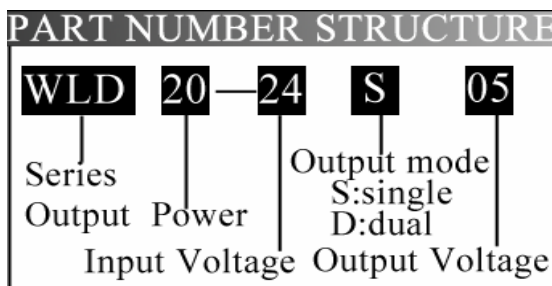


## WLD Series Converter

## DC-DC Converter WLD Series



### Features

2 in.×1in.Standard Size

Wide Input Voltage

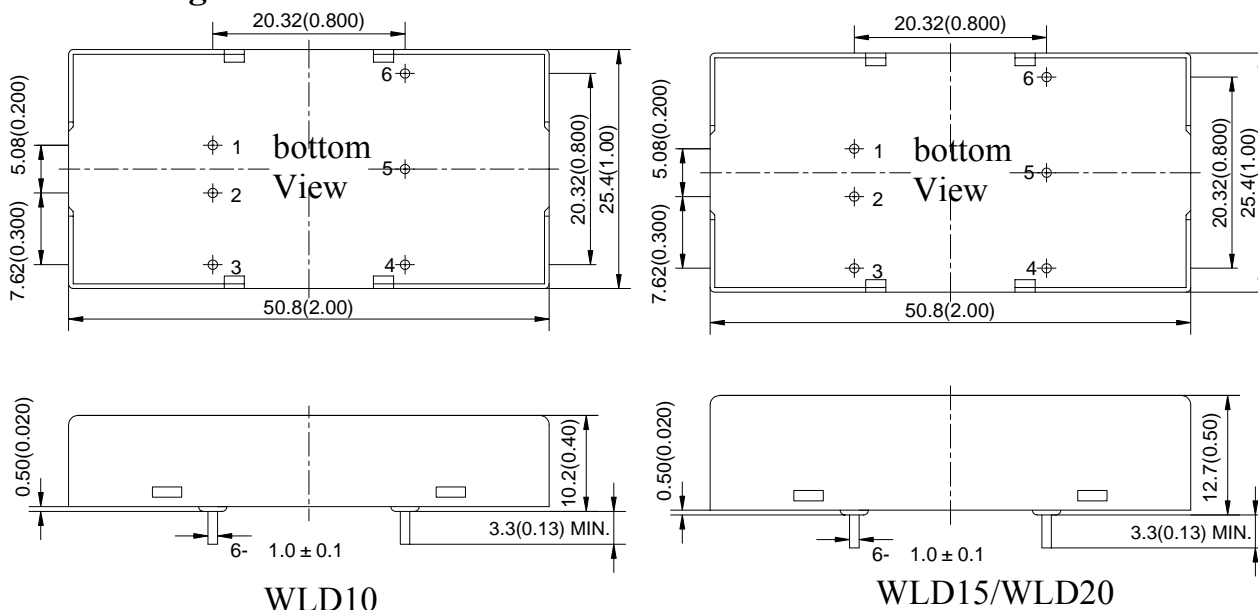
1500V<sub>dc</sub> Isolation Voltage

Operating Case Temp:-40 to 105

Output Short-circuit Protection,  
hiccup, auto-recovery

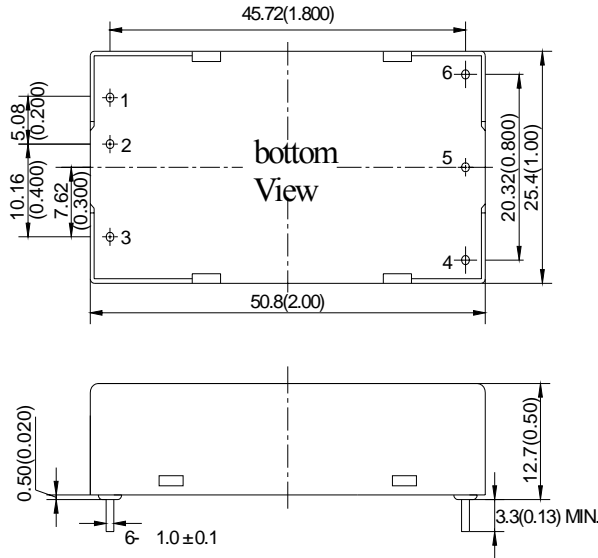
Applications:Telecommunication equipments,  
data exchange servers and distributed power.

### Outline Diagram



Single Output Description			Dual Output Description		
S/N	Symbol	Function	S/N	Symbol	Function
1	+Vin	Positive Input Voltage	1	+Vin	Positive Input Voltage
2	-Vin	Negative Input Voltage	2	-Vin	Negative Input Voltage
3	CNT	Remote Control Pin	3	CNT	Remote Control Pin
4	-Vo	Negative Output Voltage	4	Vo2	Output 2
5	TRIM	Output voltage adjust	5	COM	Common ground for output
6	+Vo	Positive Output Voltage	6	Vo1	Output 1

Case material: Aluminum, black; Pin: copper with gold plating  
 Notes: all dimensions in mm(inches)  
 Tolerance: x.x mm:±0.5 (x.xx:±0.020) x.xx mm:±0.25 (x.xxx:±0.010)



WLD30\WLD50

Pin	Sign	Function
1	+Vin	Positive Input Voltage
2	-Vin	Negative Input Voltage
3	CNT	Remote Control Pin
4	TRIM	Output voltage adjust
5	-Vo	Negative Output Voltage
6	+Vo	Positive Output Voltage

Case material: Aluminum, black;  
Pin: copper with gold plating  
Notes: all dimensions in mm(inches)  
Tolerance: x.x mm:±0.5 ( x.xx:±0.020)  
          x.xx mm:±0.25 ( x.xxx:±0.010)

**Performance Specifications And Ordering Guide**

Unless otherwise specified, all values are given at: 25 °C, one standard atmosphere pressure, pure resistive load and basic connection.

Model	Output				Input	Efficiency
	Voltage(V)	Current(A)	Ripple and Noise	Capacitive load(uF)	Range-DC (Volts)	
<b>WLD10</b>						
WLD10-24S03	3.3	3	50	2200	9-36	83
WLD10-24S05	5	2	50	2200	9-36	84
WLD10-24S12	12	0.83	100	1100	9-36	82
WLD10-24S24	24	0.42	100	220	9-36	82
WLD10-48S03	3.3	3	50	2200	18-75	83
WLD10-48S05	5	2	50	2200	18-75	85
WLD10-48S12	12	0.83	100	2000	18-75	83
WLD10-48S24	24	0.42	100	220	18-75	82
<b>WLD15</b>						
WLD15-24S05	5	3	85	6800	9-36	87
WLD15-24S12	12	1.25	100	1500	9-36	84
WLD15-24S15	15	1	100	1000	9-36	87
WLD15-24D12	± 12	± 0.63	100/100	800/800	9-36	88
<b>WLD20</b>						
WLD20-24S03	3.3	5	85	10000	9-36	86
WLD20-24S05	5	4	85	6800	9-36	88
WLD20-24S12	12	1.67	100	1800	9-36	87
WLD20-24S15	15	1.33	100	1000	9-36	86
WLD20-48S03	3.3	5	85	10000	18-75	86
WLD20-48S05	5	4	85	6800	18-75	85
WLD20-48S12	12	1.67	100	1500	18-75	85
WLD20-48S15	15	1.33	100	1000	18-75	86
WLD20-110S05	5	4	100	4700	40-160	88

Continue

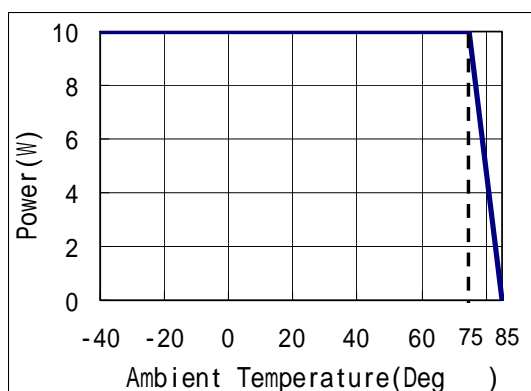
Model	Output				Input	Efficiency
	Voltage(V)	Current(A)	Ripple and Noise	Capacitive load(uF)	Range-DC (Volts)	
<b>WLD20</b>						
WLD20-110S12	12	1.67	100	1600	40-160	88
WLD20-110S24	24	0.83	100	470	40-160	88
<b>WLD30</b>						
WLD30-24S05	5	6	85	10000	9-36	90
WLD30-24S12	12	2.5	120	2200	9-36	91
<b>WLD50</b>						
WLD50-24S03	3.3	10	100	10000	9-36	89
WLD50-24S05	5	10	100	10000	9-36	91
WLD50-24S12	12	4.17	120	3000	9-36	91
WLD50-24S15	15	3.33	150	2200	9-36	91
WLD50-24S24	24	2.08	150	750	9-36	91
WLD50-48S05	5	10	100	10000	18-75	91

### Performance/Functional Specifications

Input		General	
<b>Input Voltage:</b>	See Ordering Guide	<b>Isolation Voltage:</b>	1500Vdc 1min/1mA (Input-Output)
<b>Output</b>		<b>Switchin Frequency:</b>	300kHz( typ.)
<b>Voltage Accuracy:</b>	±1% ±3% Vo1 Vo2	<b>MTBF :</b>	2×10 <sup>6</sup> h(Bellcore RT332, 25 )
<b>Line Regulation:</b>	±0.2%max. Vo1	<b>Temperature Coefficient:</b>	±0.02% per (Nom)
<b>Load Regulation:</b>	±0.5% max. Vo1	<b>Case Temperature:</b>	-40 ~ +105 (Industry)
<b>Ripple and Noise:</b>	See Ordering Guide	<b>Storage Temperature:</b>	-55 ~ +125
<b>Efficiency:</b>	See Ordering Guide	<b>Relative Humidity:</b>	10%~90%
<b>Transient Response Recovery Time(μs):</b>	See respective data sheet	<b>Short-circuit Protection:</b>	Hiccup mode, automatic recovery
<b>Transient Response Voltage Deviation (%):</b>	See respective data sheet	<b>Isolation Resistance:</b>	50 MΩmin(500Vdc , 90%RH)
<b>Start-up Delay Time:</b>	See respective data sheet	<b>Manual Soldering:</b>	425 max (5s Max)
<b>Rise Time:</b>	See respective data sheet	<b>Wave Soldering:</b>	255 max (10s Max)

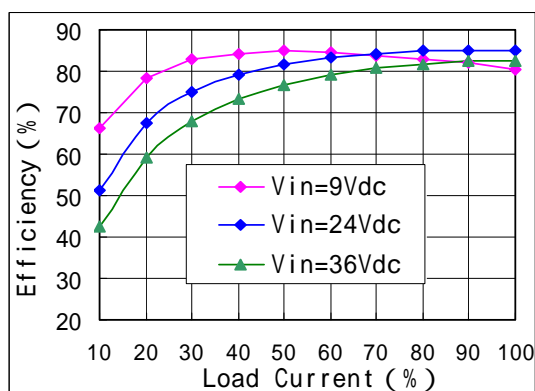
### Characteristic Curves

Derating



WLD10-24S03

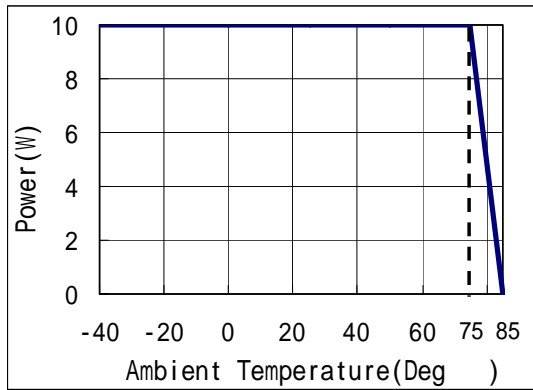
Efficiency



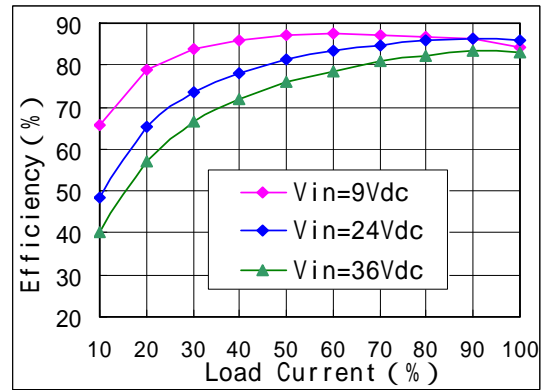
WLD10-24S03

**Derating**

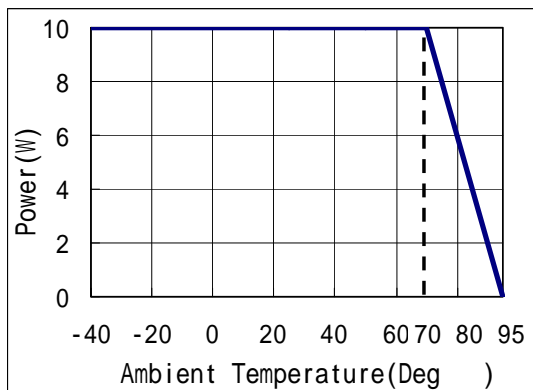
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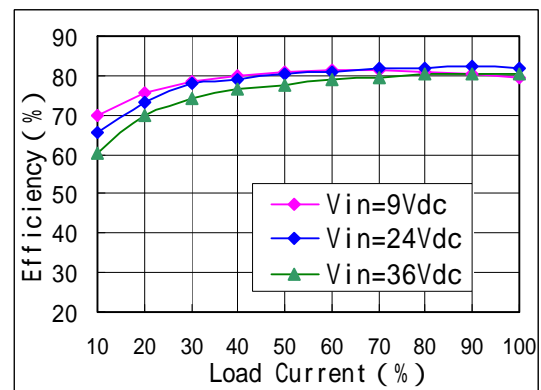
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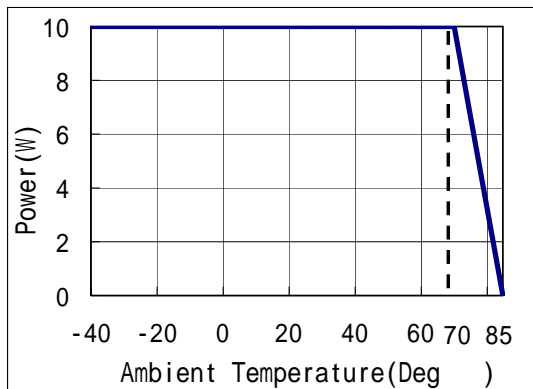
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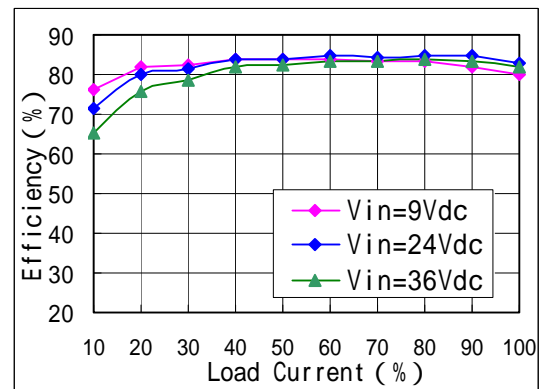
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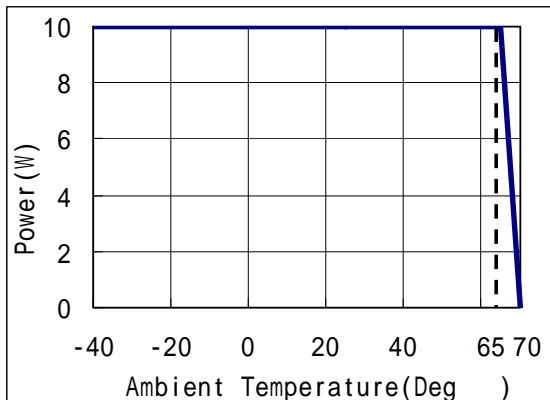
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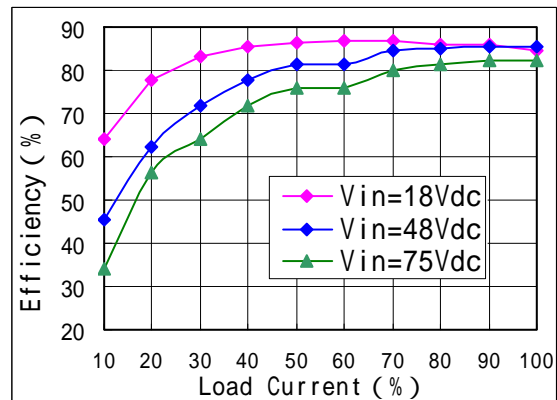
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**WLD10-24S24**



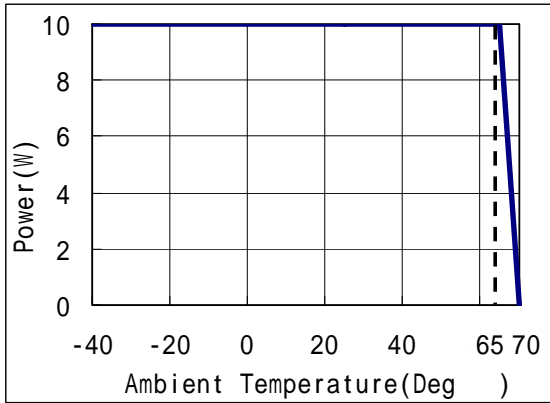
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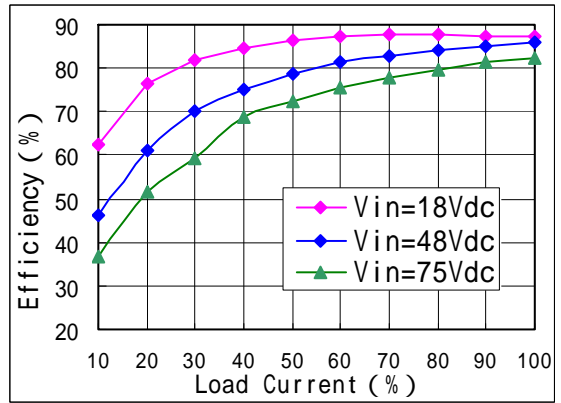
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**Derating**

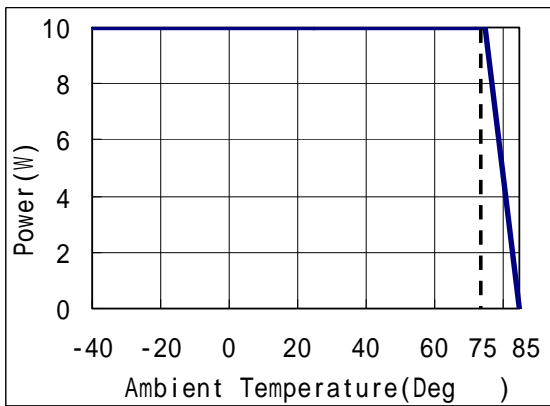
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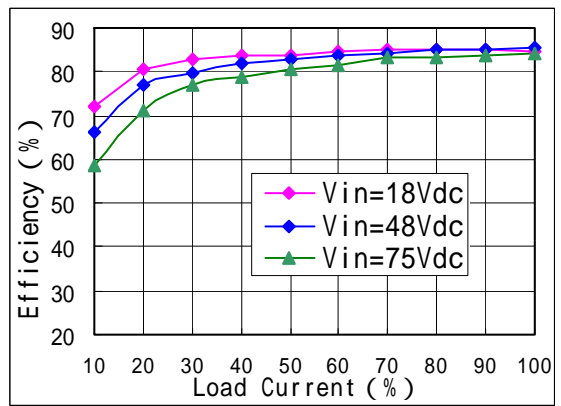
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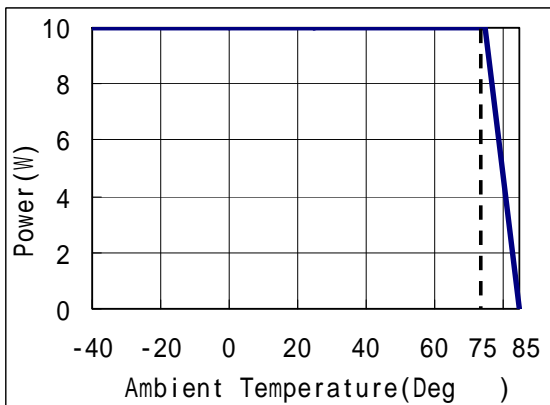
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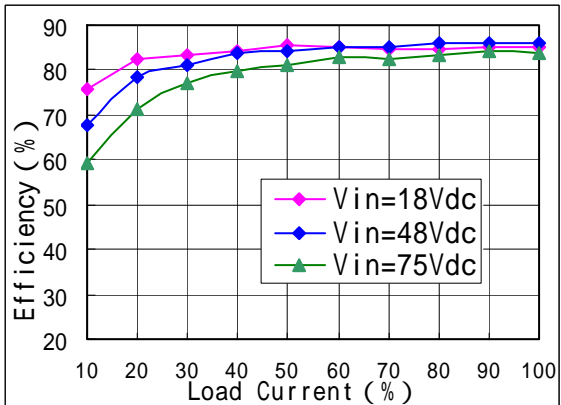
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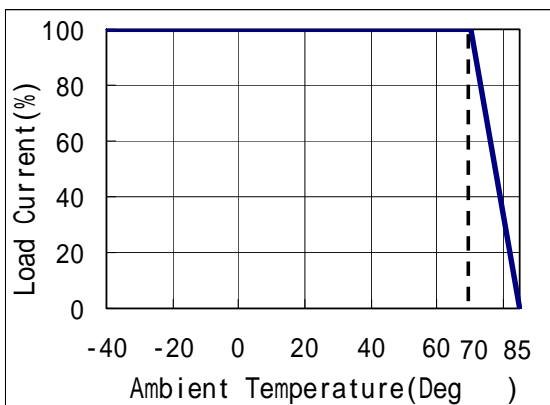
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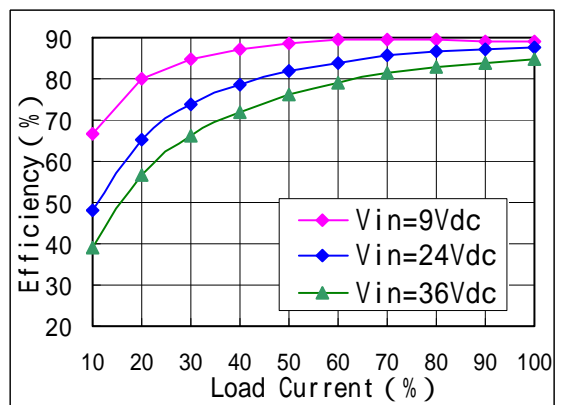
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**WLD10-48S24**



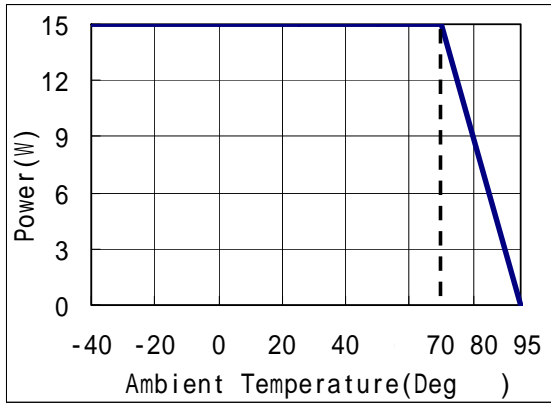
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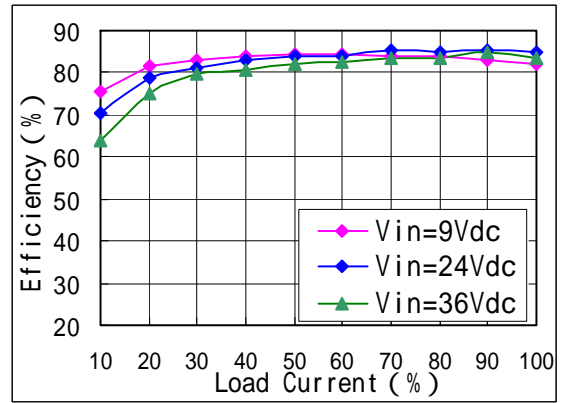
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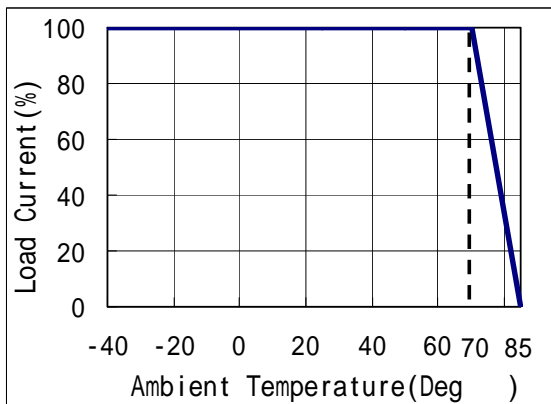
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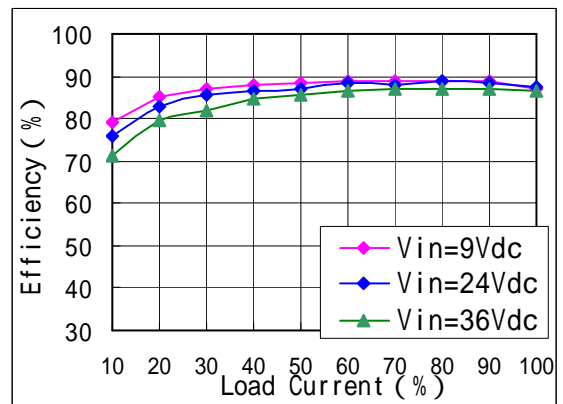
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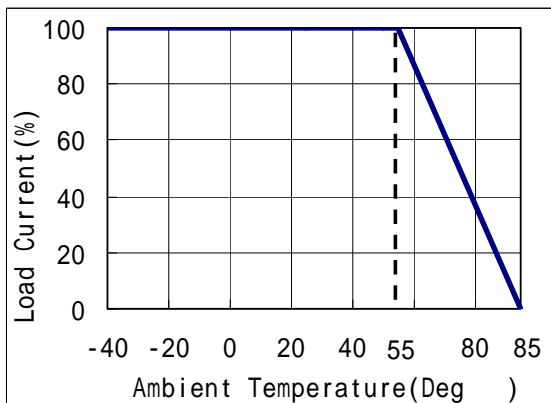
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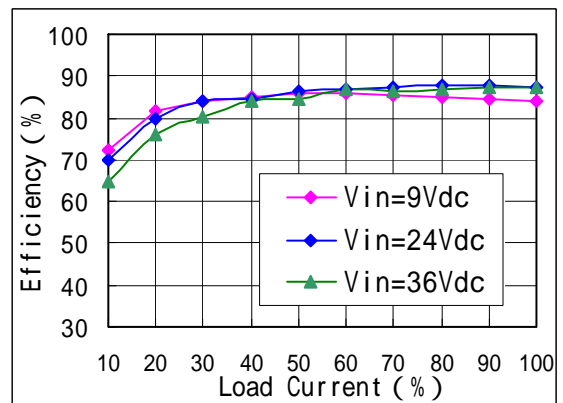
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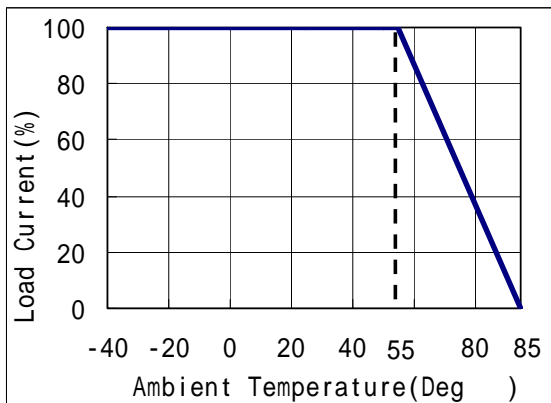
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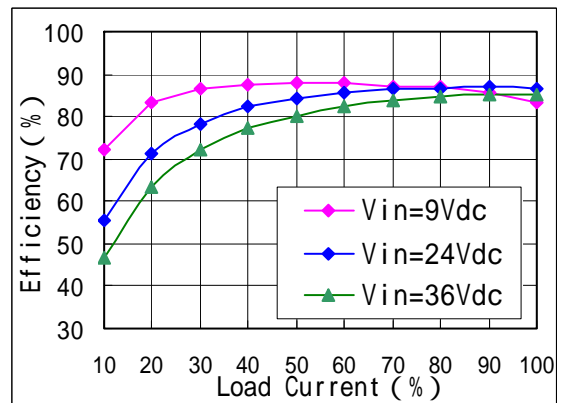
**WLD15-24D12**



**WLD15-24D12**



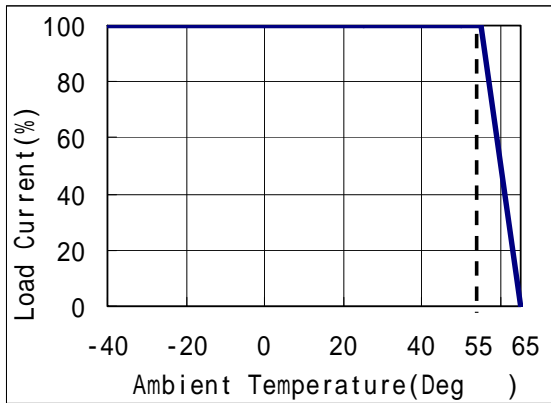
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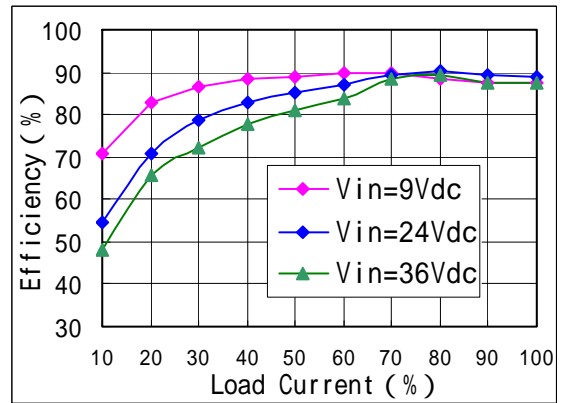
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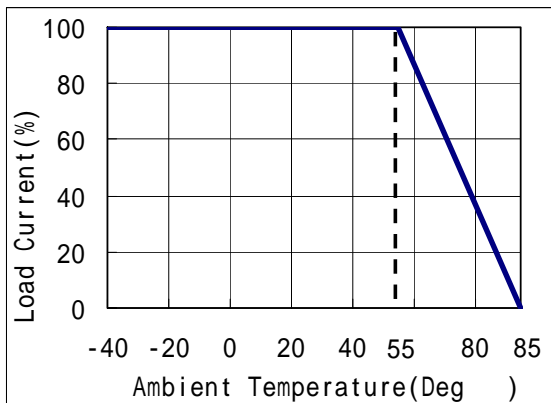
**Efficiency**



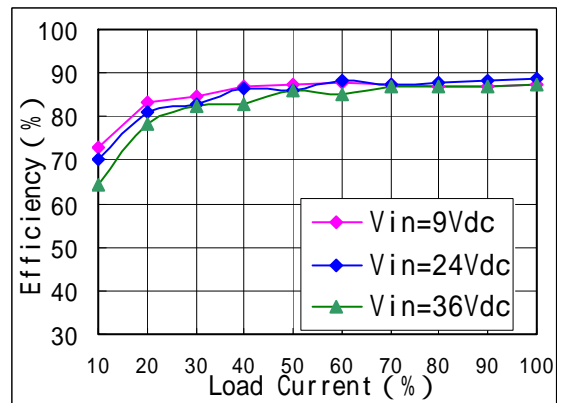
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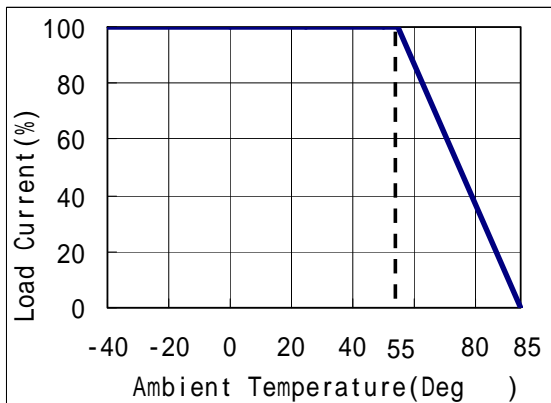
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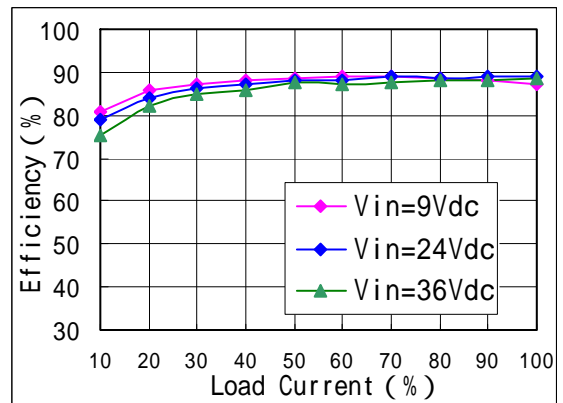
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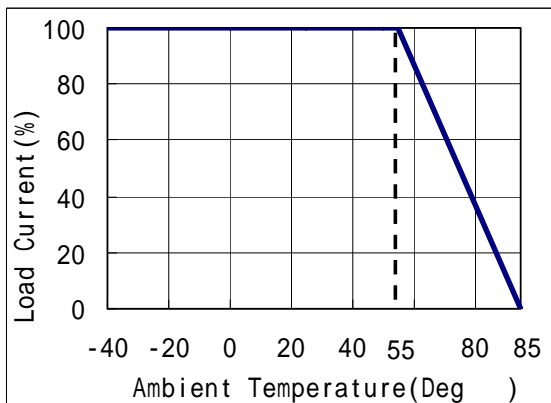
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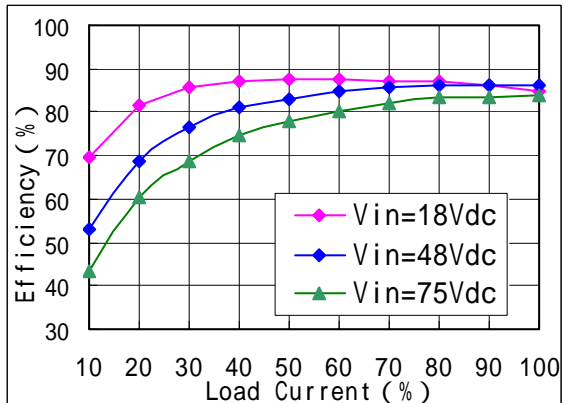
**WLD20-24S15**



**WLD20-24S15**



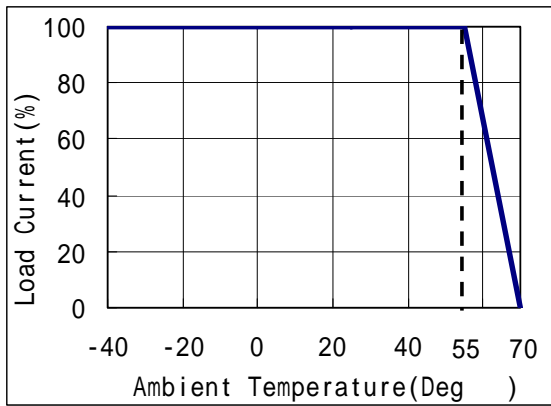
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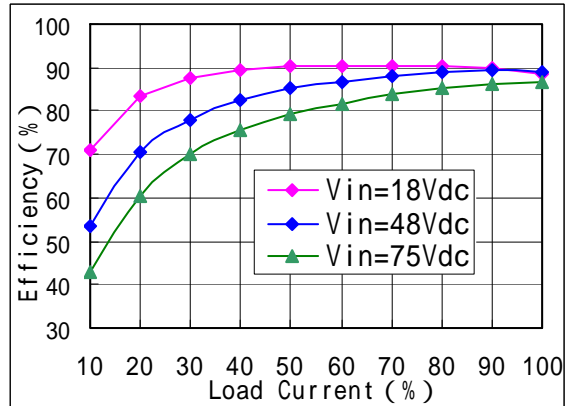
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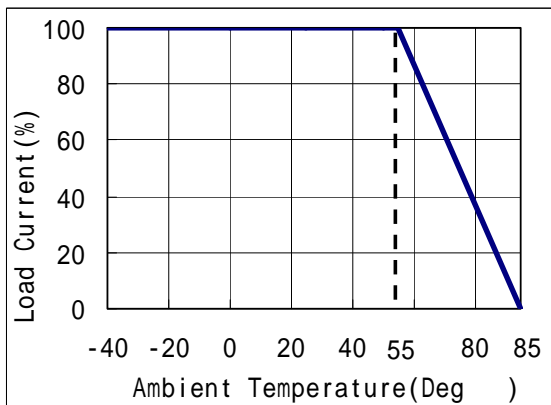
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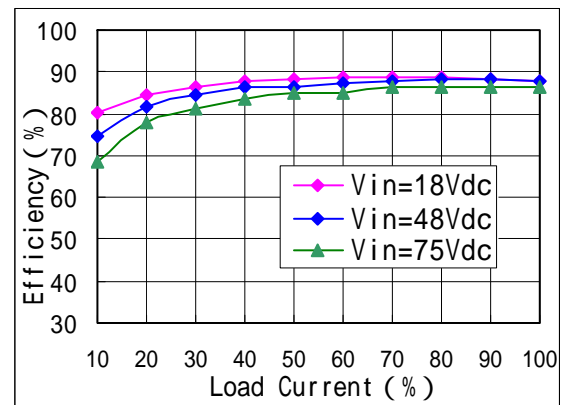
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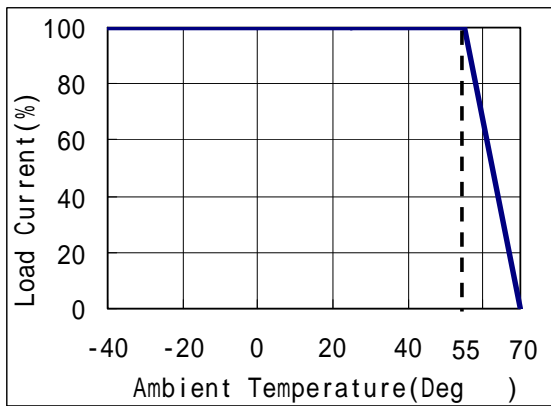
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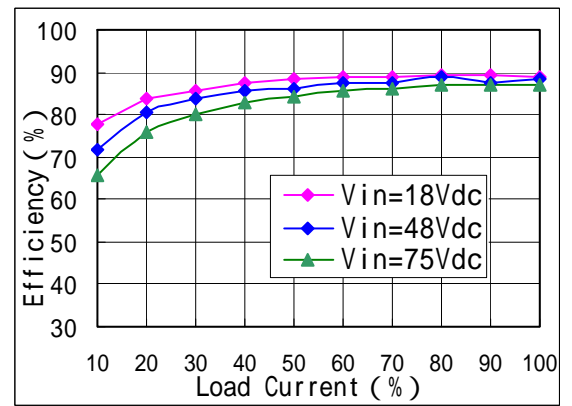
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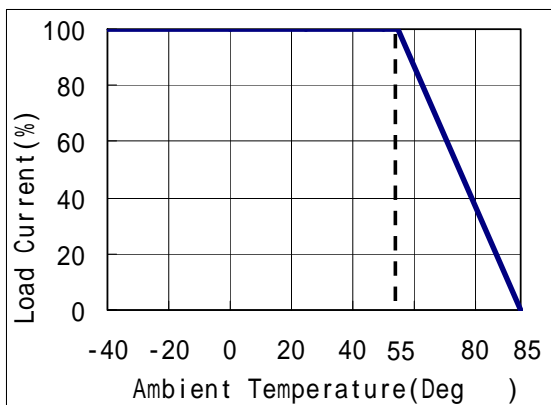
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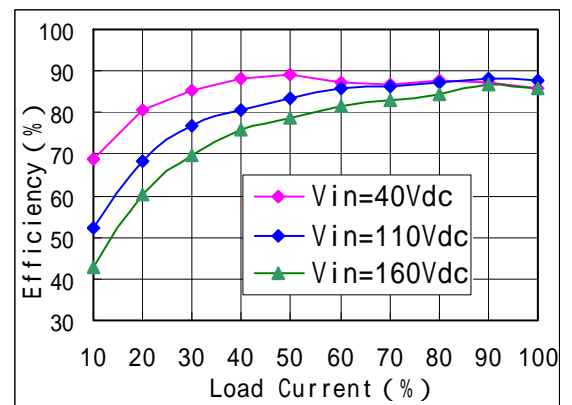
**WLD20-48S15**



**WLD20-48S15**



**WLD20-110S05**

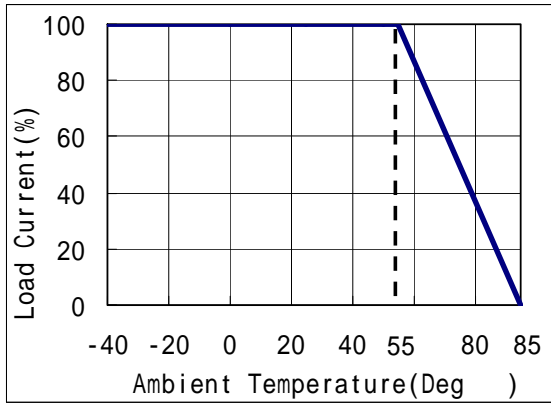


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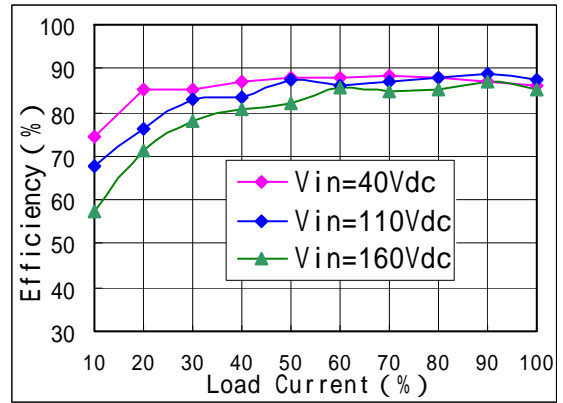


**Derating**

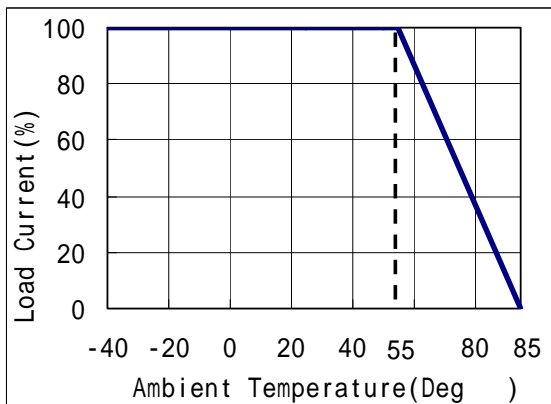
**Efficiency**



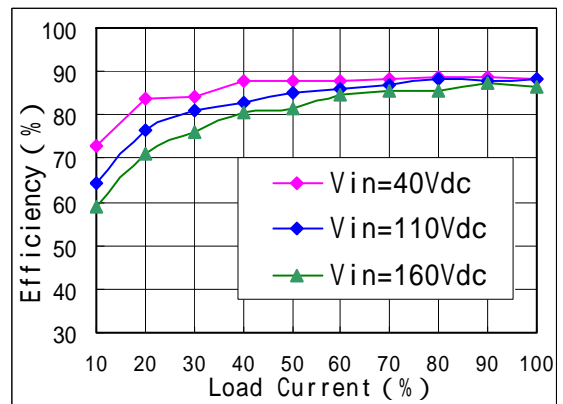
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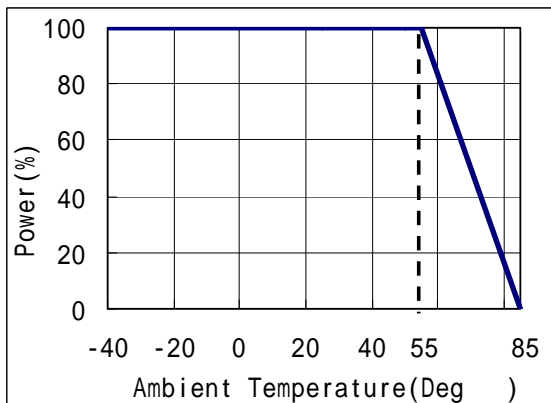
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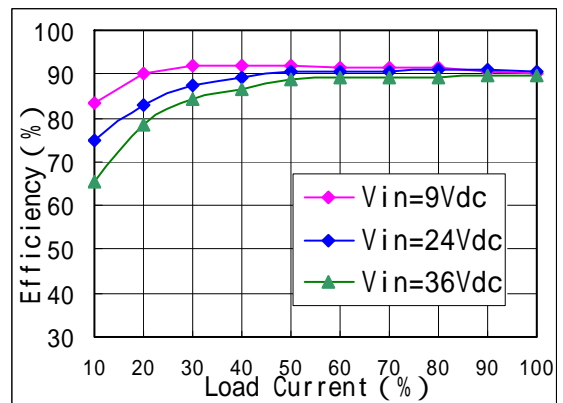
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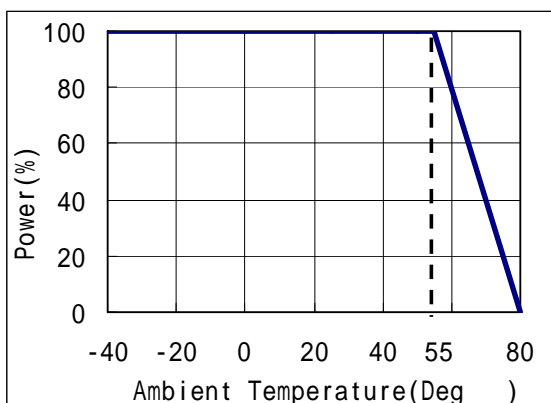
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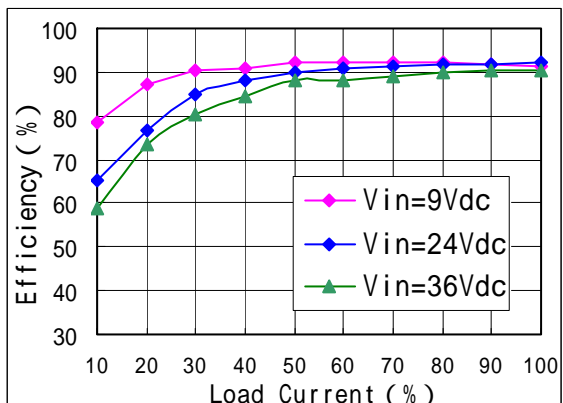
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**WLD30-24S05**



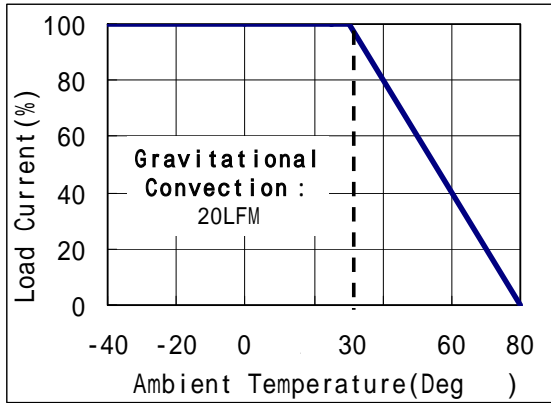
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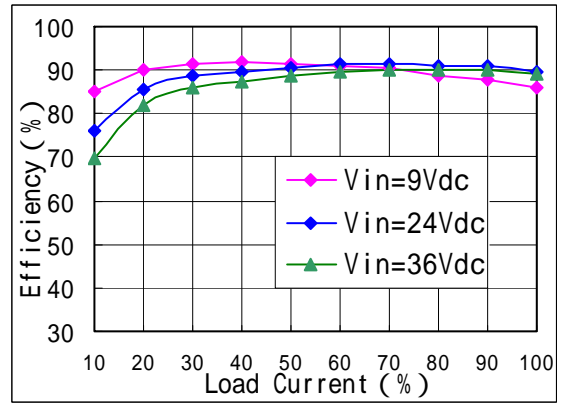
**WLD30-24S12**

**Derating**

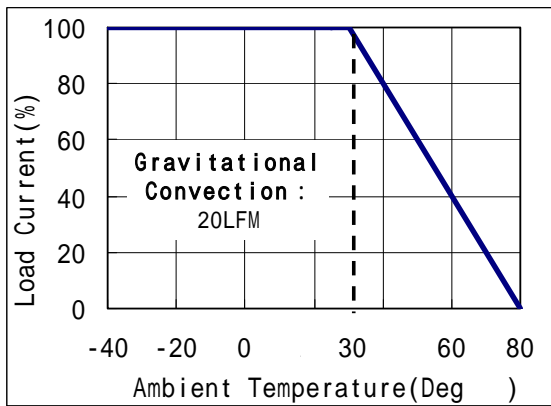
**Efficiency**



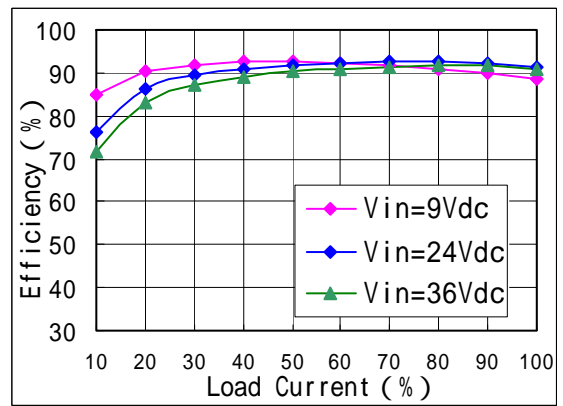
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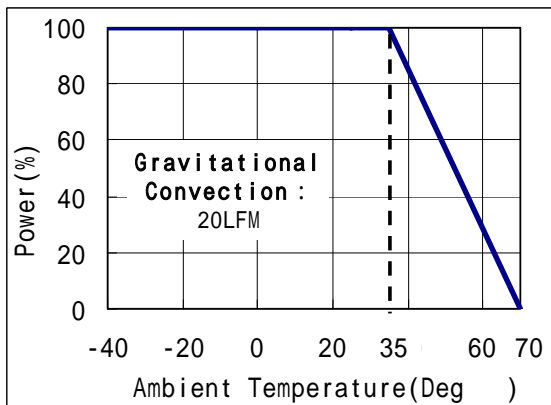
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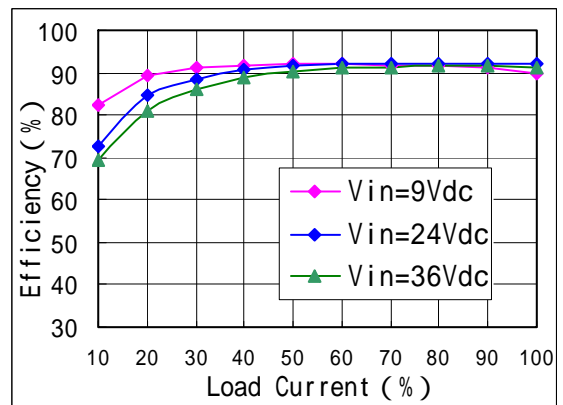
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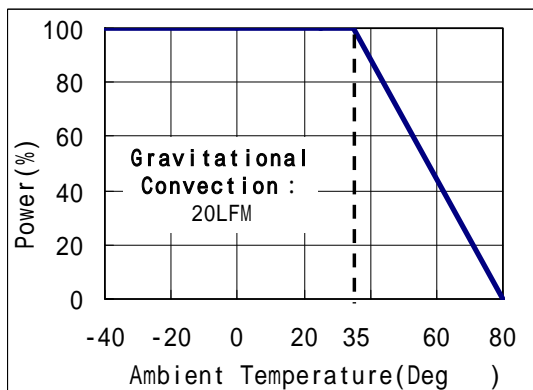
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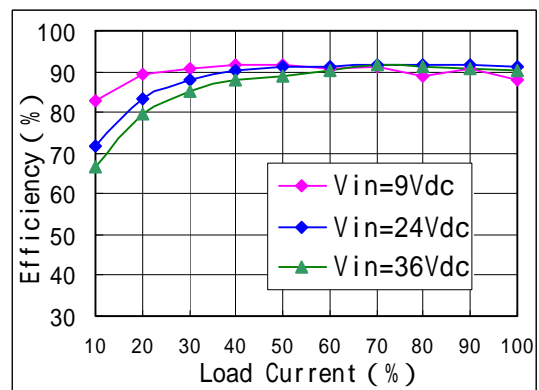
**WLD50-24S12**



**WLD50-24S12**

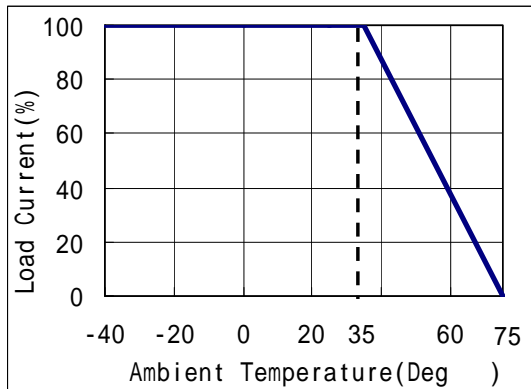


**WLD50-24S15**



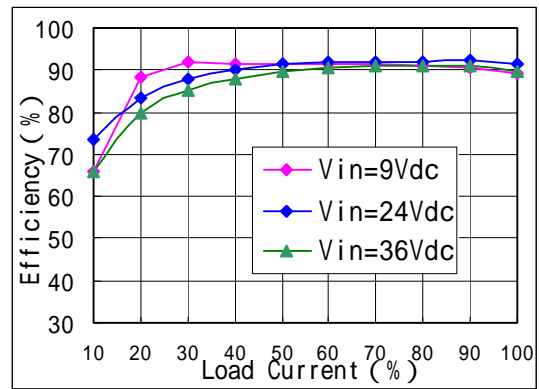
**WLD50-24S15**

**Derating**

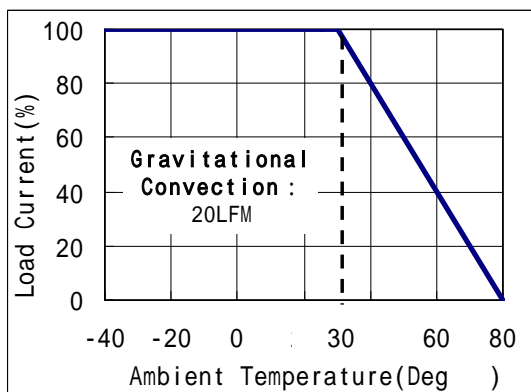


**WLD50-24S24**

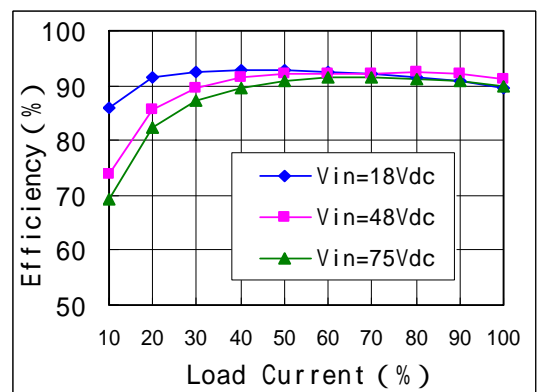
**Efficiency**



**WLD50-24S24**



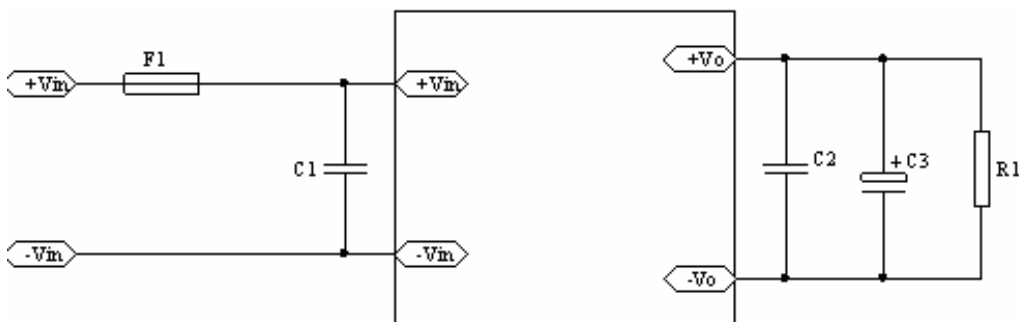
**WLD50-48S05**



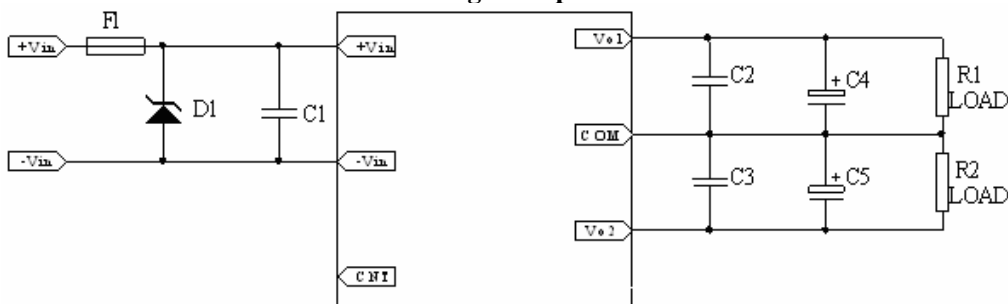
**WLD50-48S05**

**Design Considerations**

**Basic Connection**



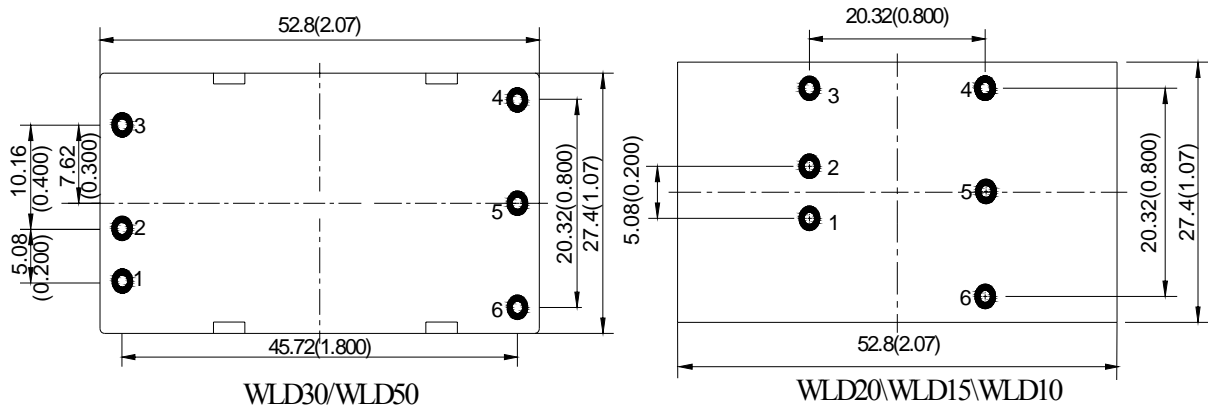
**Single Output**



**Dual Output**

**Notes :** Please refer to the respective data sheet for further information.

**Recommended Layout**



NO.	Recommendation & Notes
Pad Design	Pad holes 1 ~ 6:1.2mm , pad diameter including hole: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 converters, as one component for the end user, should be installed into the equipment, and all the safety considerations are achieved under certain condition. It is required to meet safety requirements in system design for the user. The converter output is considered SELV, and the expected input is

considered TNV2, the primary to secondary is basic insulation to EN60950. The maximum operating temperature for PCB is 130 .

To avoiding fire and be protected when short circuit occurred, it is recommended that a fast blow fuse with rating 2.5 to 3 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

### **Contact Information**

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resistance is from  $10^5 \Omega$  to  $10^{12} \Omega$ . Tray capacity:  
 $2 \times 16 = 32$  PCS/box ,Tray weight: 0.7 ~ 1.1kg ;Carton  
capacity: $15 \times 32 = 480$  PCS , Carton weight: 11 ~ 17kg.

### **Quality Statement**

The converters are manufactured in accordance with ISO 9001 system requirements, in compliant with YD/T1376-2005, and are monitored 100% by auto-testing system, 100% burn in.

The warranty for the converters is 5-year.