specification.

■ Block Diagram

Single Output



Dual Outputs



■ Characteristic Curves

Fig. 1 Derating Curve

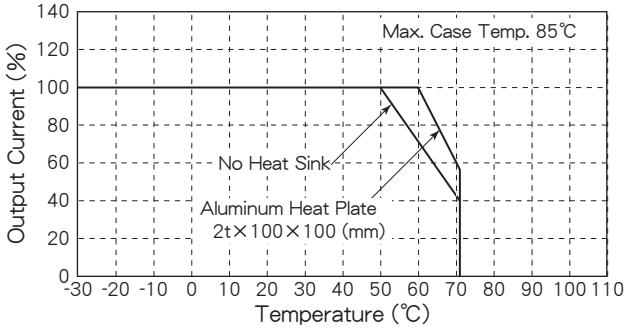


Fig. 2 Short Circuit Operating Area

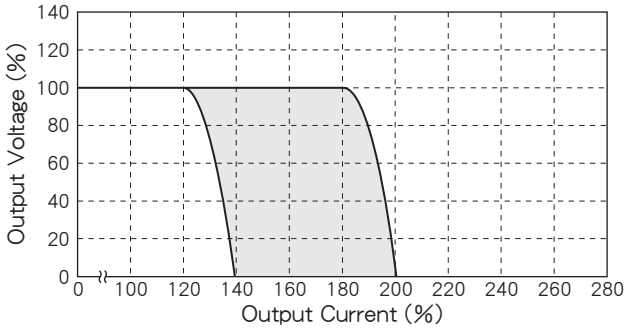


Fig. 3 Temperature Characteristic on Case Surface

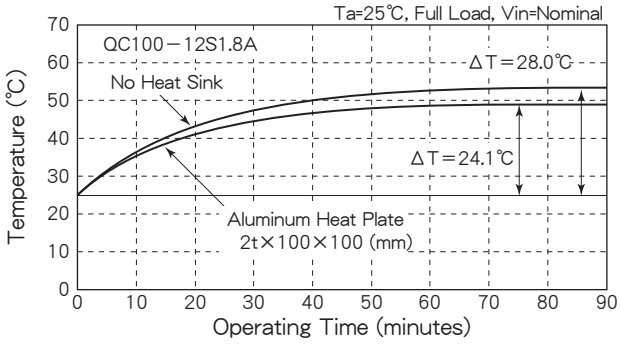


Fig. 4 Efficiency vs. Output Current

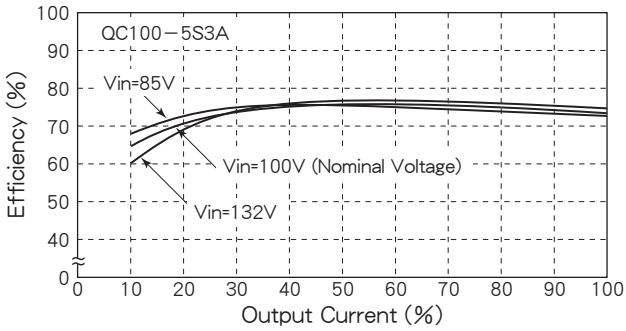


Fig. 5 Efficiency vs. Output Current

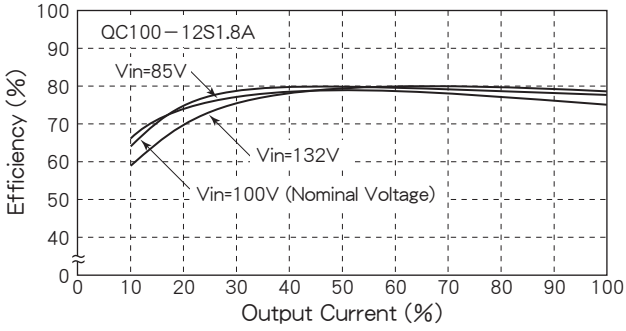


Fig. 6 Efficiency vs. Output Current

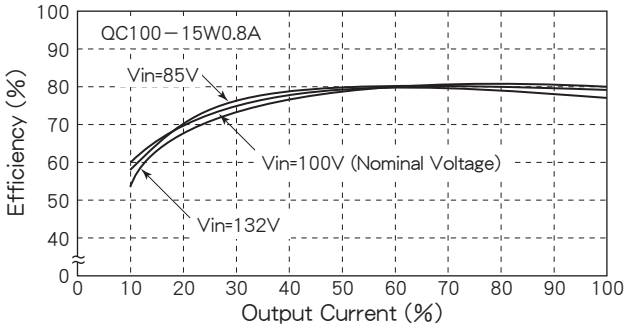
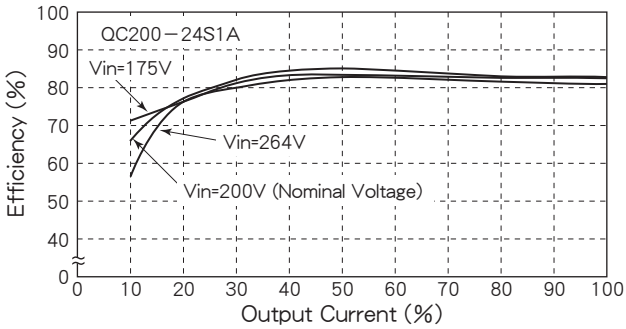


Fig. 7 Efficiency vs. Output Current



AFC SERIES

20～25W　AC-DC スイッチング電源
Single, Dual & Triple Outputs

H30×W60×L112 (mm)

■ Features

- ●Input-Output Isolation
- ●Completely Molding Device
- ●High Efficiency 75～80%
- ●Long Life by Mounting on
- ●Chassis or Using Heat Sink
- ●Output Over Voltage Protection
  (Single and Dual Output only)
- ●Operating Ambient Temperature
  －25℃～＋71℃
- ●Conformity to RoHS2 Directive

- ●入出力間絶縁
- ●完全モールド製品
- ●高効率　75～80%
- ●シャーシや放熱板への
  取付けにより長寿命化
- ●出力過電圧保護回路内蔵
  （単出力、2出力のみ）
- ●動作周囲温度
  －25℃～＋71℃
- ●RoHS2指令対応

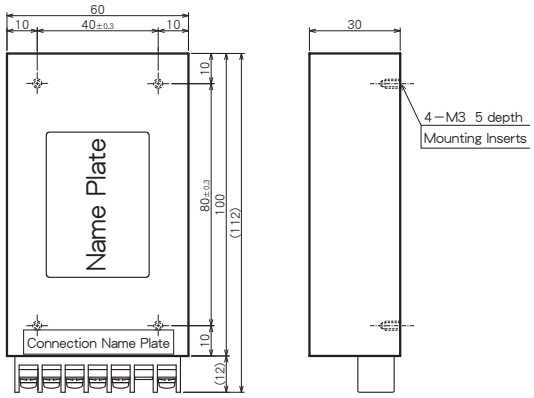
■ General Characteristics

(at Ta：25℃, Full Load, Nominal Vin)

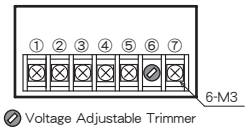
- ●Input Voltage, Range: AC100, 200V (See Table 1)
- ●Input Frequency: 47～440Hz
- ●Output Voltage, Current: See Table 1
- ●Output Voltage Adjustment: Single, Dual：±5%
- ●Output Voltage Accuracy: Triple：±2%
  ±3% (5V Vout only)
- ●Efficiency: See Table 1
- ●Line Regulation: 0.1% max. (at Vin Range)
- ●Load Regulation: Single, Dual：0.5% max.
  1% max. (5V Vout only)
  (0～100% Load)
  Triple：1% max. (5V Vout)
  (0～100% Load)
  ±3% max. (±12, ±15V Vout)
  (10～100% Load)
- ●Output Ripple: (0.1% Vout＋40mV) p-p max.
- ●Output Noise: (0.5% Vout＋50mV) p-p max.
- ●Short Circuit Protection: Built-in, Auto-restart (See Fig. 2)
- ●Over Voltage Protection: 115～140% Output Voltage
  (Single and Dual Output only)
- ●Temperature Coefficient: 0.02%/℃ max.
- ●Operating Ambient Temp.: －25℃～＋71℃ (See Fig. 1)
- ●Max. Case Temperature: ＋85℃
- ●Storage Temperature: －40℃～＋85℃
- ●Isolation Voltage: AC1500V one minute
  (Input－Output－Case)
- ●Isolation Impedance: 100MΩ min. (at DC1000V)
  (Input－Output－Case)
- ●Weight: 430g max.
- ●Humidity: 20～95% RH
- ●Shock: 490m/s² (11msec 3directions)
- ●Vibration: 10～55Hz 98m/s²
  (30minutes 3directions)
- ●Surface Structure: Aluminum Case
- ●MTBF: Single：110,000H, Dual：90,000H
  Triple：80,000H
  (Ta：25℃, 80% Load, Nominal Vin)
- ●Warranty: 5 years

■ Terminal Outs & Dimensions (±0.5mm)

〈Top View〉



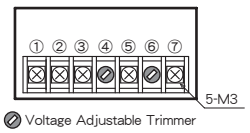
Single Output



Terminal Outs

①	AC in
②	AC in
③	No Connection
④	No Connection
⑤	＋Vdc out
⑥	Vout Adjustment
⑦	0Vdc out

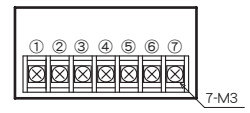
Dual Outputs



Terminal Outs

①	AC in
②	AC in
③	＋Vdc out
④	＋Vout Adjustment
⑤	Common
⑥	－Vout Adjustment
⑦	－Vdc out

Triple Outputs



Terminal Outs

①	AC in
②	AC in
③	＋5 V out
④	0 Vdc out
⑤	＋Vdc out
⑥	Common
⑦	－Vdc out

■ Selection Guide

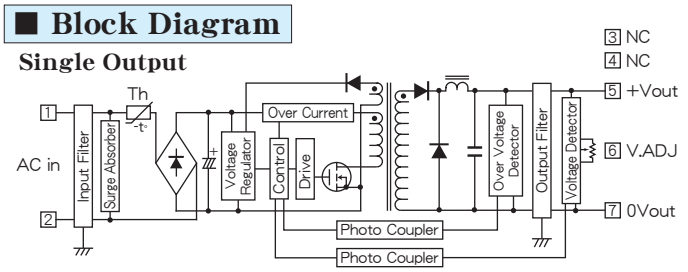
Table 1

Model Number	Input Volt. (Range) (V. AC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical) (%)
AFC100－　5S　4A	100 (85～132)	5	4	75
AFC100－ 12S　2A		12	2	79
AFC100－ 15S 1.6A		15	1.6	80
AFC100－ 24S 1.1A		24	1.1	80
AFC100－12W　1A		±12	±1	78
AFC100－15W 0.8A		±15	±0.8	79
AFC100－　5S 12W		5, ±12	2, ±0.35	75
AFC100－　5S 15W		5, ±15	2, ±0.3	75
AFC200－　5S　4A	200 (175～264)	5	4	75
AFC200－ 12S　2A		12	2	79
AFC200－ 15S 1.6A		15	1.6	80
AFC200－ 24S 1.1A		24	1.1	80
AFC200－12W　1A		±12	±1	78
AFC200－15W 0.8A		±15	±0.8	79
AFC200－　5S 12W		5, ±12	2, ±0.35	75
AFC200－　5S 15W		5, ±15	2, ±0.3	75

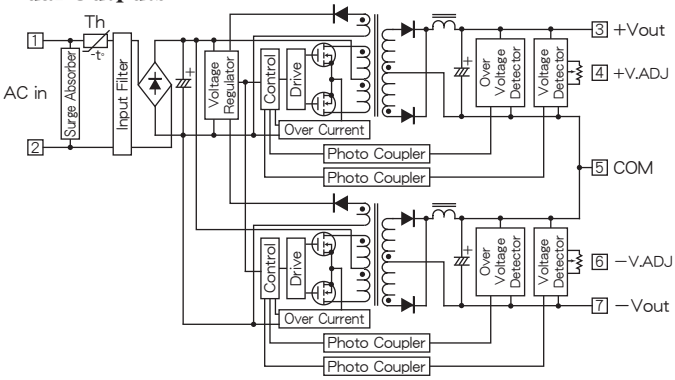
（注）　ワイド入力電圧範囲 (AC85V~264V) の仕様製品も製作いたします。
Note：We can offer wide Vin range (AC85V~264V) device.

■ Block Diagram

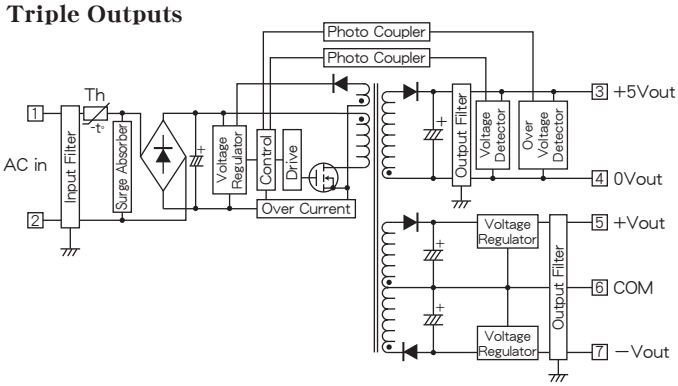
Single Output



Dual Outputs



Triple Outputs



■ Characteristic Curves

Fig. 1 Derating Curve

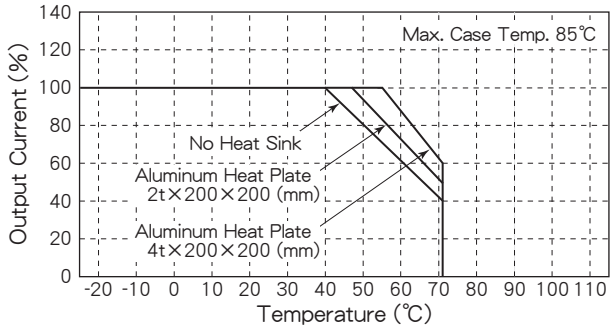


Fig. 2 Short Circuit Operating Area

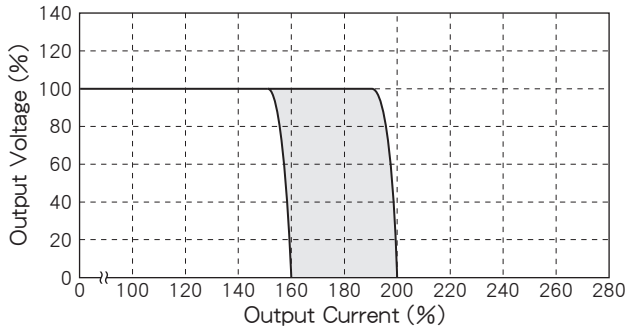


Fig. 3 Temperature Characteristic on Case Surface

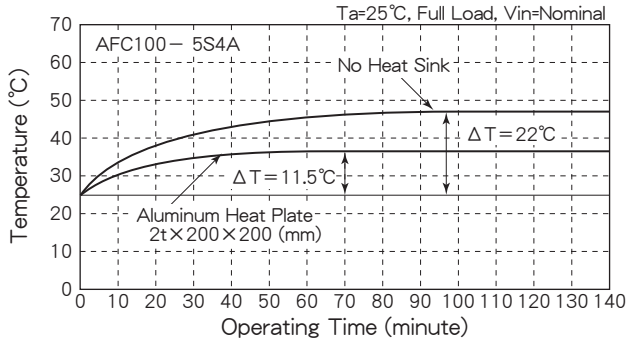


Fig. 4 Efficiency vs. Output Current

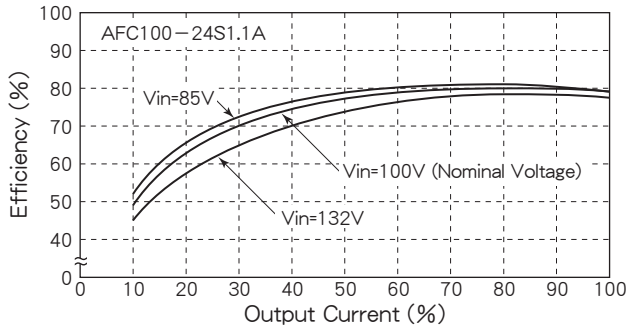
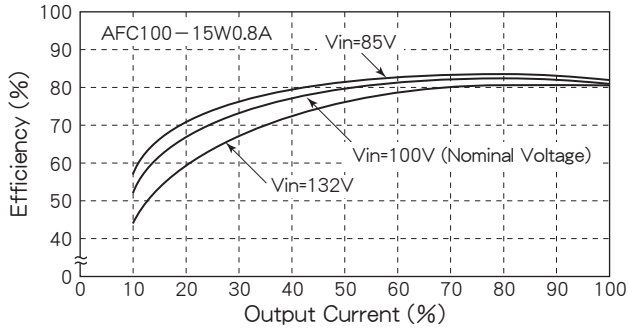


Fig. 5 Efficiency vs. Output Current



AKC SERIES

25～35W AC-DC スイッチング電源
Single, Dual & Triple Outputs

H30×W60×L132 (mm)

■ Features

- ●Input-Output Isolation
- ●Completely Molding Device
- ●High Efficiency 75～80%
- ●Long Life by Mounting on Chassis or Using Heat Sink
- ●Output Over Voltage Protection (Single and Dual Output only)
- ●Operating Ambient Temperature −25℃～+71℃
- ●Conformity to RoHS2 Directive

- ●入出力間絶縁
- ●完全モールド製品
- ●高効率 75～80%
- ●シャーシや放熱板への取付けにより長寿命化
- ●出力過電圧保護回路内蔵（単出力、2出力のみ）
- ●動作周囲温度 −25℃～+71℃
- ●RoHS2指令対応

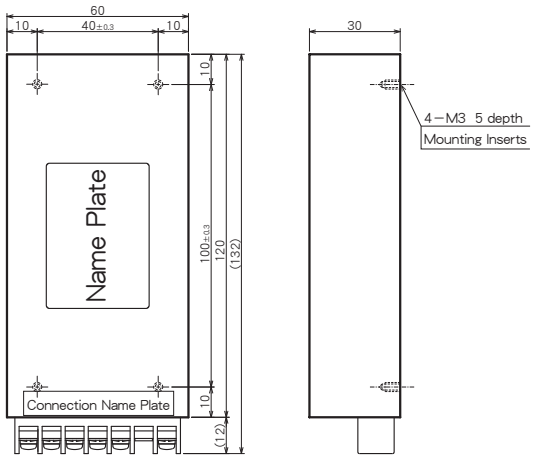
■ General Characteristics

(at Ta : 25℃, Full Load, Nominal Vin)

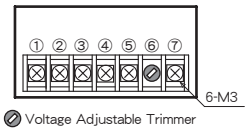
●Input Voltage, Range	AC100, 200V (See Table 1)
●Input Frequency	47～440Hz
●Output Voltage, Current	See Table 1
●Output Voltage Adjustment	Single, Dual : ±5%
●Output Voltage Accuracy	Triple : ±2% ±3% (5V Vout only)
●Efficiency	See Table 1
●Line Regulation	0.1% max. (at Vin Range)
●Load Regulation	Single, Dual : 0.5% max. 1% max. (5V Vout only) (0～100% Load) Triple : 1% max. (5V Vout) (0～100% Load) ±3% max. (±12, ±15V Vout) (10～100% Load)
●Output Ripple	(0.1% Vout+40mV) p-p max.
●Output Noise	(0.5% Vout+50mV) p-p max.
●Short Circuit Protection	Built-in, Auto-restart (See Fig. 2)
●Over Voltage Protection	115～140% Output Voltage (Single and Dual Output only)
●Temperature Coefficient	0.02%/℃ max.
●Operating Ambient Temp.	−25℃～+71℃ (See Fig. 1)
●Max. Case Temperature	+85℃
●Storage Temperature	−40℃～+85℃
●Isolation Voltage	AC1500V one minute (Input−Output−Case)
●Isolation Impedance	100MΩ min. (at DC1000V) (Input−Output−Case)
●Weight	550g max.
●Humidity	20～95% RH
●Shock	490m/s² (11msec 3directions)
●Vibration	10～55Hz 98m/s² (30minutes 3directions)
●Surface Structure	Aluminum Case
●MTBF	Single : 110,000H, Dual : 90,000H Triple : 80,000H (Ta : 25℃, 80% Load, Nominal Vin)
●Warranty	5 years

■ Terminal Outs & Dimensions (±0.5mm)

〈Top View〉



Single Output

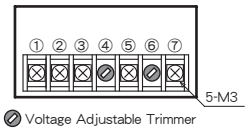


Voltage Adjustable Trimmer

Terminal Outs

①	AC in
②	AC in
③	No Connection
④	No Connection
⑤	+Vdc out
⑥	Vout Adjustment
⑦	0Vdc out

Dual Outputs

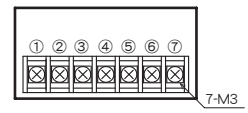


Voltage Adjustable Trimmer

Terminal Outs

①	AC in
②	AC in
③	+Vdc out
④	+Vout Adjustment
⑤	Common
⑥	−Vout Adjustment
⑦	−Vdc out

Triple Outputs



Terminal Outs

①	AC in
②	AC in
③	+ 5 V out
④	0 Vdc out
⑤	+Vdc out
⑥	Common
⑦	−Vdc out

■ Selection Guide

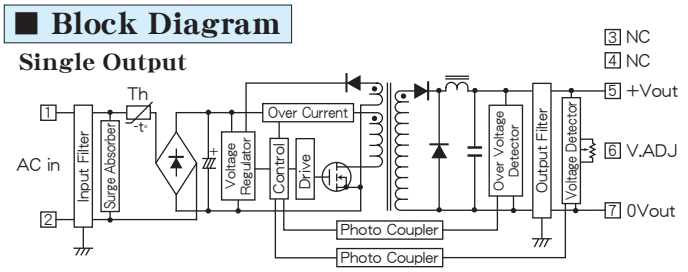
Table 1

Model Number	Input Volt. (Range) (V. AC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical) (%)
AKC100− 5S 5A	100 (85～132)	5	5	75
AKC100−12S 3A		12	3	79
AKC100−15S 2.4A		15	2.4	80
AKC100−24S 1.5A		24	1.5	80
AKC100−12W 1.5A		±12	±1.5	78
AKC100−15W 1.2A		±15	±1.2	79
AKC100− 5S 12W		5, ±12	3, ±0.35	75
AKC100− 5S 15W		5, ±15	3, ±0.3	75
AKC200− 5S 5A	200 (175～264)	5	5	75
AKC200−12S 3A		12	3	79
AKC200−15S 2.4A		15	2.4	80
AKC200−24S 1.5A		24	1.5	80
AKC200−12W 1.5A		±12	±1.5	78
AKC200−15W 1.2A		±15	±1.2	79
AKC200− 5S 12W		5, ±12	3, ±0.35	75
AKC200− 5S 15W		5, ±15	3, ±0.3	75

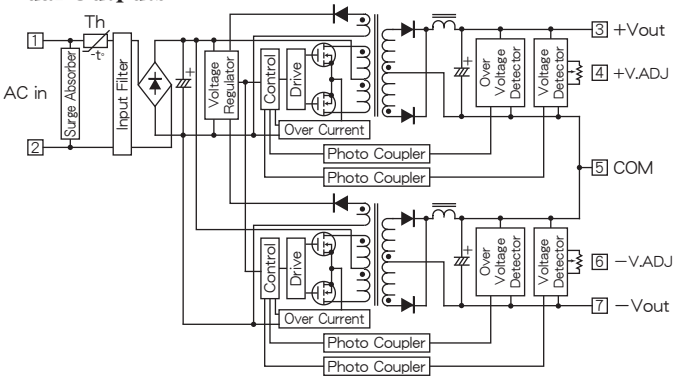
(注) ワイド入力電圧範囲 (AC85V~264V) の仕様製品も製作いたします。
Note : We can offer wide Vin range (AC85V~264V) device.

■ Block Diagram

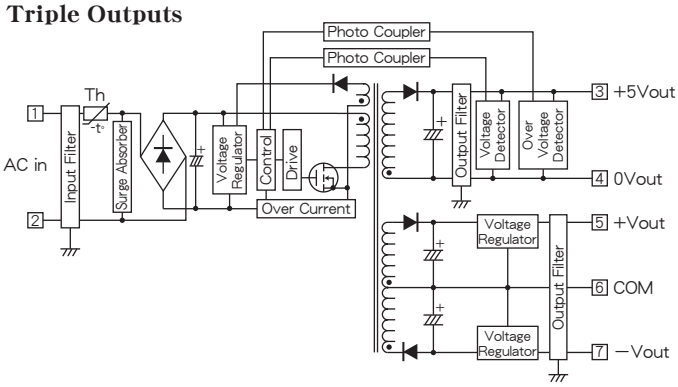
Single Output



Dual Outputs



Triple Outputs



■ Characteristic Curves

Fig. 1 Derating Curve

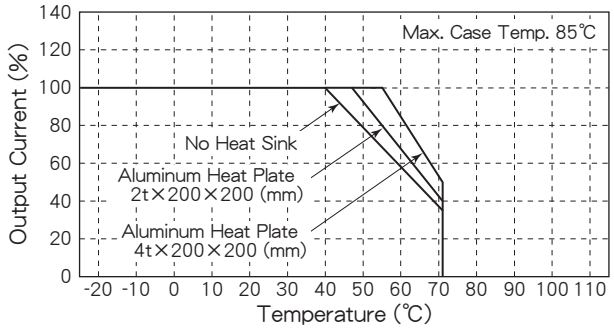


Fig. 2 Short Circuit Operating Area

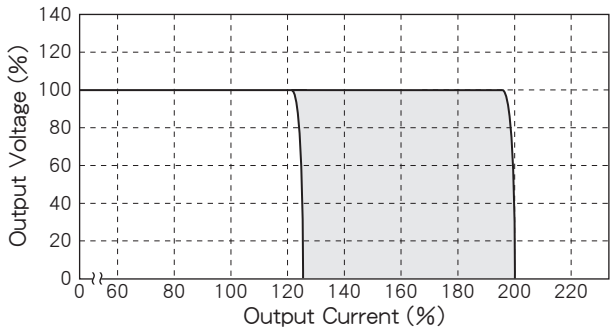


Fig. 3 Temperature Characteristic on Case Surface

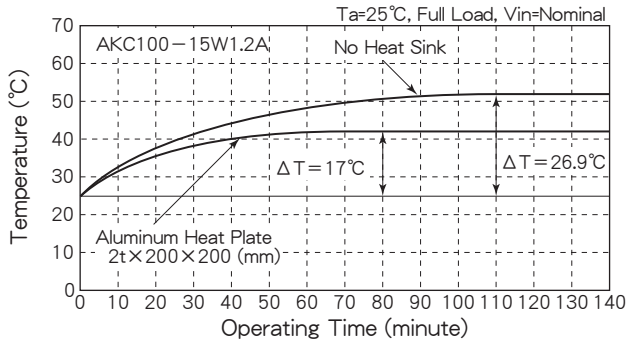


Fig. 4 Efficiency vs. Output Current

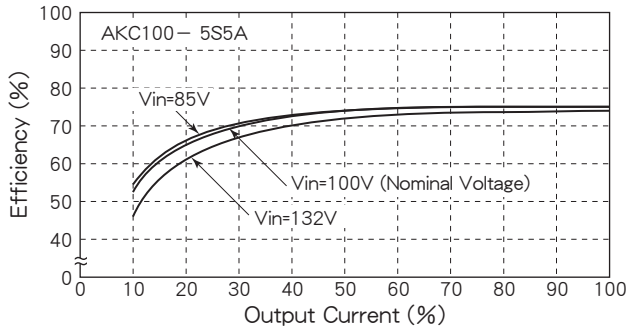
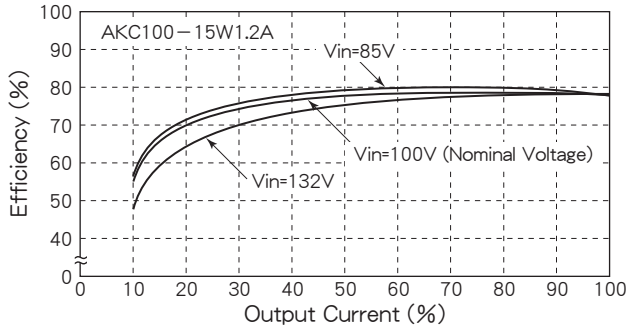


Fig. 5 Efficiency vs. Output Current



KC SERIES
KCW SERIES

50W AC-DC スイッチング電源
36W (Wide Input Voltage Range)

H30×W60×L132 (mm)

■ Features

- ●Wide Input Voltage Range (KCW) AC85～264V
- ●Improved Power Factor
- ●Output Over Voltage Protection
- ●High Efficinecy 83～88%
- ●Input-Output Isolation (AC1500V)
- ●Operating Ambient Temperature −25℃～+71℃
- ●Adjustable Output Volt. ±5%
- ●Conformity to VCCI Class B
- ●Conformity to RoHS2 Directive

- ●ワイド入力電圧 (KCW) AC85～264V
- ●力率改善回路内蔵
- ●出力過電圧保護回路内蔵
- ●高効率 83～88%
- ●入出力間絶縁 (AC1500V)
- ●動作周囲温度 −25℃～+71℃
- ●可変出力電圧 ±5%
- ●VCCI クラスB 準拠
- ●RoHS2指令対応

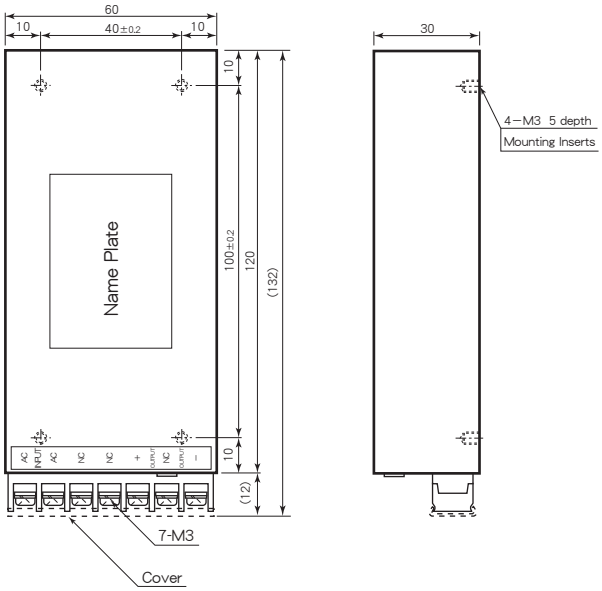
■ General Characteristics

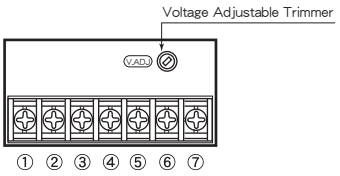
(at Ta : 25℃, Full Load, Nominal Vin)

- ●Input Voltage, Range: KC : AC100V (85～132V) / AC200V (175～264V); KCW : AC160V (85～264V)
- ●Input Frequency: 47～440Hz
- ●Power Factor: 0.80 typ. (Vin : 50, 60Hz) / 0.65 typ. (Vin : 400Hz)
- ●Output Voltage, Current: See Table 1
- ●Output Voltage Adjustment: ±5%
- ●Efficiency: See Table 1
- ●Line Regulation: 0.1% max. (at Vin Range)
- ●Load Regulation: 0.5% max. / 1.5% max. (5V Vout only) (0～100% Load)
- ●Output Ripple: (0.1% Vout+40mV) p-p max. (Vin : 50, 60Hz) / (1% Vout+40mV) p-p max. (Vin : 400Hz)
- ●Output Noise: (0.5% Vout+50mV) p-p max. (Vin : 50, 60Hz) / (1.5% Vout+50mV) p-p max. (Vin : 400Hz)
- ●Short Circuit Protection: Built-in, Auto-restart (See Fig. 2)
- ●Over Voltage Protection: 115～140% Output Voltage
- ●Temperature Coefficient: 0.02%/℃ max.
- ●Operating Ambient Temp.: −25℃～+71℃ (See Fig. 1)
- ●Max. Case Temperature: +85℃
- ●Storage Temperature: −40℃～+85℃
- ●Isolation Voltage: AC1500V one minute (Input−Output−Case)
- ●Isolation Impedance: 100MΩ min. (at DC1000V) (Input−Output−Case)
- ●Weight: 550g max.
- ●Humidity: 20～95% RH
- ●Shock: 490m/s² (11msec 3directions)
- ●Vibration: 10～55Hz 98m/s² (30minutes 3directions)
- ●Surface Structure: Aluminum Case
- ●MTBF: 110,000H (Ta : 25℃, 80% Load, Nominal Vin)
- ●Warranty: 5 years

■ Terminal Outs & Dimensions (±0.5mm)

〈Top View〉





Terminal Outs

①	AC in
②	AC in
③	No Connection
④	No Connection
⑤	+Vdc out
⑥	No Connection
⑦	−Vdc out

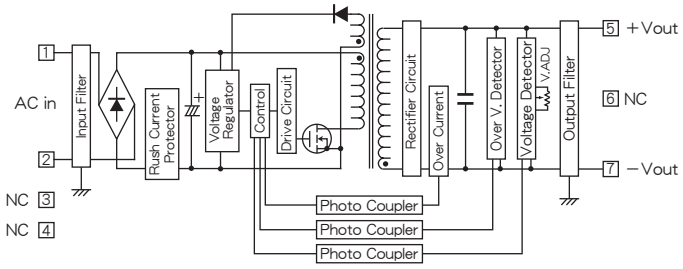
■ Selection Guide

Table 1

Model Number	Input Volt. (Range) (V. AC)	Output Voltage (V. DC)	Output Current (A)	Efficiency 80% Load (%)(typ.)
KC100− 5S 10A	100 (85～132)	5	10	85
KC100− 12S 4.2A		12	4.2	87
KC100− 15S 3.3A		15	3.3	88
KC100− 24S 2.1A		24	2.1	88
KC200− 5S 10A	200 (175～264)	5	10	85
KC200− 12S 4.2A		12	4.2	87
KC200− 15S 3.3A		15	3.3	88
KC200− 24S 2.1A		24	2.1	88
KCW160− 5S 7A	160 (85～264)	5	7	83
KCW160−12S 3A		12	3	85
KCW160−15S 2.4A		15	2.4	86
KCW160−24S 1.5A		24	1.5	86

※ 上記仕様以外にも対応可能ですので お問い合わせ下さい。
Please consult with us about other specification.

■ Block Diagram



■ Characteristic Curves

Fig. 1 Derating Curve

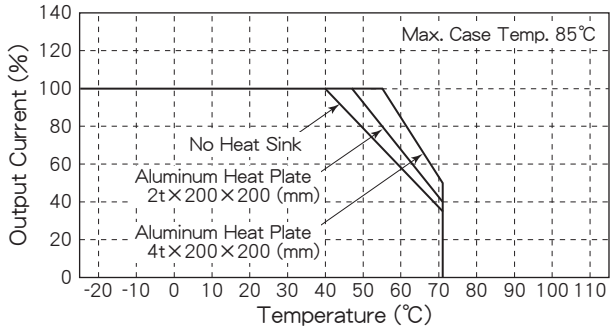


Fig. 2 Short Circuit Operating Area

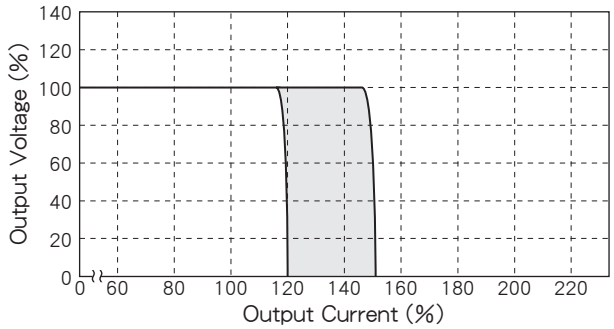


Fig. 3 Efficiency vs. Output Current

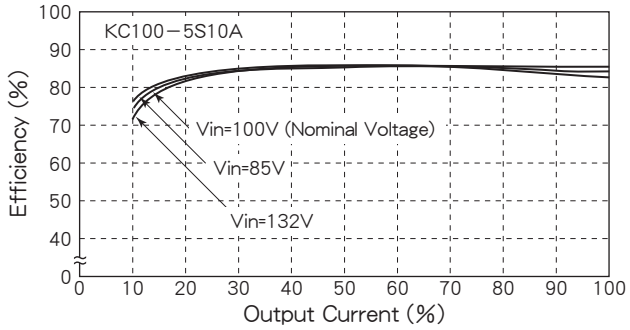


Fig. 4 Efficiency vs. Output Current

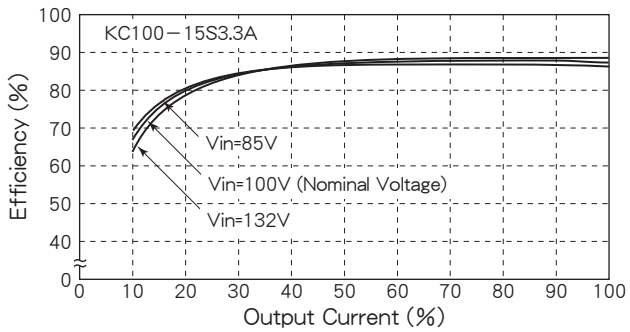


Fig. 5 Efficiency vs. Output Current

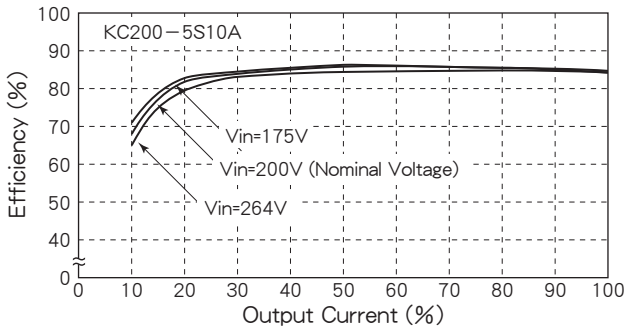


Fig. 6 Efficiency vs. Output Current

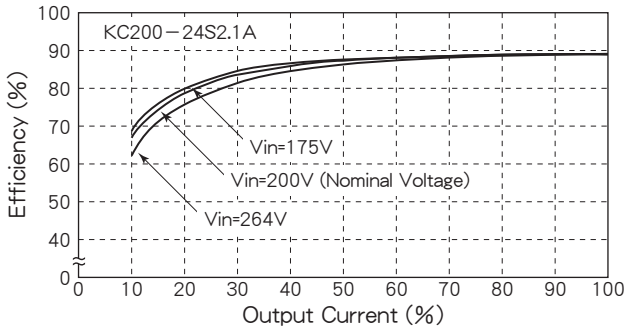


Fig. 7 Efficiency vs. Output Current

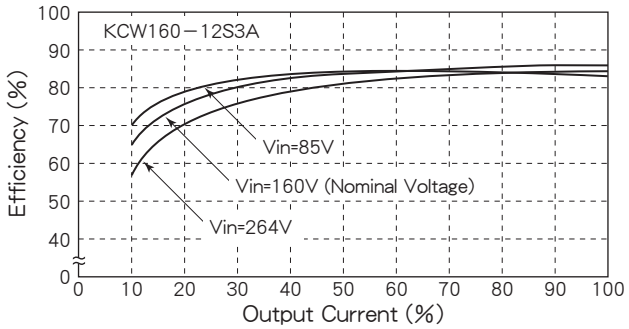
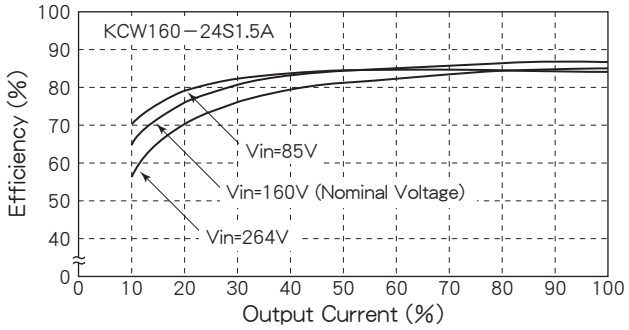


Fig. 8 Efficiency vs. Output Current



PC SERIES

70～100W AC-DC スイッチング電源
Single Output & Dual Outputs

H35×W70×L158 (mm)

■ Features

- ●Input-Output Isolation
- ●Completely Molding Device
- ●High Efficiency 80～87%
- ●Long Life by Mounting on Chassis or Using Heat Sink
- ●Input Rush Current Protection
- ●Output Over Voltage Protection
- ●Operating Ambient Temperature −25℃～+71℃
- ●Conformity to VCCI Class B, FCC Class B
- ●Conformity to RoHS2 Directive

- ●入出力間絶縁
- ●完全モールド製品
- ●高効率 80～87%
- ●シャーシや放熱板への取付けにより長寿命化
- ●入力突入電流保護回路内蔵
- ●出力過電圧保護回路内蔵
- ●動作周囲温度 −25℃～+71℃
- ●VCCI クラスB FCC クラスB 準拠
- ●RoHS2指令対応

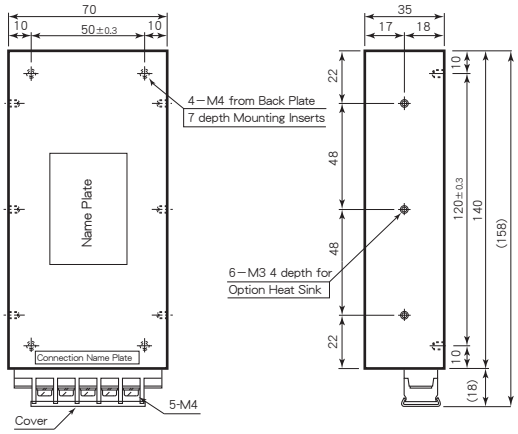
■ General Characteristics

(at Ta : 25℃, Full Load, Nominal Vin)

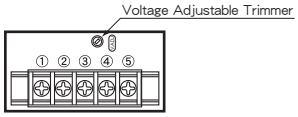
●Input Voltage, Range	AC100, 200V (See Table 1)
●Input Frequency	47～440Hz
●Output Voltage, Current	See Table 1
●Output Voltage Adjustment	Single : ±5% Dual : ±5%
●Efficiency	See Table 1
●Line Regulation	0.1%max. (at Vin Range)
●Load Regulation	0.5% max. 1% max. (5V Vout only) (0～100% Load)
●Output Ripple	(0.1% Vout+40mV) p-p max.
●Output Noise	(0.5% Vout+50mV) p-p max.
●Short Circuit Protection	Built-in, Auto-restart (See Fig. 2)
●Over Voltage Protection	115～140% Output Voltage
●Temperature Coefficient	0.02%/℃ max.
●Operating Ambient Temp.	−25℃～+71℃ (See Fig. 1)
●Max. Case Temperature	+85℃
●Storage Temperature	−40℃～+85℃
●Isolation Voltage	AC2000V one minute (Input−Output−Case)
●Isolation Impedance	100MΩ min. (at DC1000V) (Input−Output−Case)
●Weight	Main Body : 800g max. Pair Heat Sinks : 250g max.
●Humidity	20～95% RH
●Shock	196m/s² (11msec 3directions)
●Vibration	10～55Hz 49m/s² (30minutes 3directions)
●Surface Structure	Aluminum Case
●MTBF	Single : 110,000H Dual : 90,000H (Ta : 25℃, 80% Load, Nominal Vin)
●Warranty	5 years

■ Terminal Outs & Dimensions (±0.5mm)

〈Top View〉



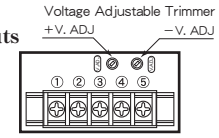
Single Output



Terminal Outs

①	AC in
②	AC in
③	No Connection
④	+Vdc out
⑤	0 Vdc out

Dual Outputs

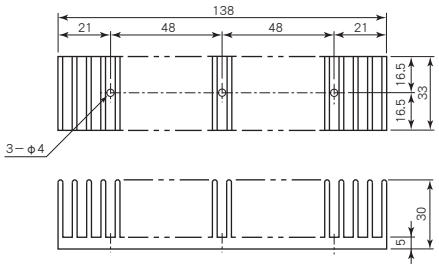


Terminal Outs

①	AC in
②	AC in
③	+Vdc out
④	Common
⑤	−Vdc out

注：フレームグランド端子は取付ネジを使用してください。
Note : Frame ground terminal be used with mounting screw.

■ Option Heat Sink



Option Heat Sink Model : A3-3664

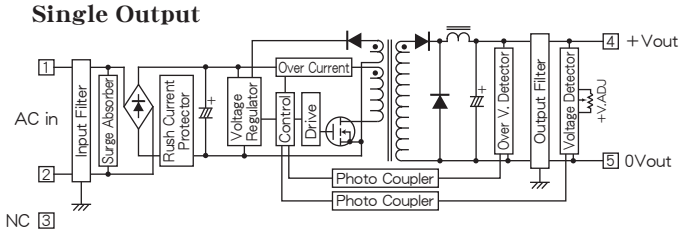
■ Selection Guide

Table 1

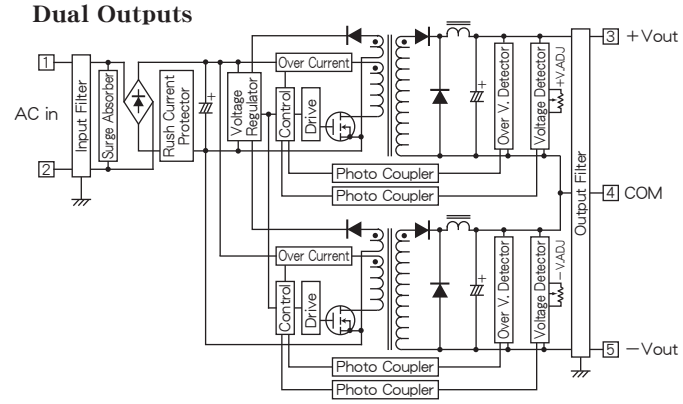
Model Number	Input Volt. (Range) (V. AC)	Output Voltage (V. DC)	Output Current (A)	Efficiency (Typical) (%)
PC 100 − 5 S 14A	100 (85～132)	5	14	80
PC 100 − 12 S 8.3A		12	8.3	84
PC 100 − 15 S 6.6A		15	6.6	85
PC 100 − 24 S 4.2A		24	4.2	87
PC 100 − 12 D 4A		±12	± 4	84
PC 100 − 15 D 3.3A		±15	± 3.3	84
PC 200 − 5 S 14A	200 (175～264)	5	14	80
PC 200 − 12 S 8.3A		12	8.3	84
PC 200 − 15 S 6.6A		15	6.6	85
PC 200 − 24 S 4.2A		24	4.2	87
PC 200 − 12 D 4A		±12	± 4	84
PC 200 − 15 D 3.3A		±15	± 3.3	84

■ Block Diagram

Single Output



Dual Outputs



■ Characteristic Curves

Fig. 1 Derating Curve

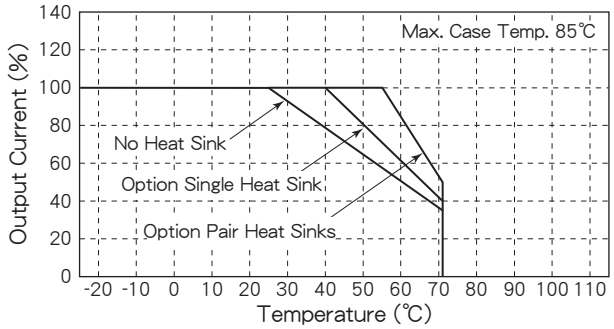


Fig. 2 Short Circuit Operating Area

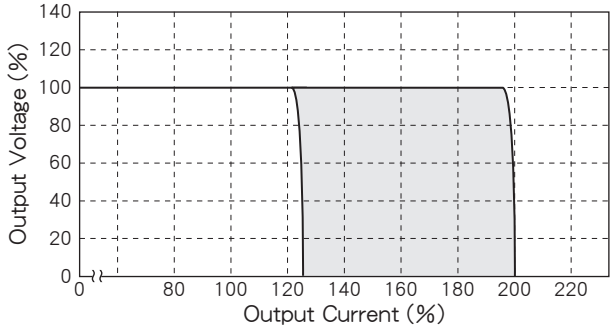


Fig. 3 Temperature Characteristic on Case Surface

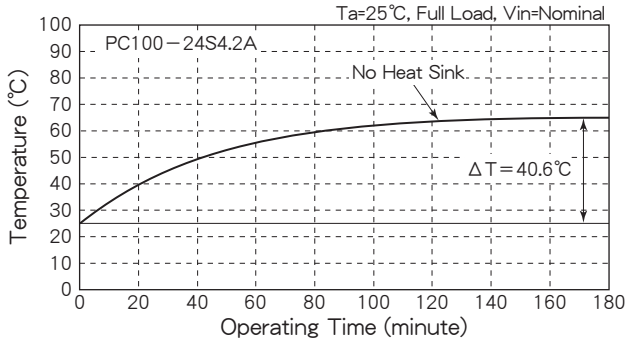


Fig. 4 Efficiency vs. Output Current

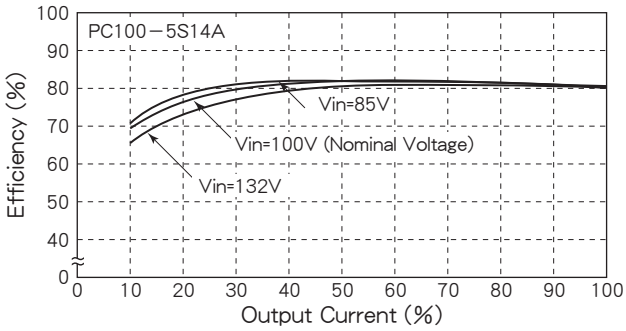


Fig. 5 Efficiency vs. Output Current

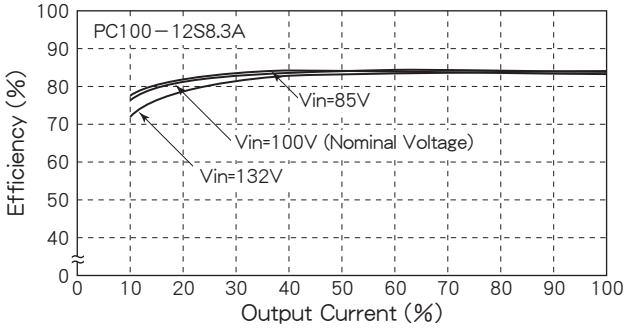


Fig. 6 Efficiency vs. Output Current

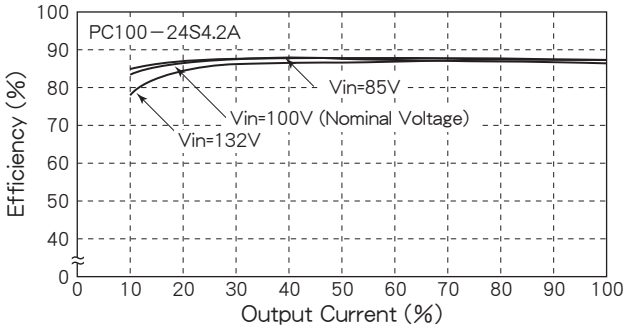


Fig. 7 Efficiency vs. Output Current

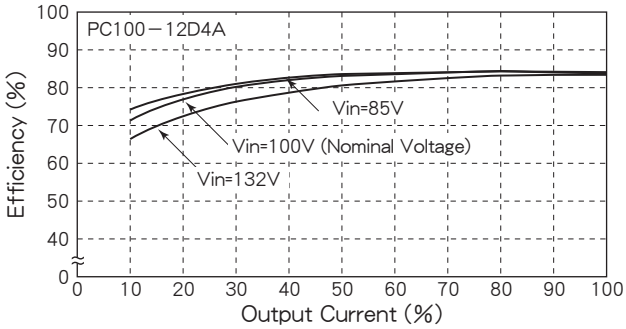


Fig. 8 Efficiency vs. Output Current