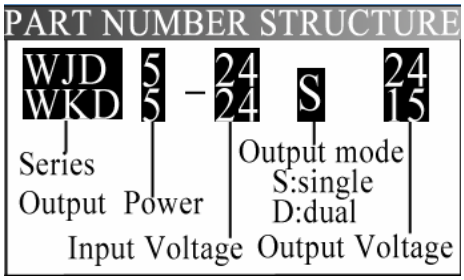
WKD Series Converter WJD Series Converter

RoHS

RoHS



WKD Features

- 1 in.×1in.Standard Size
  (25.4mm*25.4mm*12.7mm)
  (25.4mm*25.4mm*10.2mm)
- Wide input voltage
- 1500Vdc Isolation Voltage
- Operating Case Temp:-40℃ to 105℃
- Applications: *Widely applicable to Communications, Industry ,Power Electricity。*

WJD Features

- 1.25 in.×0.8in.Standard Size
  (31.8mm*20.3mm*10.2mm)
- Wide input voltage
- 1500Vdc Isolation Voltage
- Operating Case Temp:-40℃ to 105℃
- Applications: *Widely applicable to Communications, Industry ,Power Electricity。*

Contact Information

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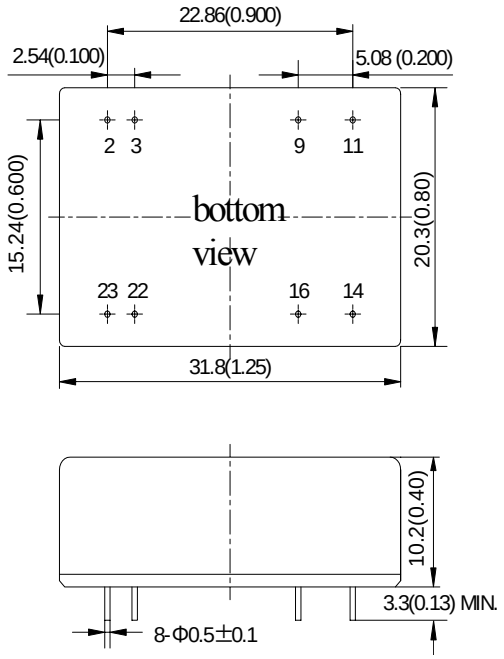
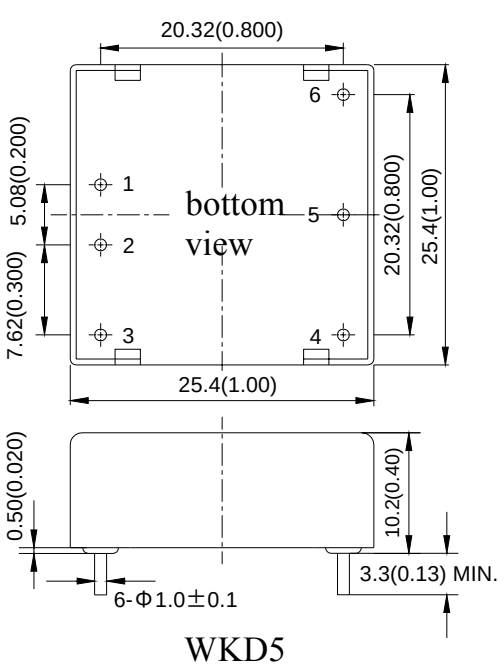
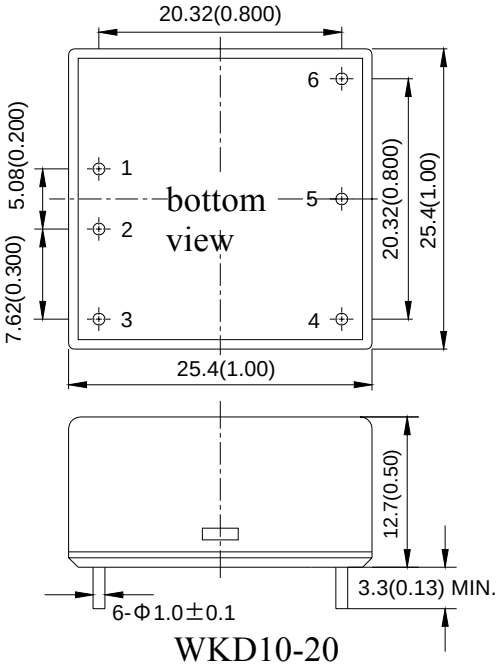
Outline Diagram



WJD Series Single output		
Pin	Sign	Function
2	-Vin	Negative Input Voltage
3	-Vin	Negative Input Voltage
9	NC	No Connection
11	NC	No Connection
14	+Vo	Positive Output Voltage
16	-Vo	Negative Output Voltage
22	+Vin	Positive Input Voltage
23	+Vin	Positive Input Voltage
Case material: Aluminum shell plastic cover ,black; Pin: copper with tin-cerium plating Notes: all dimensions in mm(inches) Tolerance:X.X±0.5(X.XX±0.02) X.XX±0.25(X.XX±0.01)		



WKD5



WKD10-20

WKD5				WKD10-20		
		Single output	Dual output	Single output		
Pin	Sign	Function		Pin	Sign	Function
1	+Vin	Positive Input Voltage		1	+Vin	Positive Input Voltage
2	-Vin	Negative Input Voltage		2	-Vin	Negative Input Voltage
3	NP	No Pin; Component Object Model		3	CNT	Remote Control Pin
4	-Vo/Vo2	Negative Output Voltage	Output 2	4	-Vo	Negative Output Voltage
5	NP/COM	No Pin; Component Object Model	Common ground for output	5	TRIM	Output voltage adjust
6	+Vo/Vo1	Positive Output Voltage	Output 1	6	+Vo	Positive Output Voltage
Case material: Aluminum,black; Pin: copper with gold plating Notes: all dimensions in mm(inches) Tolerance:X.X±0.5(X.XX±0.02) X.XX±0.25(X.XX±0.01)				Case material: Aluminum shell plastic cover;black; Pin: copper with gold plating Notes: all dimensions in mm(inches) Tolerance:X.X±0.5(X.XX±0.02) X.XX±0.25(X.XX±0.010)		

Performance Specifications And Ordering Guide

Unless otherwise specified, all tests are at room temperature and standard atmosphere, pure resistive load and basic connection.

Model	Output				Input	Efficiency
	Voltage(V)	Current(A)	Ripple and Noise(mV)	Capacitive load(uF)	Range-DC (Volts)	
WJD Series						
WJD5-24S03	3.3	1.52	50	2200	9~36	80%
WJD5-24S05	5	1.0	50	2200	9~36	82%
WJD5-24S12	12	0.42	100	470	9~36	81%
WJD5-24S15	15	0.33	100	470	9~36	85%
WJD5-24S24	24	0.21	100	100	9~36	82%
WJD5-24D12	±12	±0.21	100	100	9~36	83%
WJD5-48S03	3.3	1.52	50	2200	18~75	78%
WJD5-48S05	5.05	1.0	50	2200	18~75	81%
WJD5-48S12	12	0.5	50	470	18~75	83%
WJD5-48S24	24	0.25	100	100	18~75	81%

Continue

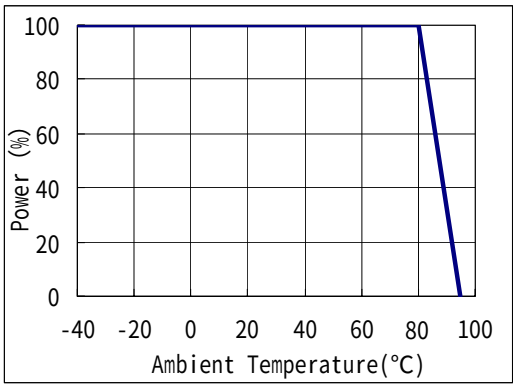
Model	Output				Input	Efficiency
	Voltage(V)	Current(A)	Ripple and Noise(mV)	Capacitive load(uF)	Range-DC (Volts)	
WKD Series						
WKD5-24S03	3.3	1.52	50	2200	9~36	78%
WKD5-24S05	5	1.0	50	2200	9~36	80%
WKD5-24S12	12	0.42	50	470	9~36	81%
WKD5-24S15	15	0.34	100	330	9~36	81%
WKD5-24S24	24	0.21	100	100	9~36	85%
WKD5-24D05	±5	±0.5	50	1000	9~36	82%
WKD5-24D15	±15	±0.17	100	100	9~36	87%
WKD5-48S03	3.3	1.52	50	2200	18~75	79%
WKD5-48S05	5	1.0	50	2200	18~75	81%
WKD5-48S12	12	0.5	50	470	18~75	83%
WKD5-48S24	24	0.21	100	100	18~75	83%
WKD10-24S05	5	2.0	85	2200	9~36	85%
WKD10-24S12	12	0.84	100	1000	9~36	85%
WKD10-24S15	15	0.67	100	1000	9~36	85%
WKD10-24S24	24	0.42	100	330	9~36	88%
WKD10-24D12	±12	±0.42	100	470	9~36	84%
WKD10-24D15	±15	±0.33	100	330	9~36	85%
WKD10-48S03	3.3	3.0	85	2200	18~75	85%
WKD10-48S05	5	2.0	85	2200	18~75	85%
WKD10-48S24	24	0.42	100	330	18~75	82%
WKD15-24S05	5	3.0	85	6800	9~36	90%
WKD15-24S12	12	1.25	100	1000	9~36	87%
WKD15-48S12	12	1.25	100	1000	18~75	87%
WKD20-24S03	3.3	5.0	85	6800	9~36	86%
WKD20-24S05	5	4.0	85	6800	9~36	90%
WKD20-24S12	12	1.67	100	1000	9~36	87%
WKD20-48S12	12	1.67	100	1000	18~75	89%

Performance/Functional Specifications

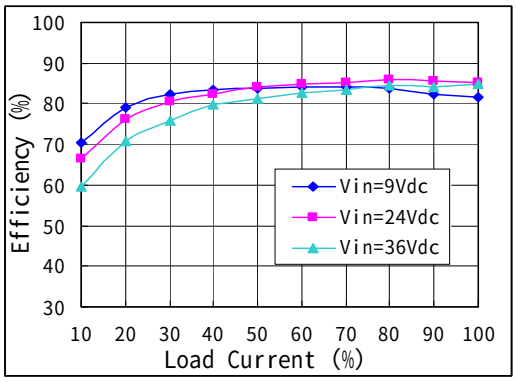
Input			General	
Input Voltage:	See Ordering Guide		**Isolation Voltage:**	1500Vdc/1min/1mA (Input-Output)
Output			**Switching Frequency:**	300kHz(typ.)
Voltage Accuracy:	±1% ±3%	Vo1 Vo2	**MTBF：**	2×10^6h(Bellcore tr332)
Line Regulation:	±0.2%max.		**Temperature Coeffcient:**	±0.02% per℃(Max)
Load Regulation:	±0.5% max.		**Case Temperature:**	-40℃～+105℃(Industry)
Ripple and Noise:	See Ordering Guide		**Storage Temperature:**	-55℃～+125℃
Efficiency:	See Ordering Guide		**Relative Humidity:**	10%~90%
Transient Response Recovery Time(μs):	see respective data sheet		**Short-circuit Protection:**	Hiccup mode, automatic recovery
Transient ResponseVoltage Deviation (%):	see respective data sheet		**Isolation Resistance:**	50MΩmin(500Vdc,90%RH)
Start-up Delay Time:	see respective data sheet		**Manual Soldering:**	425℃max (5s Max)
Rise Time:	see respective data sheet		**Wave Soldering:**	255℃max (10s Max)
			Weight:	10g-17g

Characteristic Curves

Derating	Efficiency



WJD5-24D12



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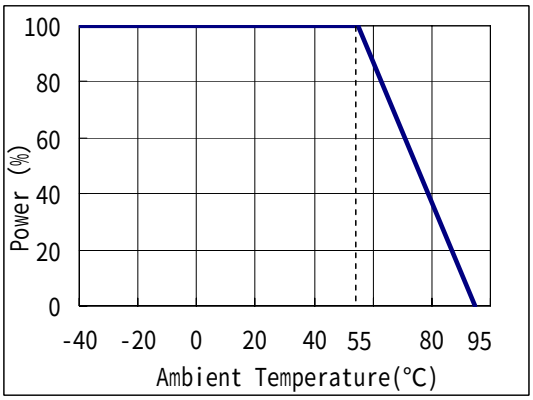

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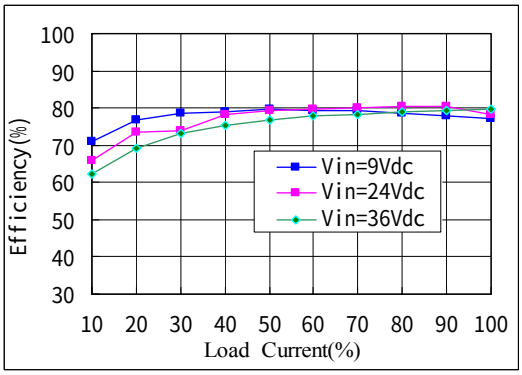

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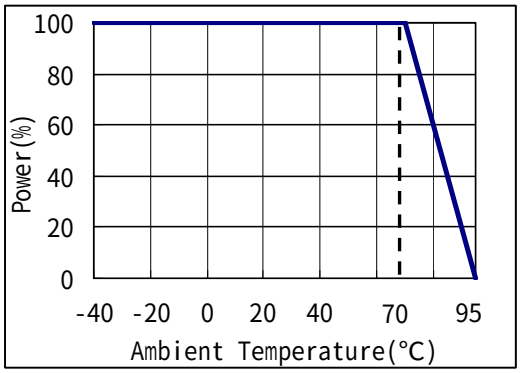

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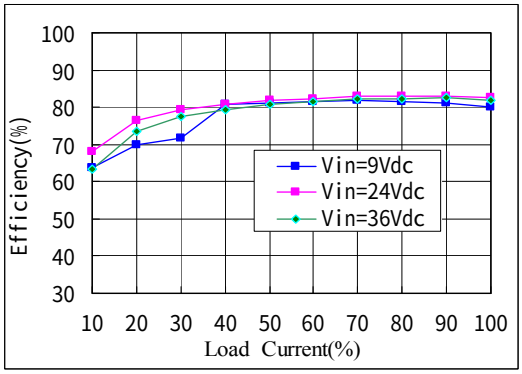

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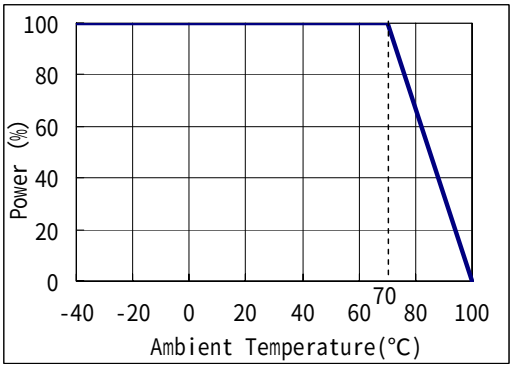

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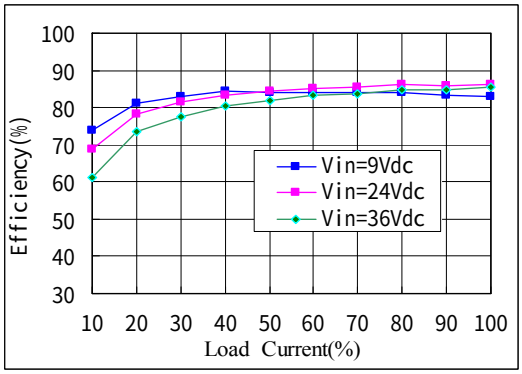
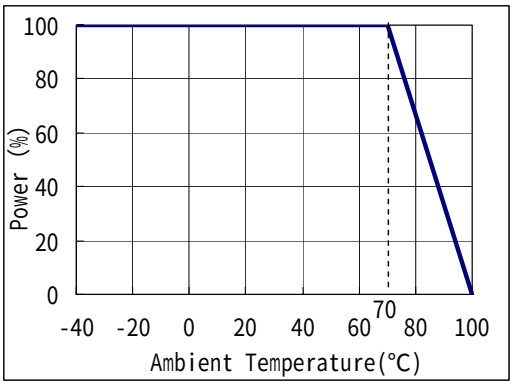


WJD5-24S12

Derating	Efficiency



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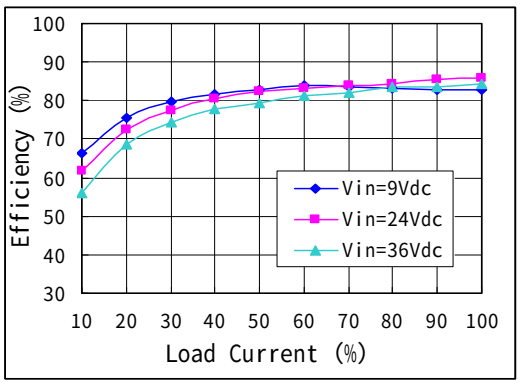

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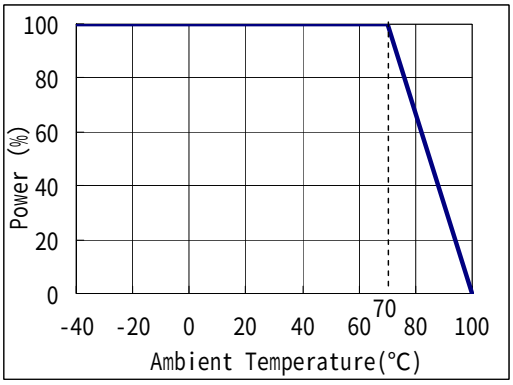

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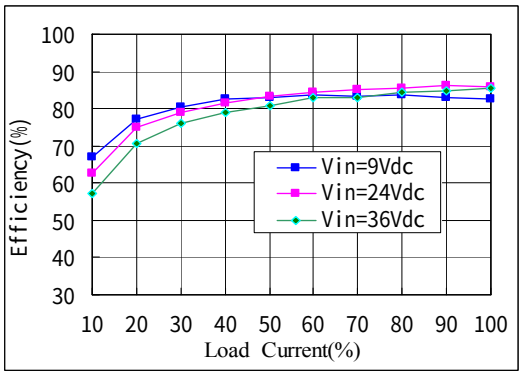

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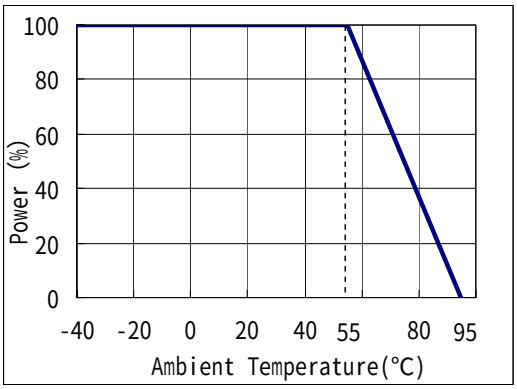

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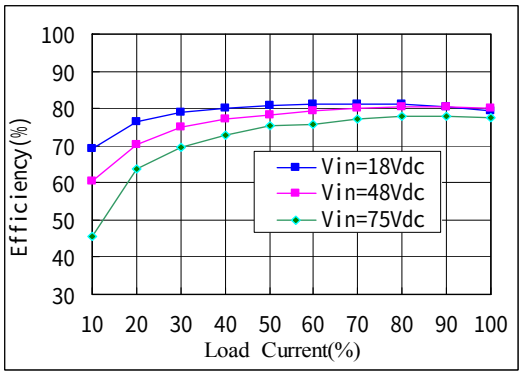

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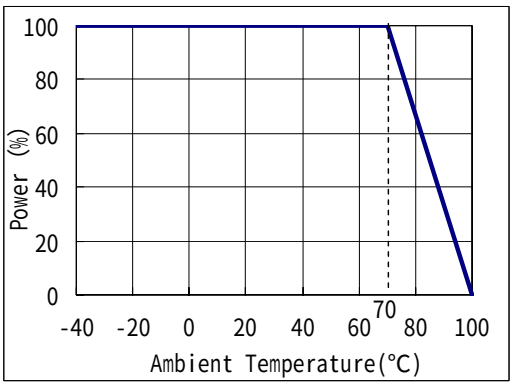

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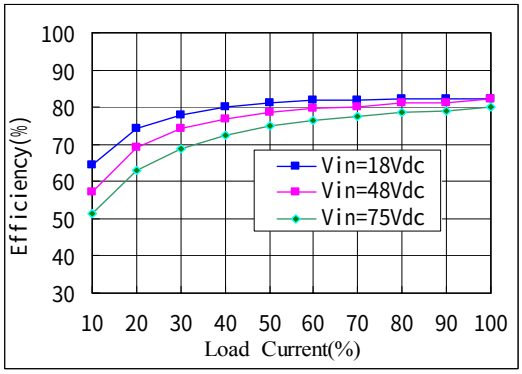
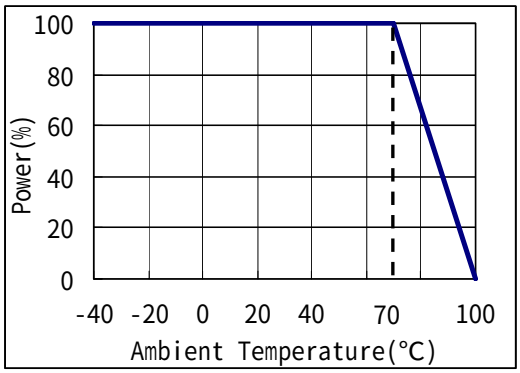


WJD5-48S05

Derating	Efficiency



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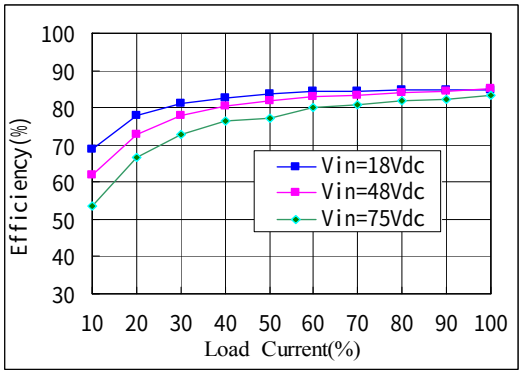

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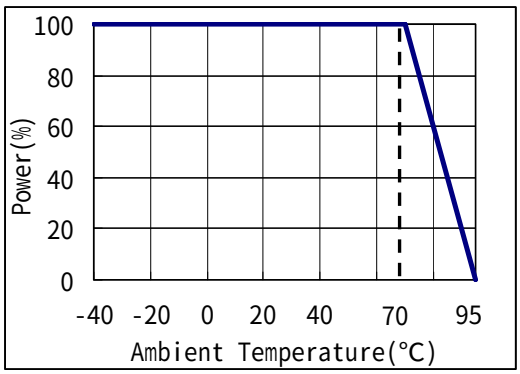

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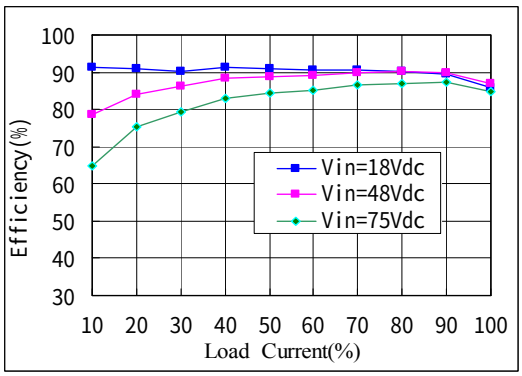

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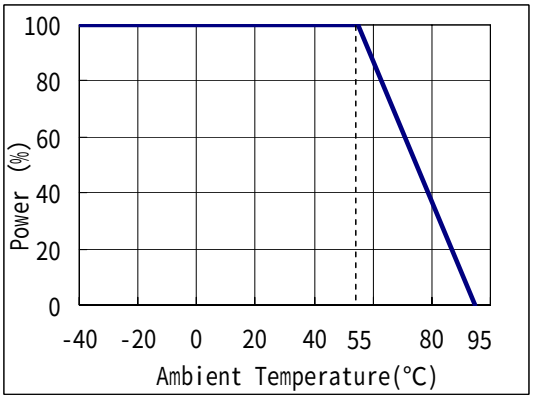

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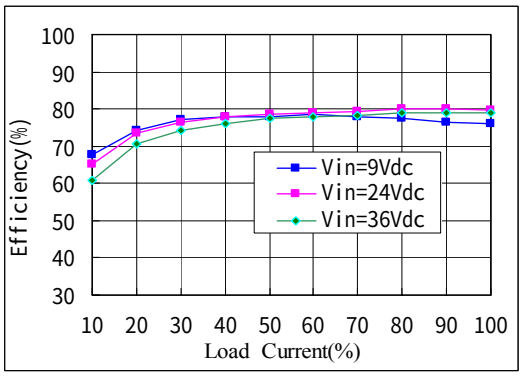

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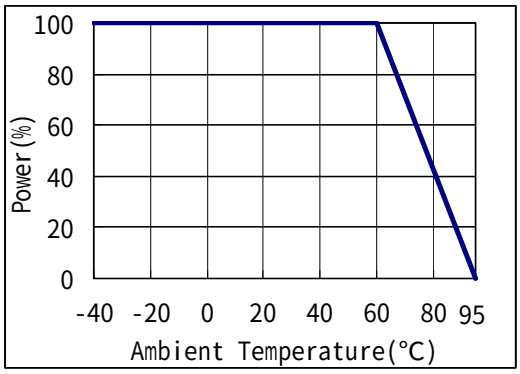

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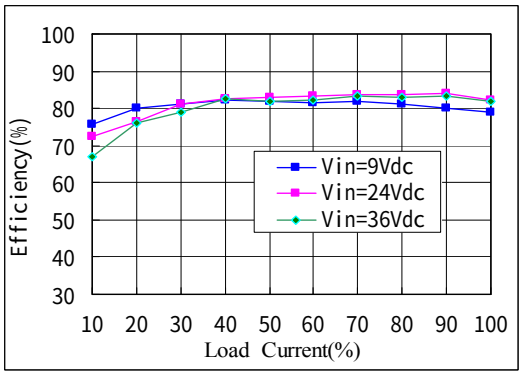
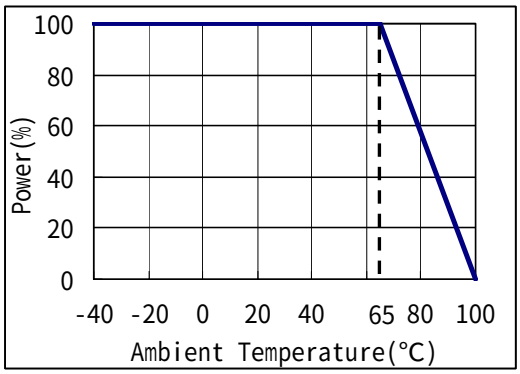


WKD5-24S05

Derating	Efficiency



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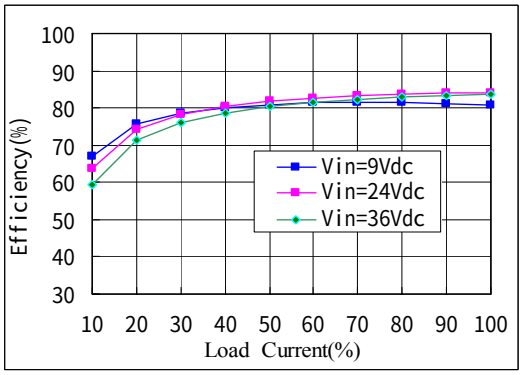

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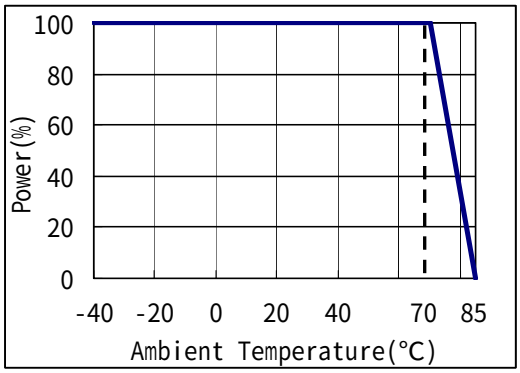

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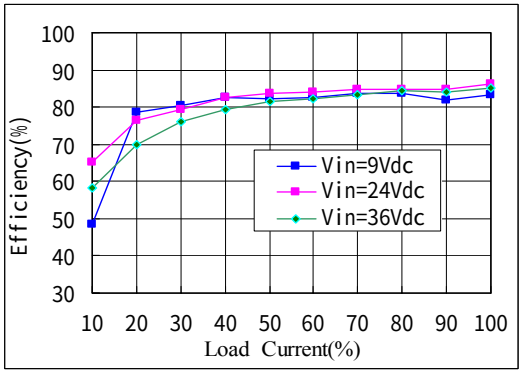

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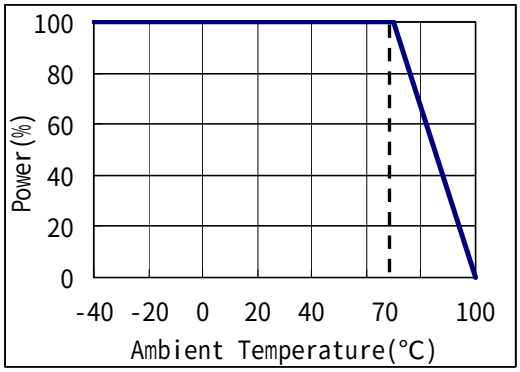

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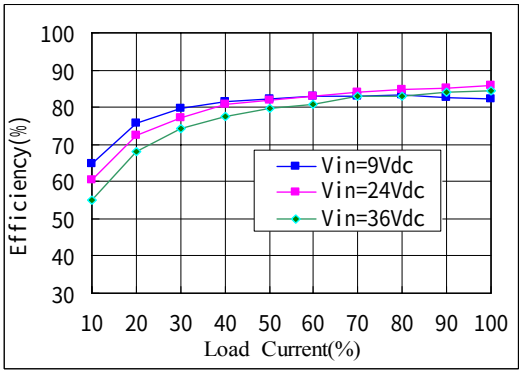

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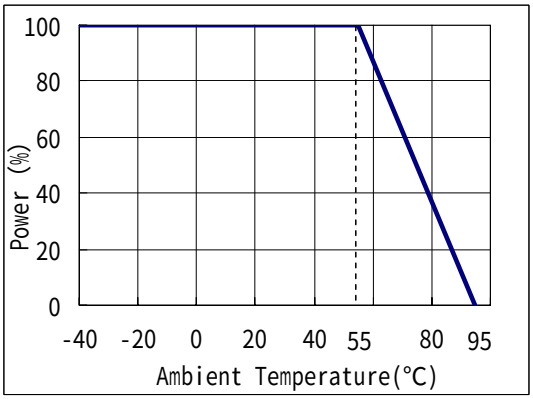

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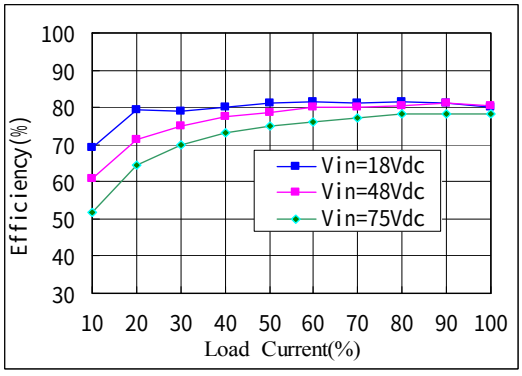
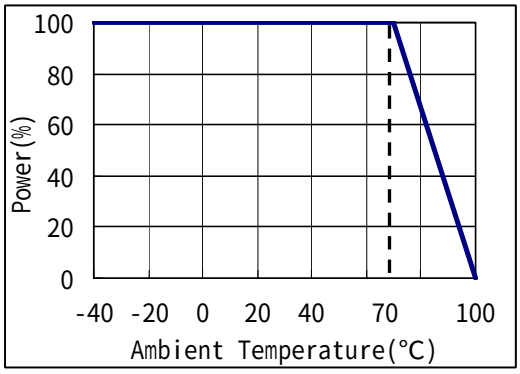


WKD5-48S03

Derating	Efficiency



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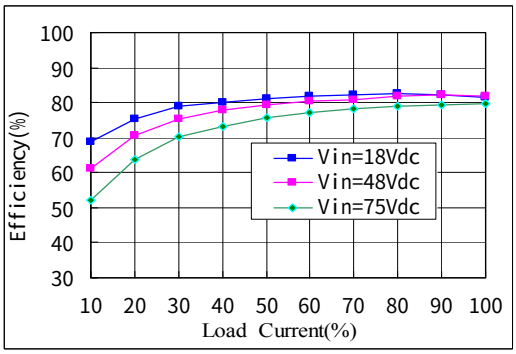

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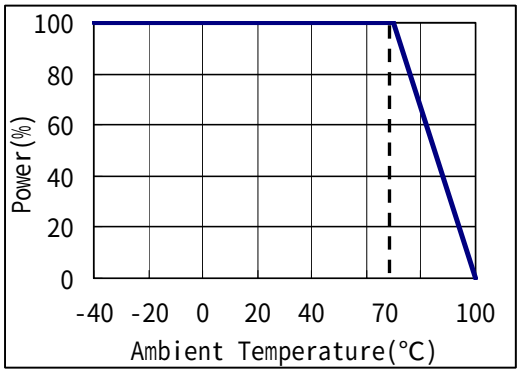

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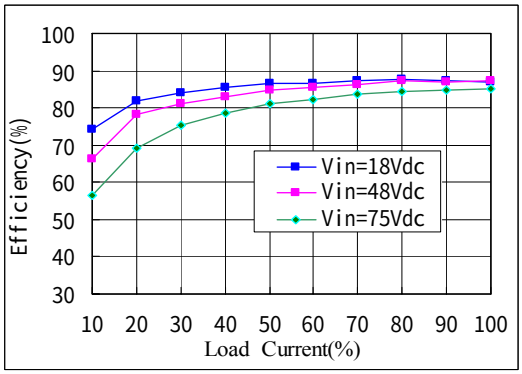

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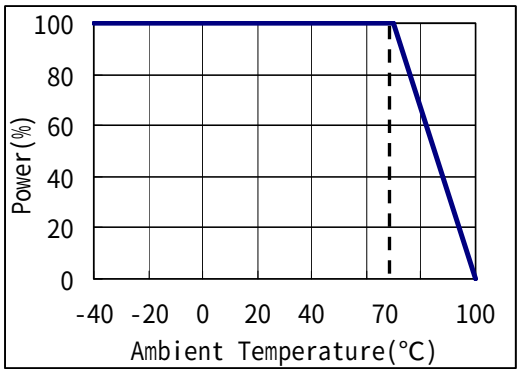

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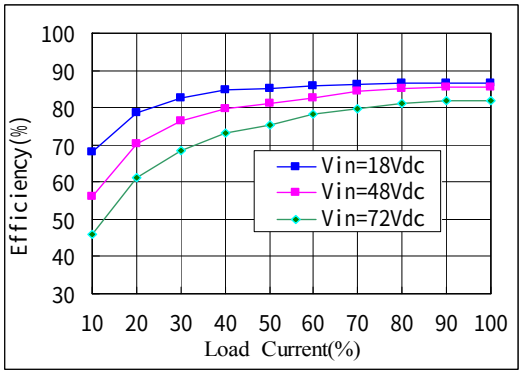
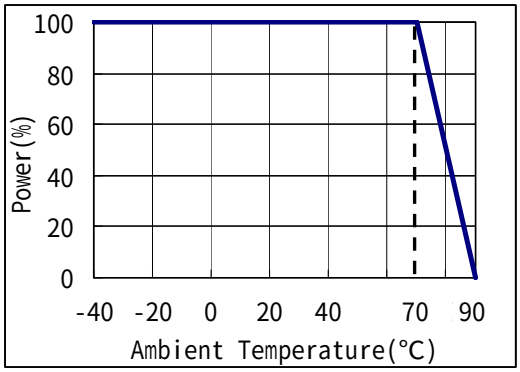


WKD5-48S24



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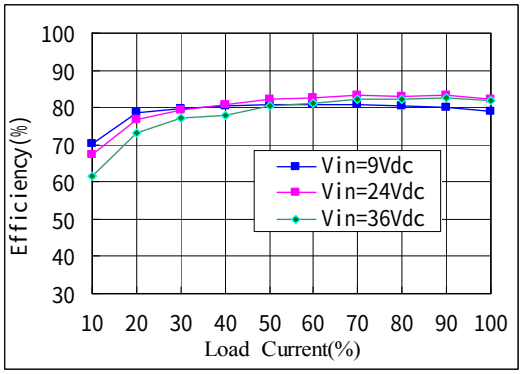
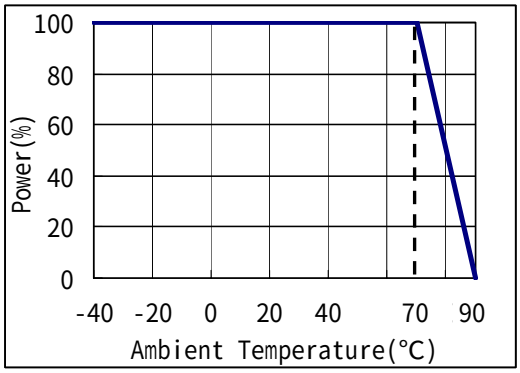


WKD5-24D05

Derating	Efficiency



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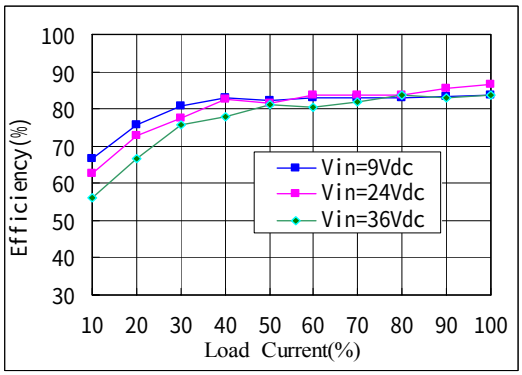

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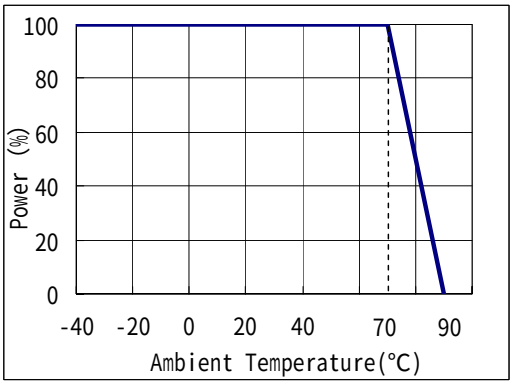

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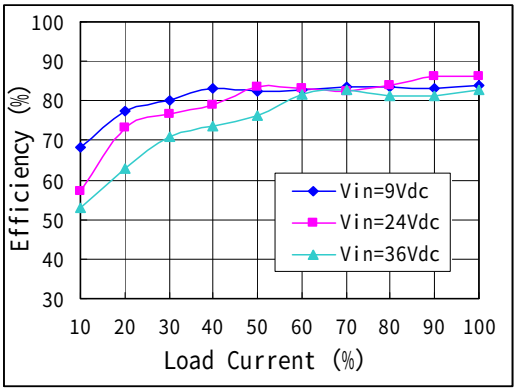

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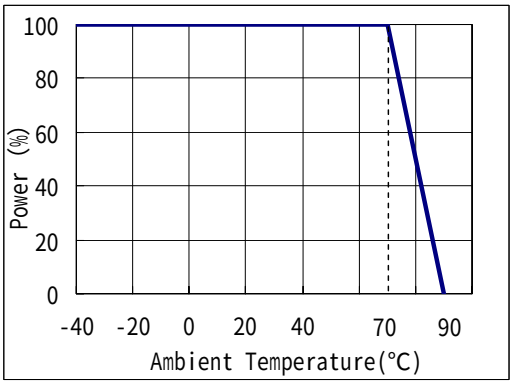

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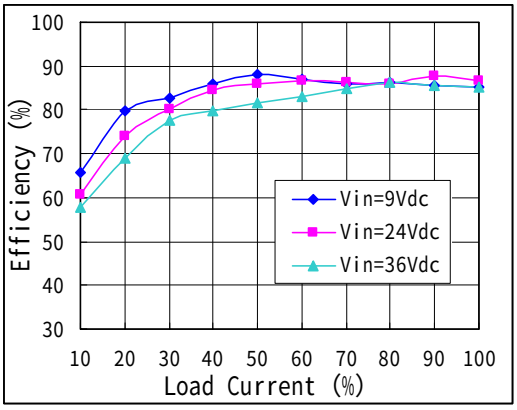

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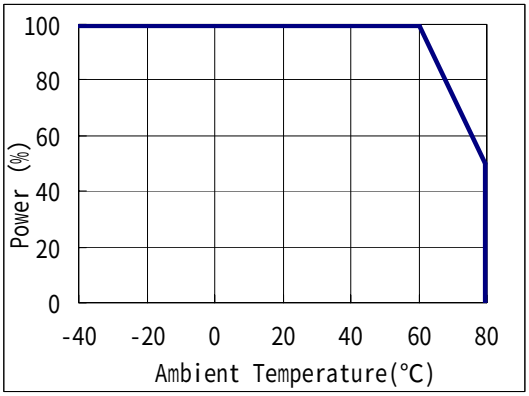

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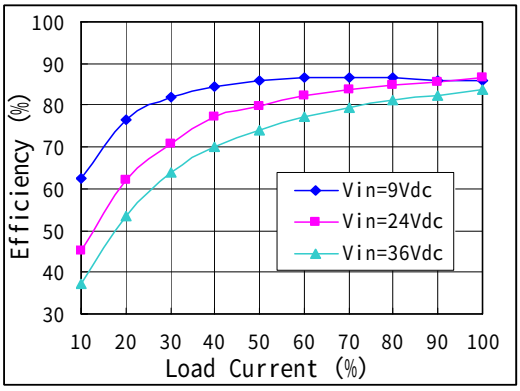
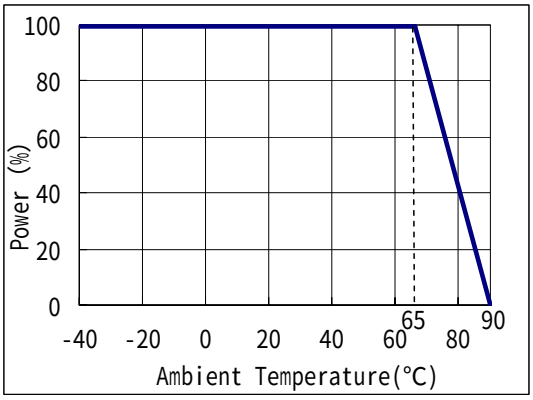


WKD10-24S05

Derating	Efficiency



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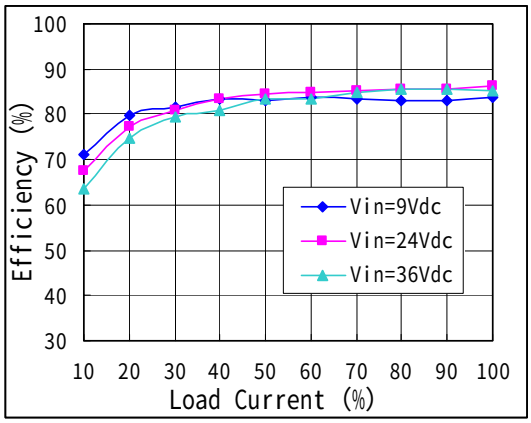

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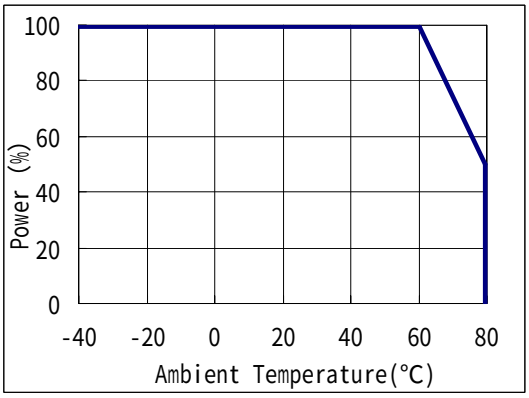

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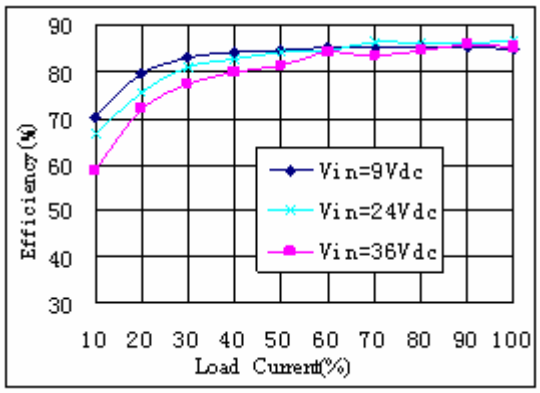

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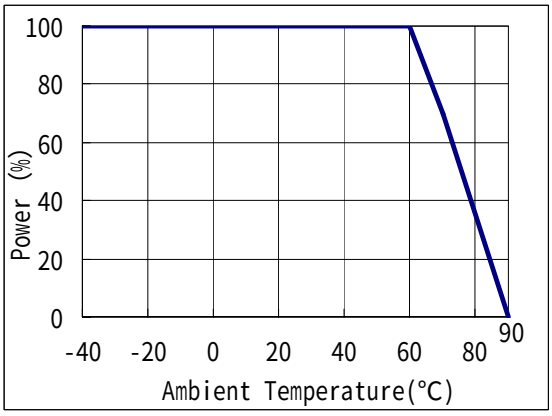

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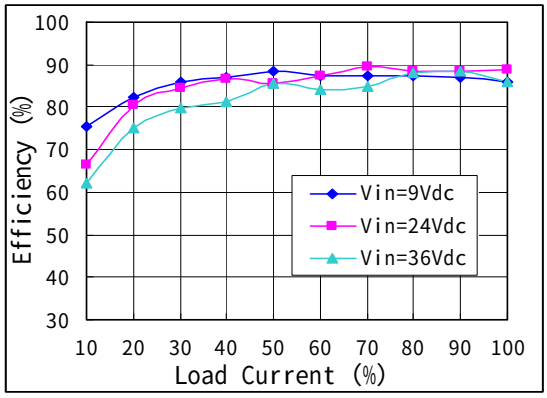

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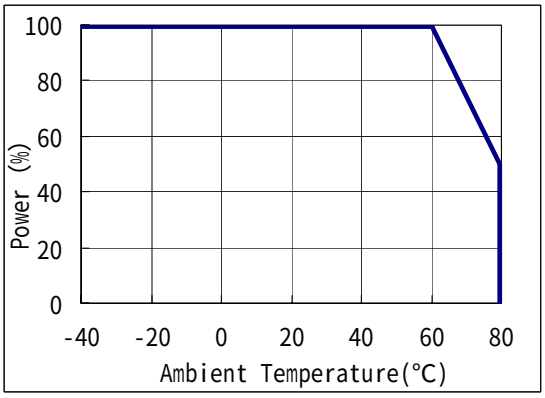

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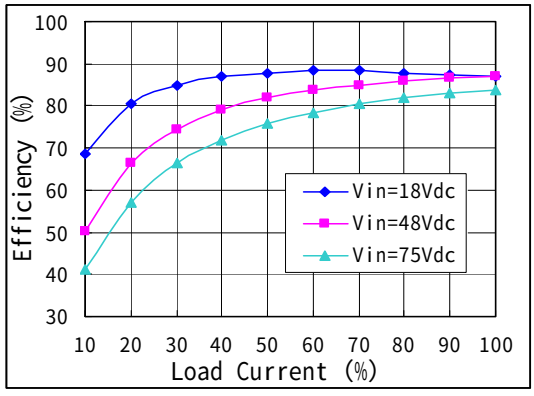
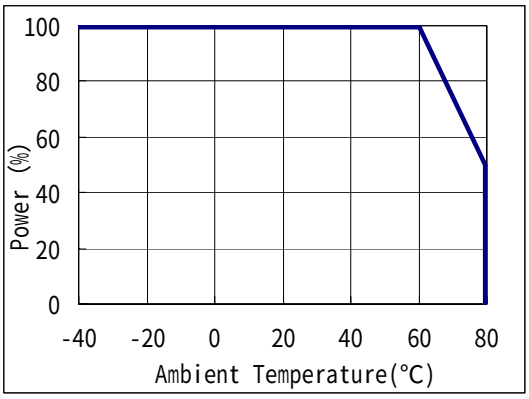


WKD10-48S03

Derating	Efficiency



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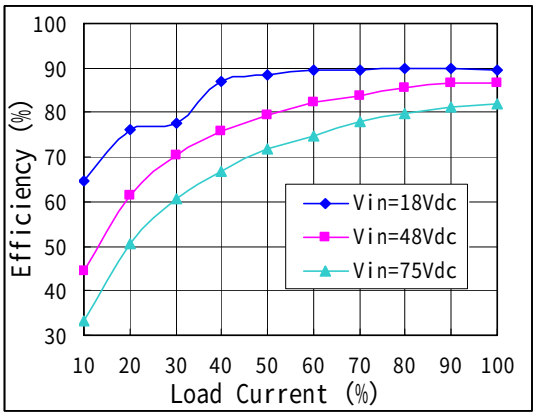

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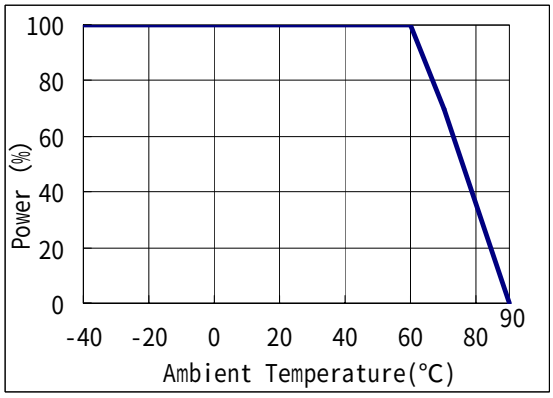

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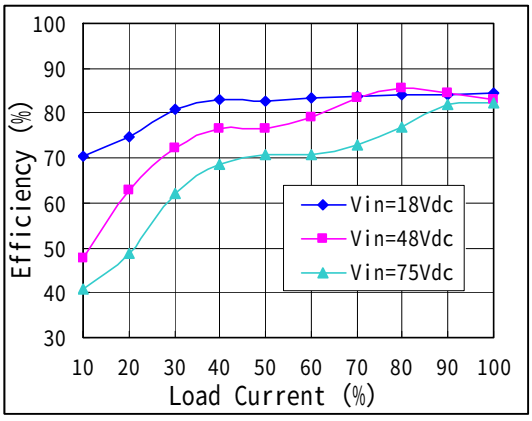

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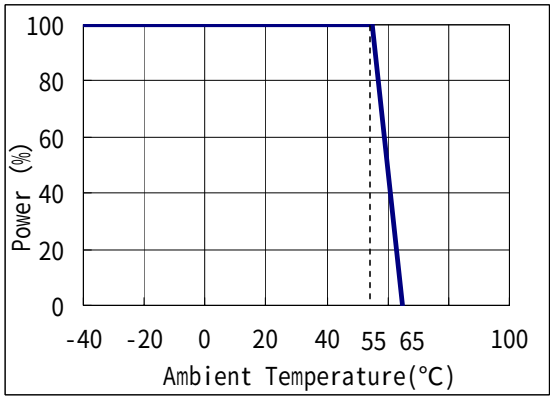

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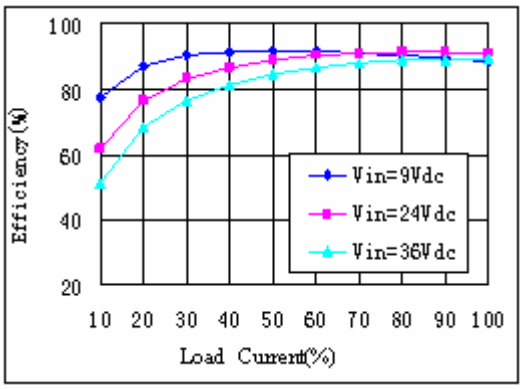

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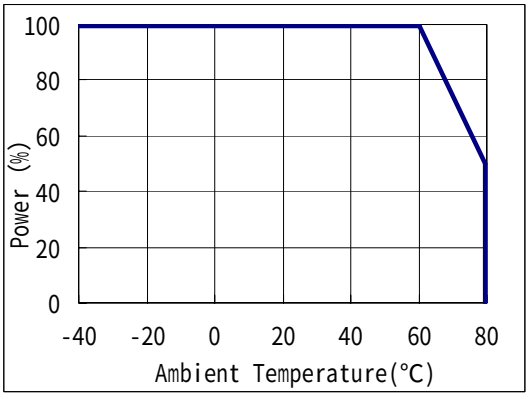

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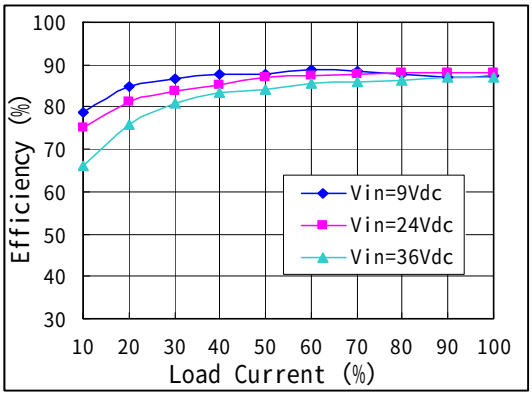
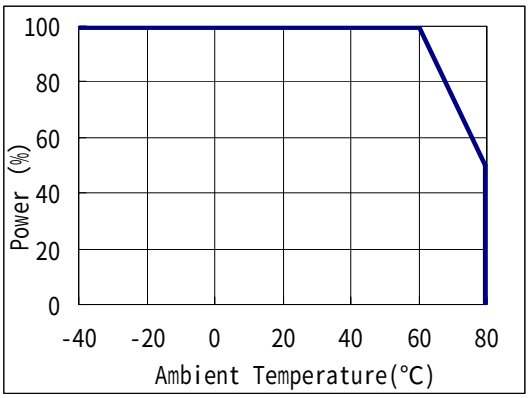


WKD15-24S12

Derating	Efficiency



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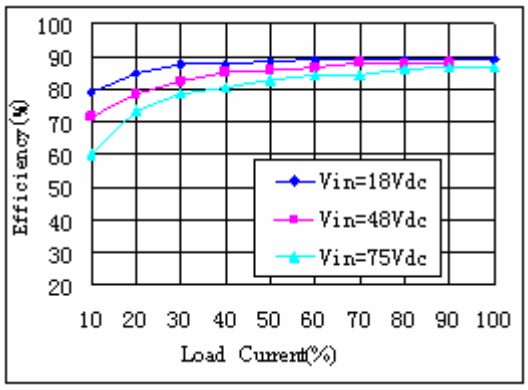

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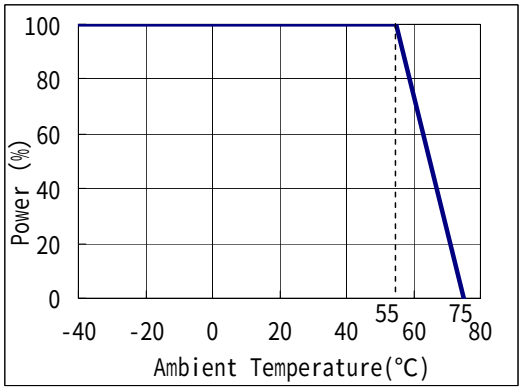

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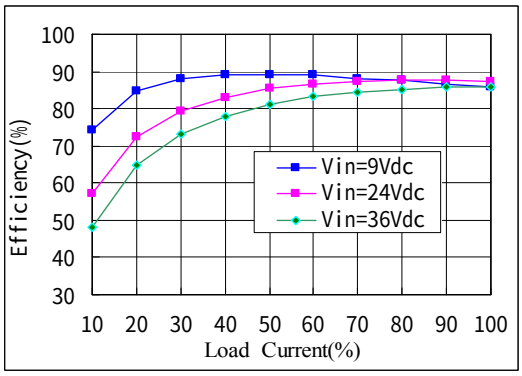

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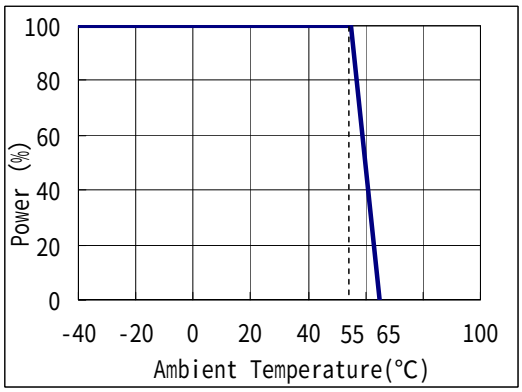

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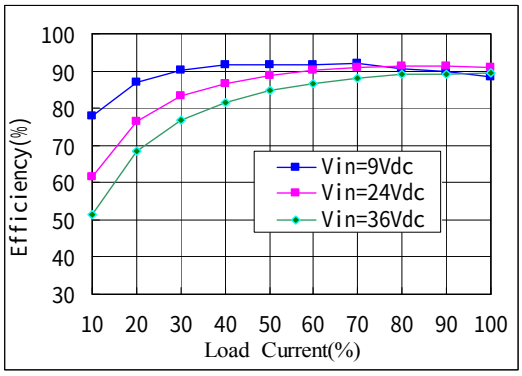

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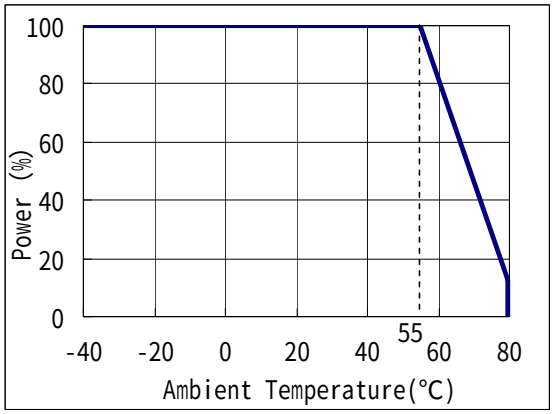

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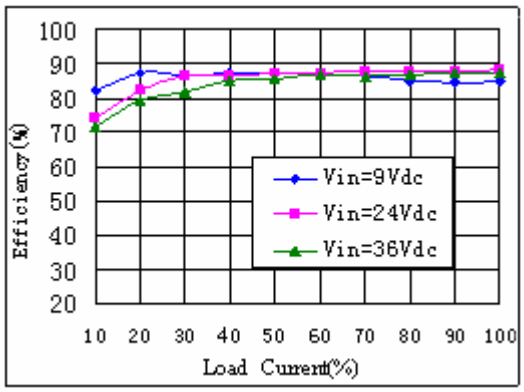
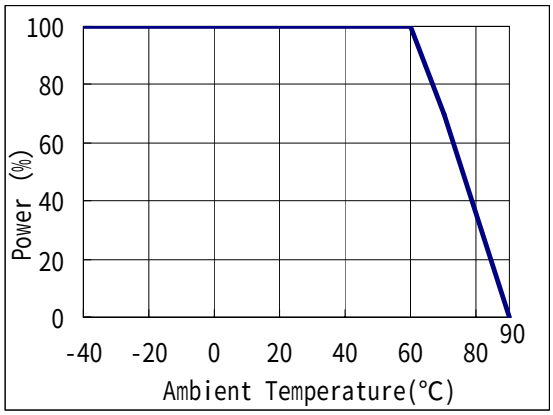


WKD20-24S12

Derating	Efficiency



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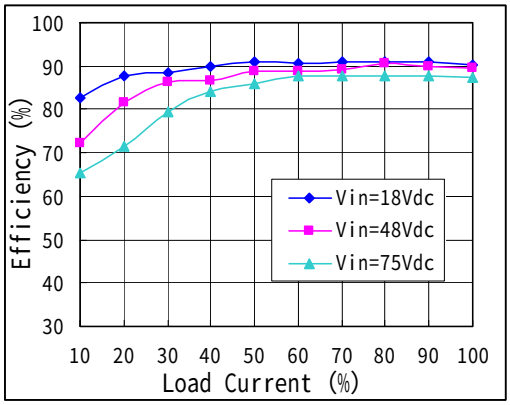
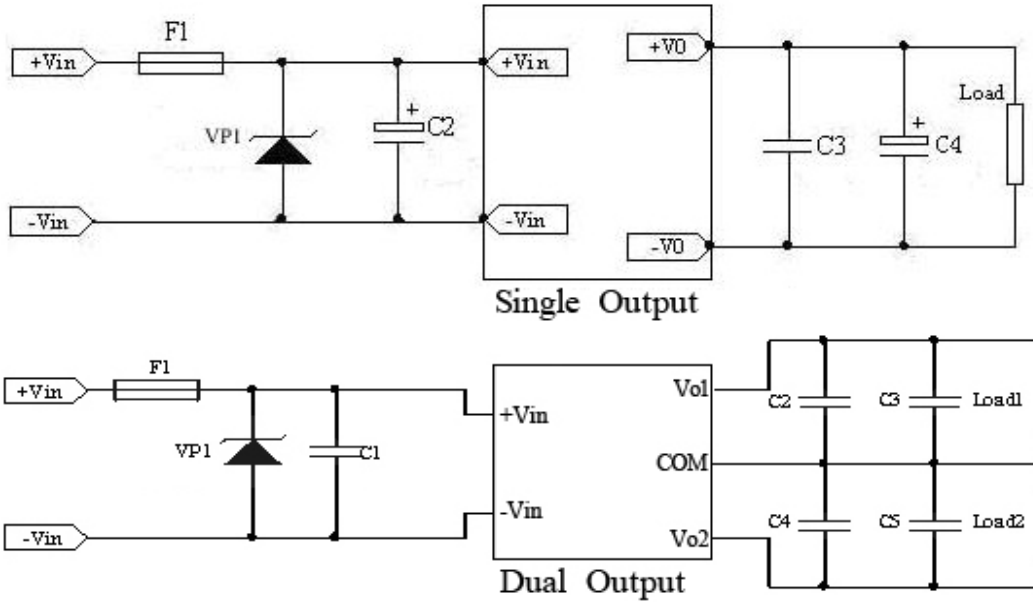


WKD20-48S12

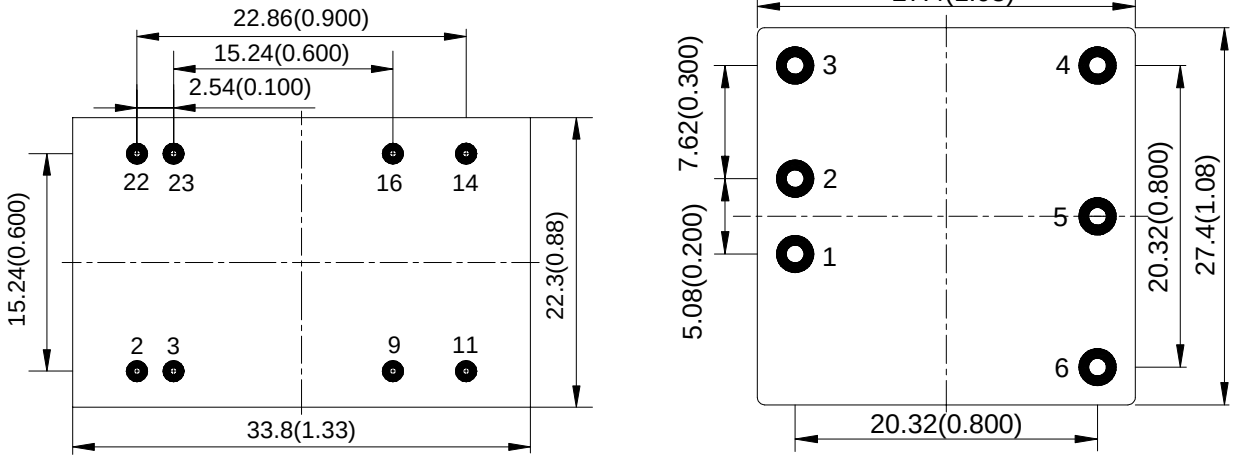
Design Considerations

Basic Connection



Notes: Please see the application information followed for the further information.

Recommended Layout



	WJD Series	WKD Series
NO.	Recommendation & Notes	
Pad Design	Pad holes :0.7mm，pad diameter including hol:1.8mm	Pad holes :1.2mm，pad diameter including hol:2.5mm
Mounting Direction	heatsink face up, for natural convection	
Safety	Isolated Converters, care to the spacing between input and output	
Electrical	The Vin(-) and Vo(-) planes should be placed under of the converter separately. Avoid routing sensitive signal or high disturbance AC signal under the converter	

Thermal Consideration

The converters operate in a variety of thermal environments; however, sufficient cooling should be provided to ensure reliable operation of the unit. Heat is removed by conduction, convection and radiation to the surrounding environment.
When ambient temperature is higher than the permitted operating, the derating curves should be referred or external heat dissipation measures. Forced air cooling or heatsink, should be used. The air tunnel should be considered for forced air cooling, to avoid heated air be hindered or forming swirl; when heatsink used, it should be attached the converter closely, through double-side thermal conductivity
insulation adhesive or thermal conductivity silicone for heat exchange.

Safety Consideration

The module, as one component for the end user, should be installed into the equipment. It is required to meet safety requirements in the system design.
To avoiding fire and be protected when short circuit occurred, it is recommended that a fast blow fuse with rating 1.5 to 2.5 times of converter's continuous input peak current is used in series at the input terminal.(Inrush current suppression circuit is required for greater filter capacitance at input terminal, or it will result in the misoperation of the fuse).

Series and Parallel Operation

The converters should not be paralleled directly to increase power, but they can be paralleled each other
through o-ring switches or diodes. Make sure that every converter's maximum load current should not exceed the rated current at anytime if they are paralleled without using external current sharing circuits. The converters can operate in series. To prevent against start-up failure due to start up time difference,
SBD with low voltage difference can be paralleled at the output pins(SBD negative terminal connect to the positive pin of the output) for each converter.

Cleaning Notice

The converter case is not a hermetically-sealed construction, a sufficient drying process is required after the converter cleaning, make sure the liquid congregated is removed, or it will damage the converter or degradation of performance
After surface treatment, the appearance of the converter may be affected by the organic solvent, protection measures should be taken before cleaning when appearance is concerned.

Delivery Package Information

Package material is multiple wall corrugated ，internal material is anti-static foam，it's surface resistance is from $10^5\ \Omega$ to $10^{12}\ \Omega$。
WKD5 :Tray capacity: 2×32=64 PCS/box，Tray weight: 0.77 kg；Carton capacity:15×64 =960PCS，Carton weight:12.0kg;
WKD10-20 :Tray capacity: 2×32=64 PCS/box，Tray weight: 1.17 kg；Carton capacity:8×64 =512PCS，Carton weight:10.0kg;
WJD: Tray capacity: 2×30=60 PCS/box，Tray weight: 0.7kg；Carton capacity:15×60 =900PCS，Carton weight:11.0kg;

Quality Statement

The converters are manufactured in accordance with ISO 9001 system requirements, and are monitored 100% by auto-testing system, 100% burn in.
The warranty for the converters is 5-year.