



## WRA/B\_CKS-1W & WRE/F\_CKS-1W Series

RoHS

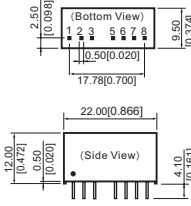
### WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER

#### FEATURES

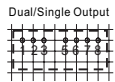
- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- I/O Isolation 1500VDC(WRA/B)  
I/O Isolation 3000VDC(WRE/F)
- SIP package
- Short circuit protection(automatic recovery)
- Remote On/Off control
- Internal SMD construction
- Regulated Output
- UL94-V0 Package

#### SPECIFICATIONS

Positive voltage accuracy.....	± 1% (typ)
Negative voltage accuracy.....	± 3% (typ)
Line regulation: Input voltage from low to high.....	± 0.2% (typ)
Load regulation: 10% to 100% load.....	± 0.5% (typ)
Temperature drift: Refer to recommended circuit.....	± 0.03%/°C (max)
Ripple & Noise: 20MHz Bandwidth.....	75mVp-p (max)
Switching frequency: Nominal, full load.....	300 KHz (PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours (min)
Cooling.....	Free Air Convection



RECOMMENDED FOOTPRINT  
Top view, grid: 2.54mm(0.1inch)  
Diameter: 1.00mm(0.039inch)

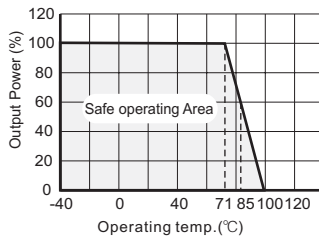


SIZE: 22.0x9.5x12.0 (mm)

Function	GND	Vin	CTRL	NC	+Vo	0V	-Vo	CS
WRA/E	1	2	3	5	6	7	8	-
WRB/F	1	2	3	5	6	7	-	8

NC: No Connection

#### TYPICAL TEMPERATURE CURVE



#### WRA/B\_CKS-1W Series

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRA0505CK-1W	5	4.5-9	±5	±100	72
WRA0512CK-1W			±12	±42	76
WRA0515CK-1W			±15	±33	75
WRB0505CK-1W	5	4.5-9	5	200	72
WRB0512CK-1W			12	83	76
WRB0515CK-1W			15	67	75
WRA1205CK-1W	12	9-18	±5	±100	76
WRA1212CK-1W			±12	±42	80
WRA1215CK-1W			±15	±33	80
WRB1205CK-1W	12	9-18	5	200	76
WRB1212CK-1W			12	83	80
WRB1215CK-1W			15	67	80
WRA2405CK-1W	24	18-36	±5	±100	78
WRA2412CK-1W			±12	±42	81
WRA2415CK-1W			±15	±33	81
WRB2405CK-1W	24	18-36	5	200	76
WRB2412CK-1W			12	83	81
WRB2415CK-1W			15	67	81
WRA4805CK-1W	48	36-72	±5	±100	76
WRA4812CK-1W			±12	±42	80
WRA4815CK-1W			±15	±33	80
WRB4805CK-1W	48	36-72	5	200	76
WRB4812CK-1W			12	83	80
WRB4815CK-1W			15	67	80

#### WRE/F\_CKS-1W Series

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRE0505CK-1W	5	4.5-9	±5	±100	72
WRE0512CK-1W			±12	±42	76
WRE0515CK-1W			±15	±33	75
WRF0505CK-1W	5	4.5-9	5	200	72
WRF0512CK-1W			12	83	76
WRF0515CK-1W			15	67	75
WRE1205CK-1W	12	9-18	±5	±100	76
WRE1212CK-1W			±12	±42	80
WRE1215CK-1W			±15	±33	80
WRF1205CK-1W	12	9-18	5	200	76
WRF1212CK-1W			12	83	80
WRF1215CK-1W			15	67	80
WRE2405CK-1W	24	18-36	±5	±100	78
WRE2412CK-1W			±12	±42	81
WRE2415CK-1W			±15	±33	81
WRF2405CK-1W	24	18-36	5	200	76
WRF2412CK-1W			12	83	81
WRF2415CK-1W			15	67	81
WRE4805CK-1W	48	36-72	±5	±100	76
WRE4812CK-1W			±12	±42	80
WRE4815CK-1W			±15	±33	80
WRF4805CK-1W	48	36-72	5	200	76
WRF4812CK-1W			12	83	80
WRF4815CK-1W			15	67	80

## WRA\_CS-3W & WRB\_CS-3W Series

RoHS

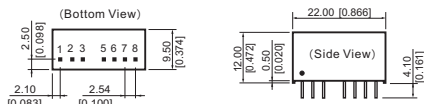
### WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER

#### FEATURES

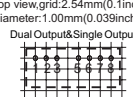
- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- I/O Isolation 1500VDC
- Miniature SIP Package
- Short Circuit Protection(automatic recovery)
- Internal SMD construction
- High power density
- Regulated Output
- UL94-V0 Package

#### SPECIFICATIONS

Positive voltage accuracy.....	± 1% (typ)	Ripple & Noise: 20MHz Bandwidth...	100mVp-p (max)
Negative voltage accuracy.....	± 3% (typ)	Storage temperature.....	-55°C ~ +125°C
Line regulation: Input voltage from low to High.....	± 0.2% (typ)	Isolation resistance.....	1000MΩ (min)
Load regulation: 10% to 100% Load.....	± 0.5% (typ)	MTBF.....	1,000,000 hours (min)
Temperature drift: Refer to recommended circuit.....	± 0.03%/°C (max)	Cooling.....	Free Air Convection
Switching frequency: Nominal, full load.....	300 KHz (PFM)		



RECOMMENDED FOOTPRINT  
Top view, grid: 2.54mm(0.1inch)  
Diameter: 1.00mm(0.039inch)



SIZE: 22.0x9.5x12.0 (mm)

Function	GND	Vin	CTRL	NC	+Vo	0V	-Vo	CS
WRA	1	2	3	5	6	7	8	-
WRB	1	2	3	5	6	7	-	8

NC: No Connection

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRA1205CS-3W	12	9-18	±5	±300	74
WRA1212CS-3W			±12	±125	78
WRA1215CS-3W			±15	±100	80
WRB1205CS-3W	12	9-18	5	600	74
WRB1212CS-3W			12	250	78
WRB1215CS-3W			15	200	80
WRA2405CS-3W	24	18-36	±5	±300	76
WRA2412CS-3W			±12	±125	80
WRA2415CS-3W			±15	±100	81
WRB2405CS-3W	24	18-36	5	600	76
WRB2412CS-3W			12	250	80
WRB2415CS-3W			15	200	81

AC-DC SERIES

DC-DC FIXED INPUT ISOLATED/UNREGULATED

DC-DC FIXED INPUT ISOLATED/REGULATED

DC-DC WIDE INPUT ISOLATED/REGULATED

DC-DC ULTRA-WIDE INPUT ISOLATED/REGULATED

DC-DC WIDE INPUT NON-ISOLATED/REGULATED

LED DRIVER

IGBT DRIVER

ISOLATION AMPLIFIER MODULE



# Wide Input Isolated, Regulated Series

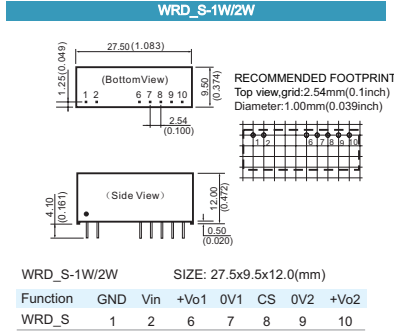
## WRD\_S-1W/2W & WRD\_(M)P-3W Series

### WIDE INPUT, ISOLATED & REGULATED ISOLATED TWIN OUTPUT DC-DC CONVERTER

RoHS

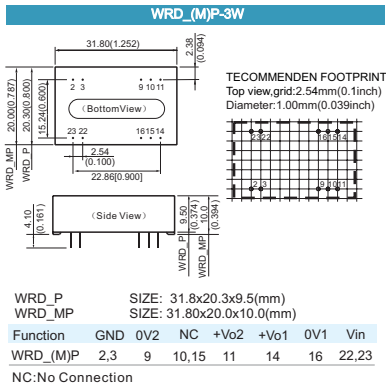
#### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1W/2W: SIP Package  
3W: DIP Package
- I/O Isolation 1500VDC  
O/O Isolation 1000VDC
- Short Circuit Protection  
(automatic recovery)
- Internal SMD Construction



#### SPECIFICATIONS

- Positive voltage accuracy..... ±1% (typ)
- Negative voltage accuracy..... ±3% (typ)
- Line regulation: Input voltage from low to high... ±0.2% (typ)
- Load regulation: 10% to 100% load..... ±0.5% (typ)
- Temperature drift: Refer to recommended circuit..... ±0.03%/°C (max)
- Ripple & Noise: 20MHz Bandwidth..... 100mVp-p (max)
- Switching frequency: Nominal, full load..... 300KHz (PFM)
- Storage temperature..... -55°C ~ +125°C
- Isolation resistance..... 1000MΩ (min)
- MTBF..... 1,000,000 hours (min)
- Cooling..... Free Air Convection



#### WRD\_S-1W/2W Series

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRD050505S-1W	5	4.5-9	5/5	100/100	70
WRD051212S-1W	5	4.5-9	12/12	42/42	73
WRD051515S-1W	5	4.5-9	15/15	33/33	72
WRD050505S-2W	5	4.5-9	5/5	200/200	67
WRD051212S-2W	5	4.5-9	12/12	83/83	72
WRD051515S-2W	5	4.5-9	15/15	67/67	73
WRD120505S-1W	12	9-18	5/5	100/100	73
WRD121212S-1W	12	9-18	12/12	42/42	78
WRD121515S-1W	12	9-18	15/15	33/33	78
WRD120505S-2W	12	9-18	5/5	200/200	75
WRD121212S-2W	12	9-18	12/12	83/83	80
WRD121515S-2W	12	9-18	15/15	67/67	79
WRD240505S-1W	24	18-36	5/5	100/100	76
WRD241212S-1W	24	18-36	12/12	42/42	78
WRD241515S-1W	24	18-36	15/15	33/33	77
WRD240505S-2W	24	18-36	5/5	200/200	76
WRD241212S-2W	24	18-36	12/12	83/83	80
WRD241515S-2W	24	18-36	15/15	67/67	79
WRD480505S-1W	48	36-72	5/5	100/100	73
* WRD481212S-1W	48	36-72	12/12	42/42	77
* WRD481515S-1W	48	36-72	15/15	33/33	77
WRD480505S-2W	48	36-72	5/5	200/200	75
WRD481212S-2W	48	36-72	12/12	83/83	79
* WRD481515S-2W	48	36-72	15/15	67/67	78

Note: "\*" Designing.

#### WRD\_(M)P-3W Series

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRD050505(M)P-3W	5	4.5-9	5/5	300/300	68
WRD051212(M)P-3W	5	4.5-9	12/12	125/125	72
WRD051515(M)P-3W	5	4.5-9	15/15	100/100	73
WRD120505(M)P-3W	12	9-18	5/5	300/300	74
WRD121212(M)P-3W	12	9-18	12/12	125/125	80
WRD121515(M)P-3W	12	9-18	15/15	100/100	79
WRD240505(M)P-3W	24	18-36	5/5	300/300	76
WRD241212(M)P-3W	24	18-36	12/12	125/125	82
WRD241515(M)P-3W	24	18-36	15/15	100/100	80
WRD480505(M)P-3W	48	36-72	5/5	300/300	76
WRD481212(M)P-3W	48	36-72	12/12	125/125	80
WRD481515(M)P-3W	48	36-72	15/15	100/100	79

Note: P: Plastic (UL94-V0) MP: Metal

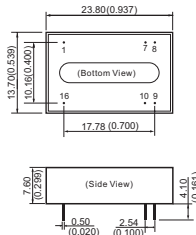
## WRA\_N-2W & WRB\_N-2W Series

### WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT, DC-DC CONVERTER

RoHS

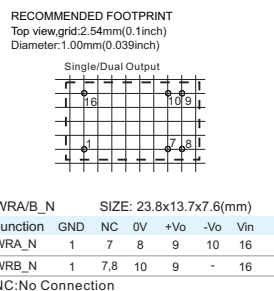
#### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Isolation
- Miniature DIP Package
- Internal SMD Construction
- UL94-V0 Package
- Short Circuit Protection (automatic recovery)
- Industry Standard Pinout

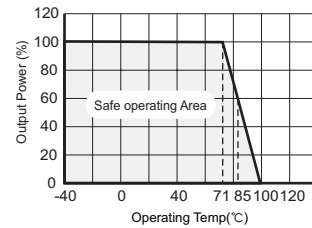


#### SPECIFICATIONS

- Positive voltage accuracy..... ±1% (typ)
- Negative voltage accuracy..... ±3% (typ)
- Line regulation: Input voltage from low to high... ±0.2% (typ)
- Load regulation: From 10% to 100% load..... ±0.5% (typ)
- Temperature drift: Refer to recommended circuit..... ±0.03%/°C (max)
- Ripple & Noise: 20MHz Bandwidth..... 100mVp-p (max)
- Switching frequency: Nominal, full load..... 300KHz (PFM)
- Storage temperature..... -55°C ~ +125°C
- Isolation resistance..... 1000MΩ (min)
- MTBF..... 1,000,000 hours (min)
- Cooling..... Free air convection



#### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRA1205N-2W	12	9-18	±5	±200	75
WRA1212N-2W	12	9-18	±12	±83	78
WRA1215N-2W	12	9-18	±15	±67	78
WRB1203N-1W6	12	9-18	3.3	455	70
WRB1205N-2W	12	9-18	5	400	74
WRB1212N-2W	12	9-18	12	167	78
WRB1215N-2W	12	9-18	15	133	78
WRA2405N-2W	24	18-36	±5	±200	76
WRA2412N-2W	24	18-36	±12	±83	78
WRA2415N-2W	24	18-36	±15	±67	79
WRB2403N-1W6	24	18-36	3.3	455	72
WRB2405N-2W	24	18-36	5	400	76
WRB2412N-2W	24	18-36	12	167	80
WRB2415N-2W	24	18-36	15	133	79



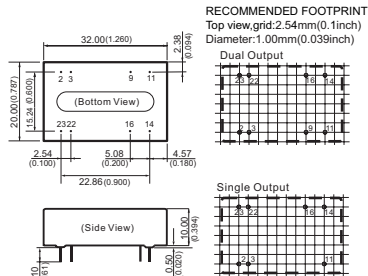
## WRA\_ZP-3W & WRB\_ZP-3W Series

### WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER

RoHS

#### FEATURES

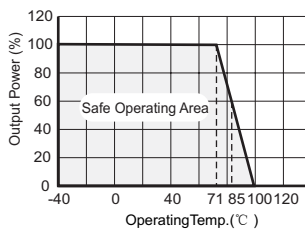
- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Isolation
- Internal SMD construction
- Short circuit protection (automatic recovery)
- Metal Shielding Package
- No heat sink required



WRA/B_ZP	SIZE: 32.0x20.0x10.5(mm)
Function	GND 0V -Vo NC +Vo Vin
WRA_ZP	2,3 9,16 11 - 14 22,23
WRB_ZP	2,3 16 - 11 14 22,23

NC: No Connection.

#### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRA0505ZP-3W	5	4.5-9	±5	±300	68
WRA0512ZP-3W			±12	±125	71
WRA0515ZP-3W	5	4.5-9	±15	±100	71
WRB0505ZP-3W			5	600	68
WRB0512ZP-3W	5	4.5-9	12	250	71
WRB0515ZP-3W			15	200	71
WRA1205ZP-3W	12	9-18	±5	±300	76
WRA1212ZP-3W			±12	±125	79
WRA1215ZP-3W	12	9-18	±15	±100	80
WRB1203ZP-3W			3.3	909	71
WRB1205ZP-3W	12	9-18	5	600	76
WRB1212ZP-3W			12	250	79
WRB1215ZP-3W	12	9-18	15	200	80
WRA2405ZP-3W			±5	±300	78
WRA2412ZP-3W	24	18-36	±12	±125	80
WRA2415ZP-3W			±15	±100	81
WRB2403ZP-3W	24	18-36	3.3	909	76
WRB2405ZP-3W			5	600	78
WRB2412ZP-3W	24	18-36	12	250	81
WRB2415ZP-3W			15	200	82
WRA4805ZP-3W	48	36-72	±5	±300	78
WRA4812ZP-3W			±12	±125	80
WRA4815ZP-3W	48	36-72	±15	±100	81
WRB4803ZP-3W			3.3	909	76
WRB4805ZP-3W	48	36-72	5	600	78
WRB4812ZP-3W			12	250	80
WRB4815ZP-3W	48	36-72	15	200	81

#### SPECIFICATIONS

Positive voltage accuracy.....	± 1%(typ)
Negative voltage accuracy.....	± 3%(typ)
Line regulation: Input voltage from low to high.....	± 0.2%(typ)
Load regulation: 10% to 100% load.....	± 0.5%(typ)
Temperature drift: Refer to recommended circuit... ..	± 0.03%/°C(max)
Ripple & Noise: 20MHz Bandwidth.....	100mVp-p(max)
Switching frequency: Nominal, full load.....	300KHz(PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours(min)
Cooling.....	Free air convection

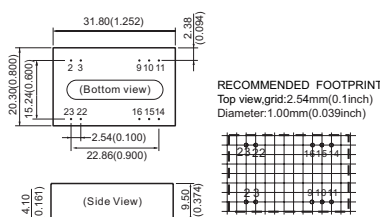
## WRE\_P-3W & WRF\_P-3W Series

### WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER

RoHS

#### FEATURES

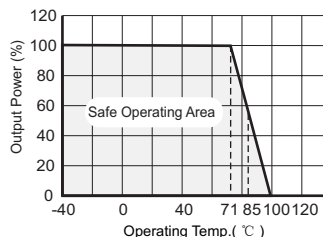
- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 3000VDC Isolation
- Short circuit protection (automatic recovery)
- Internal SMD construction
- UL94-V0 Package
- Industry standard pinout



WRE/F_P-3W	SIZE: 31.80x20.30x9.5(mm)
Function	GND 0V NC -Vo +Vo Vin
WRE	2,3 9,16 10,15 11 14 22,23
WRF	2,3 16 9,10,11,15 - 14 22,23

NC: No Connection.

#### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRE1205P-3W	12	9-18	±5	±300	74
WRE1212P-3W			±12	±125	78
WRE1215P-3W	12	9-18	±15	±100	79
WRF1205P-3W			5	600	74
WRF1212P-3W	12	9-18	12	250	78
WRF1215P-3W			15	200	79
WRE2405P-3W	24	18-36	±5	±300	78
WRE2412P-3W			±12	±125	82
WRE2415P-3W	24	18-36	±15	±100	81
WRF2405P-3W			5	600	78
WRF2412P-3W	24	18-36	12	250	82
WRF2415P-3W			15	200	81

#### SPECIFICATIONS

Positive voltage accuracy.....	± 1%(typ)
Negative voltage accuracy.....	± 3%(typ)
Line regulation: Input voltage from low to high.....	± 0.2%(typ)
Load regulation: From 10% to 100% load.....	± 0.5%(typ)
Temperature drift: Refer to recommended circuit... ..	± 0.03%/°C(max)
Ripple & Noise : 20MHz Bandwidth.....	100mVp-p(max)
Switching frequency: Nominal, full load.....	300KHz(PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours(min)
Cooling.....	Free air convection

AC-DC SERIES

DC-DC FIXED INPUT ISOLATED/UNREGULATED

DC-DC FIXED INPUT ISOLATED/REGULATED

DC-DC WIDE INPUT ISOLATED/REGULATED

DC-DC ULTRA-WIDE INPUT ISOLATED/REGULATED

DC-DC WIDE INPUT NON-ISOLATED/REGULATED

LED DRIVER

IGBT DRIVER

ISOLATION AMPLIFIER MODULE



# Wide Input Isolated, Regulated Series

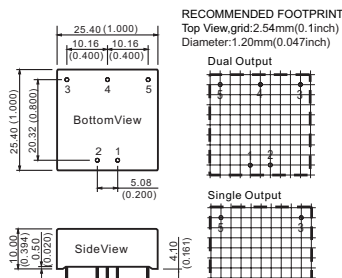
## WRA\_YMD-3W & WRB\_YMD-3W Series

RoHS

### WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER

#### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Isolation
- Internal SMD Required
- Short Circuit Protection (automatic recovery)
- Metal Shielding Package
- No Heat Sink Required



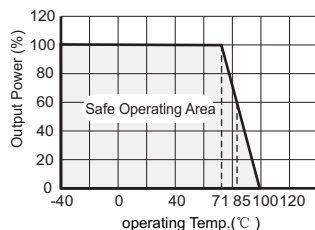
#### SPECIFICATIONS

Positive voltage accuracy.....	± 1% (typ)
Negative voltage accuracy.....	± 3% (typ)
Line regulation: Input voltage from low to high.....	± 0.2% (typ)
Load regulation: From 10% to 100% load.....	± 0.5% (typ)
Temperature drift: Refer to recommended circuit.....	± 0.03%/°C (max)
Ripple & Noise: 20MHz Bandwidth.....	150mVp-p (max)
Switching frequency: Nominal, full load.....	300KHz (PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours (min)
Cooling.....	Free air convection

WRA/B_YMD	Function	GND	Vin	+Vo	0V	-Vo
WRA_YMD		1	2	3	4	5
WRB_YMD		1	2	3	5	-

NC: No Connection

#### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRA0505YMD-3W	5	4.5-9	±5	±300	68
WRA0512YMD-3W			±12	±125	72
WRA0515YMD-3W			±15	±100	71
WRB0505YMD-3W	5	4.5-9	5	600	68
WRB0512YMD-3W			12	250	72
WRB0515YMD-3W			15	200	71
* WRA1205YMD-3W	12	9-18	±5	±300	76
* WRA1212YMD-3W			±12	±125	80
* WRA1215YMD-3W			±15	±100	80
WRB1205YMD-3W	12	9-18	5	600	77
* WRB1212YMD-3W			12	250	80
* WRB1215YMD-3W			15	200	81
WRA2405YMD-3W	24	18-36	±5	±300	77
WRA2412YMD-3W			±12	±125	80
WRA2415YMD-3W			±15	±100	80
WRB2403YMD-3W	24	18-36	3.3	909	76
WRB2405YMD-3W			5	600	77
WRB2412YMD-3W			12	250	81
WRB2415YMD-3W	15	200	81		
* WRA4805YMD-3W	48	36-72	±5	±300	77
* WRA4812YMD-3W			±12	±125	80
* WRA4815YMD-3W			±15	±100	81
WRB4803YMD-3W	48	36-72	3.3	909	76
WRB4805YMD-3W			5	600	77
WRB4812YMD-3W			12	250	81
WRB4815YMD-3W	15	200	81		

Note: \*\*\* Designing.

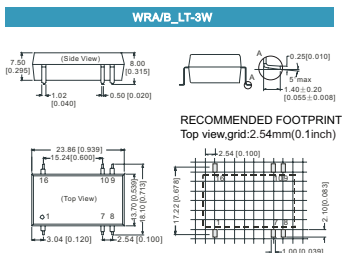
## WRA\_LT-3W & WRB\_LT-3W Series

RoHS

### WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER

#### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Isolation
- Short Circuit Protection (automatic recovery)
- Internal SMD Construction
- UL94-V0 Package



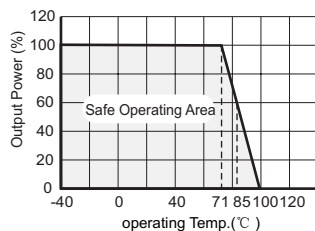
#### SPECIFICATIONS

Positive voltage accuracy.....	±1% (typ)
Negative voltage accuracy.....	±3% (typ)
Line regulation: Input voltage from low to high....	±0.2% (typ)
Load regulation: From 10% to 100% load.....	±0.5% (typ)
Temperature Drift: Refer to recommended circuit....	±0.03%/°C (max)
Ripple & Noise: 20MHz Bandwidth.....	100mVp-p (max)
Switching frequency: Nominal, full load.....	300KHz (PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours (min)
Cooling.....	Free air convection

WRA/B_LT	Function	GND	NC	0V	+Vo	-Vo	Vin
Dual		1	7	8	9	10	16
Single		1	7,8	10	9	-	16

NC: No Connection

#### TYPICAL TEMPERATURE CURVE



#### WRA/B\_LT-3W Series

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
* WRA0505LT-3W	5	4.5-9	±5	±300	72
* WRA0512LT-3W			±12	±125	74
WRA0515LT-3W			±15	±100	75
WRB0505LT-3W	5	4.5-9	5	600	72
WRB0512LT-3W			12	250	74
WRB0515LT-3W			15	200	75
* WRA1205LT-3W	12	9-18	±5	±300	76
WRA1212LT-3W			±12	±125	79
WRA1215LT-3W			±15	±100	79
* WRB1205LT-3W	12	9-18	5	600	74
WRB1212LT-3W			12	250	79
* WRB1215LT-3W			15	200	79
WRA2405LT-3W	24	18-36	±5	±300	76
WRA2412LT-3W			±12	±125	79
WRA2415LT-3W			±15	±100	79
WRB2405LT-3W	24	18-36	5	600	76
WRB2412LT-3W			12	250	79
* WRB2415LT-3W			15	200	79
WRA4805LT-3W	48	36-72	±5	±300	76
* WRA4812LT-3W			±12	±125	79
* WRA4815LT-3W			±15	±100	79
WRB4805LT-3W	48	36-72	5	600	76
WRB4812LT-3W			12	250	79
* WRB4815LT-3W			15	200	79

Note: \* Designing.



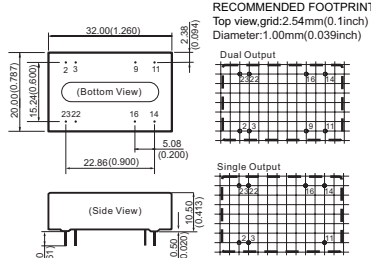
## WRA\_ZP-6W & WRB\_ZP-6W Series

WIDE INPUT, ISOLATED & REGULATED  
DUAL/SINGLE OUTPUT DC-DC CONVERTER

RoHS

### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Input/Output Isolation
- Efficiency up to 86%
- Internal SMD Construction
- Metal Shielding Package
- Short Circuit Protection(Automatic recovery)

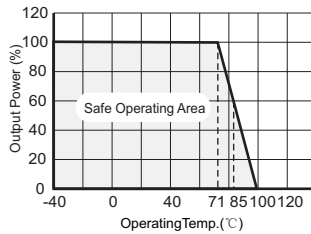


WRA/B\_ZP SIZE: 32.0x20.0x10.5

Function	GND	0V	-Vo	NC	+Vo	Vin
WRA	2,3	9,16	11	-	14	22,23
WRB	2,3	16	-	11	14	22,23

NC: No Connection.

### TYPICAL TEMPERATURE CURVE



### SPECIFICATIONS

Positive Voltage Accuracy.....	± 1%(typ)
Negative Voltage Accuracy.....	± 3%(typ)
Line Regulation: Input voltage from low to high.....	± 0.2%(typ)
Load Regulation: From 10% to 100% load.....	± 0.5%(typ)
Temperature Drift: Refer to recommended circuit.....	± 0.03%/°C(max)
Ripple & Noise: 20MHz Bandwidth.....	100mVp-p(max)
Switching frequency: Nominal, full load.....	300KHz(PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours(min)
Cooling.....	Free air convection

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRA0505ZP-6W	5	4.5-9	± 5	± 600	76
WRA0512ZP-6W			± 12	± 250	80
WRA0515ZP-6W			± 15	± 200	82
WRB0505ZP-6W	5	4.5-9	5	1200	76
WRB0512ZP-6W			12	500	80
WRB0515ZP-6W			15	400	82
WRA1205ZP-6W	12	9-18	± 5	± 600	78
WRA1212ZP-6W			± 12	± 250	82
WRA1215ZP-6W			± 15	± 200	84
WRB1205ZP-6W	12	9-18	5	1200	78
WRB1212ZP-6W			12	500	82
WRB1215ZP-6W			15	400	84
WRA2405ZP-6W	24	18-36	± 5	± 600	80
WRA2412ZP-6W			± 12	± 250	84
WRA2415ZP-6W			± 15	± 200	86
WRB2403ZP-6W	24	18-36	3.3	1500	78
WRB2405ZP-6W			5	1200	80
WRB2412ZP-6W			12	500	84
WRB2415ZP-6W	24	18-36	15	400	86
WRA4805ZP-6W			± 5	± 600	80
WRA4812ZP-6W			± 12	± 250	84
WRA4815ZP-6W	48	36-72	± 15	± 200	86
WRB4805ZP-6W			5	1200	80
WRB4812ZP-6W			12	500	84
WRB4815ZP-6W	48	36-72	15	400	86

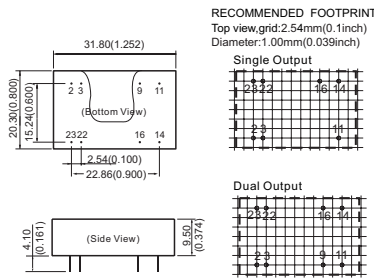
## WRE\_P-6W & WRF\_P-6W Series

WIDE INPUT, ISOLATED & REGULATED  
DUAL/SINGLE OUTPUT DC-DC CONVERTER

RoHS

### FEATURES

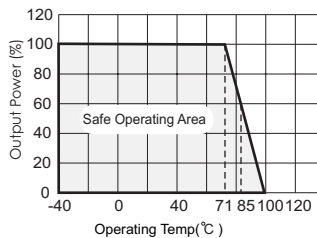
- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 3000VDC Input/Output Isolation
- Efficiency up to 86%
- Short Circuit Protection (Automatic recovery)
- Internal SMD construction
- UL94-V0 Package
- Industry standard pinout



WRE/F\_P-6W SIZE: 31.80x20.30x9.5(mm)

Function	GND	0V	-Vo	+Vo	Vin	NC
WRE	2,3	9,16	11	14	22,23	-
WRF	2,3	16	-	14	22,23	11

### TYPICAL TEMPERATURE CURVE



### SPECIFICATIONS

Positive voltage accuracy.....	± 1%(typ)
Negative voltage accuracy.....	± 3%(typ)
Line regulation: Input voltage from low to high.....	± 0.2%(typ)
Load regulation: From 10% to 100% load.....	± 0.5%(typ)
Temperature Drift: Refer to recommended circuit.....	± 0.03%/°C(max)
Ripple & Noise: 20MHz Bandwidth.....	150mVp-p(max)
Switching frequency: Nominal, full load.....	300KHz(PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours(min)
Cooling.....	Free air convection

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
WRE0505P-6W	5	4.5-9	± 5	± 600	76
WRE0512P-6W			± 12	± 250	80
WRE0515P-6W			± 15	± 200	82
WRF0505P-6W	5	4.5-9	5	1200	76
WRF0512P-6W			12	500	80
WRF0515P-6W			15	400	82
WRE1205P-6W	12	9-18	± 5	± 600	78
WRE1212P-6W			± 12	± 250	82
WRE1215P-6W			± 15	± 200	84
WRF1205P-6W	12	9-18	5	1200	78
WRF1212P-6W			12	500	82
WRF1215P-6W			15	400	84
WRE2405P-6W	24	18-36	± 5	± 600	80
WRE2412P-6W			± 12	± 250	84
WRE2415P-6W			± 15	± 200	86
WRF2405P-6W	24	18-36	5	1200	80
WRF2412P-6W			12	500	84
WRF2415P-6W			15	400	86
WRE4805P-6W	48	36-72	± 5	± 600	80
WRE4812P-6W			± 12	± 250	84
WRE4815P-6W			± 15	± 200	86
WRF4805P-6W	48	36-72	5	1200	80
WRF4812P-6W			12	500	84
WRF4815P-6W			15	400	86

AC-DC SERIES

DC-DC FIXED INPUT ISOLATED/UNREGULATED

DC-DC FIXED INPUT ISOLATED/REGULATED

DC-DC WIDE INPUT ISOLATED/REGULATED

DC-DC ULTRA-WIDE INPUT ISOLATED/REGULATED

DC-DC WIDE INPUT NON-ISOLATED/REGULATED

LED DRIVER

IGBT DRIVER

ISOLATION AMPLIFIER MODULE



# Wide Input Isolated, Regulated Series

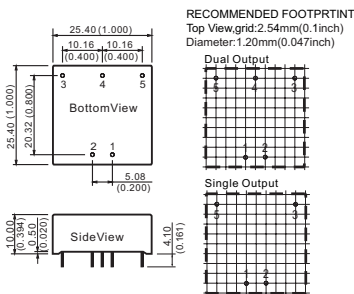
## WRA\_YMD-6W & WRB\_YMD-6W Series

RoHS

**WIDE INPUT, ISOLATED & REGULATED  
DUAL/SINGLE OUTPUT DC-DC CONVERTER**

### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Input/Output Isolation
- Internal SMD required
- Metal Shielding Package
- Short Circuit Protection(automatic recovery)

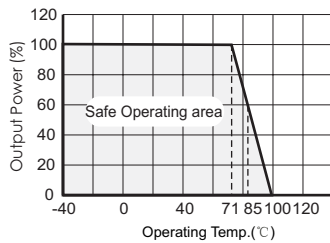


WRA/B_YMD	Function	GND	Vin	+Vo	0V	-Vo
WRA_YMD	1	2	3	4	5	
WRB_YMD	1	2	3	5	-	

### SPECIFICATIONS

Positive voltage accuracy.....	± 1% (typ)
Negative voltage accuracy.....	± 3% (typ)
Line regulation: Input Voltage from low to high.....	± 0.2% (typ)
Load regulation: From 10% to 100% Load.....	± 0.5% (typ)
Temperature drift: Refer to recommended circuit.....	± 0.03%/°C (max)
Ripple & Noise: 20MHz Bandwidth.....	100mVp-p (max)
Switching frequency: Nominal, full load.....	300KHz (PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours (min)
Cooling.....	Free air convection

### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %		
WRA0505YMD-6W	5	4.5-9	±5	±600	76		
WRA0512YMD-6W			±12	±250	80		
WRA0515YMD-6W			±15	±200	82		
WRB0505YMD-6W	5	4.5-9	5	1200	76		
WRB0512YMD-6W			12	500	80		
WRB0515YMD-6W			15	400	82		
WRA1205YMD-6W	12	9-18	±5	±600	79		
WRA1212YMD-6W			±12	±250	82		
WRA1215YMD-6W			±15	±200	84		
WRB1205YMD-6W	12	9-18	5	1200	79		
WRB1212YMD-6W			12	500	82		
WRB1215YMD-6W			15	400	84		
WRA2405YMD-6W	24	18-36	±5	±600	81		
WRA2412YMD-6W			±12	±250	84		
WRA2415YMD-6W			±15	±200	86		
WRB2403YMD-6W	24	18-36	3.3	1500	78		
WRB2405YMD-6W			5	1200	80		
WRB2412YMD-6W			12	500	84		
WRB2415YMD-6W	24	18-36	15	400	86		
WRA4805YMD-6W			48	36-72	±5	±600	80
WRA4812YMD-6W					±12	±250	84
WRA4815YMD-6W	±15	±200			85		
WRB4803YMD-6W	48	36-72	3.3	1500	78		
WRB4805YMD-6W			5	1200	80		
WRB4812YMD-6W			12	500	84		
WRB4815YMD-6W	48	36-72	15	400	86		

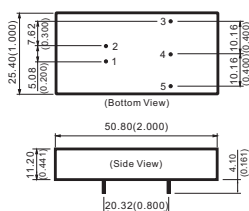
## WRA\_D-10W & WRB\_D-10W Series

RoHS

**WIDE INPUT, ISOLATED & REGULATED  
DUAL/SINGLE OUTPUT DC-DC CONVERTER**

### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- DIP package
- 1500VDC Input/Output Isolation
- Short Circuit Protection(automatic recovery)
- Metal Shielding Package
- Industry Standard Pinout



WRA/B_D	Function	GND	Vin	+Vo	COM	-Vo	0V
WRA	1	2	3	4	5	-	
WRB	1	2	3	-	-	5	

### SPECIFICATIONS

Positive voltage accuracy.....	± 1% (typ)
Negative voltage accuracy.....	± 3% (typ)
Line Regulation: Input voltage from low to high.....	± 0.2% (typ)
Load Regulation: From 10% to 100% load.....	± 0.5% (typ)
Temperature Drift: Refer to recommended circuit.....	± 0.03%/°C (max)
Ripple & Noise: 20MHz Bandwidth.....	150mVp-p (max)
Switching frequency: Nominal, full load.....	300KHz (PFM)
Storage temperature.....	-55°C ~ +125°C
Isolation resistance.....	1000MΩ (min)
MTBF.....	1,000,000 hours (min)
Cooling.....	Free air convection

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %		
WRA0505D-10W	5	4.5-9	±5	±1000	76		
WRA0512D-10W			±12	±416	80		
WRA0515D-10W			±15	±333	82		
WRB0505D-10W	5	4.5-9	5	2000	76		
WRB0512D-10W			12	833	80		
WRB0515D-10W			15	666	82		
WRA1205D-10W	12	9-18	±5	±1000	80		
WRA1212D-10W			±12	±416	82		
WRA1215D-10W			±15	±333	84		
WRB1203D-10W	12	9-18	3.3	2500	77		
WRB1205D-10W			5	2000	80		
WRB1212D-10W			12	833	82		
WRB1215D-10W	12	9-18	15	666	84		
WRA2405D-10W			24	18-36	±5	±1000	82
WRA2412D-10W					±12	±416	84
WRA2415D-10W	±15	±333			86		
WRB2403D-10W	24	18-36	3.3	2500	78		
WRB2405D-10W			5	2000	82		
WRB2412D-10W			12	833	84		
WRB2415D-10W	24	18-36	15	666	85		
WRA4805D-10W			48	36-72	±5	±1000	82
WRA4812D-10W					±12	±416	84
WRA4815D-10W	±15	±333			85		
WRB4803D-10W	48	36-72	3.3	2500	78		
WRB4805D-10W			5	2000	82		
WRB4812D-10W			12	833	83		
WRB4815D-10W	48	36-72	15	666	85		

# Wide Input Isolated, Regulated Series

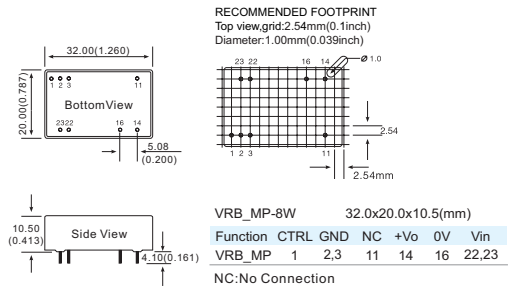


## VRB\_MP-8W Series

### WIDE INPUT, ISOLATED & REGULATED SINGLE OUTPUT DC-DC CONVERTER

#### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Input/Output Isolation
- Remote ON/OFF Control
- Metal Shielding Package
- Internal SMD Construction
- Industry Standard Pinout





# Wide Input Isolated, Regulated Series

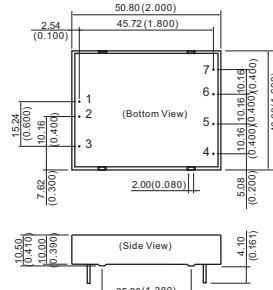
## VRA\_D-20W & VRB\_D-20W Series

WIDE INPUT, ISOLATED & REGULATED  
DUAL/SINGLE OUTPUT DC-DC CONVERTER

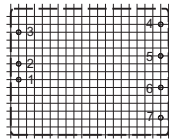
RoHS

### FEATURES

- Operating Temperature: -40°C ~ +71°C
- Wide (2:1) Input Range
- 1500VDC Input/Output Isolation
- Under voltage lockout
- Over Voltage Protection
- Short Circuit Protection(Automatic recovery)
- Metal Shielding Package
- Internal SMD construction



RECOMMENDED FOOTPRINT  
Top view,grid:2.54mm(0.1inch)  
Diameter:1.20mm(0.047inch)



Function	Vin	GND	CTRL	Trim	-Vo	OV	+Vo
VRA_D	1	2	3	4	5	6	7
VRB_D	1	2	3	4	-	5	6

Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
VRA1205D-20W	12	9-18	±5	±2000	80
VRA1212D-20W			±12	±833	82
VRA1215D-20W			±15	±666	82
VRB1203D-20W	12	9-18	3.3	5400	86
VRB1205D-20W			5	4000	79
VRB1212D-20W			12	1666	81
VRB1215D-20W	24	18-36	15	1333	82
VRA2405D-20W			±5	±2000	81
VRA2412D-20W			±12	±833	86
VRA2415D-20W	24	18-36	±15	±666	86
VRB2403D-20W			3.3	5400	86
VRB2405D-20W			5	4000	81
VRB2412D-20W	48	36-75	12	1666	83
VRB2415D-20W			15	1333	85
VRA4805D-20W			±5	±2000	81
VRA4812D-20W	48	36-75	±12	±833	86
VRA4815D-20W			±15	±666	86
VRB4803D-20W			3.3	5400	87
VRB4805D-20W	48	36-75	5	4000	83
VRB4812D-20W			12	1666	84
VRB4815D-20W			15	1333	84

### SPECIFICATIONS

Output voltage accuracy..... ± 1%(typ)  
Line regulation: Input voltage from low to high..... ± 0.2%(typ)  
Load regulation: From 10% to 100% load..... ± 0.5%(typ)  
Temperature drift: Refer to recommended circuit..... ± 0.02%/°C(typ)  
Ripple & Noise: 20MHz Bandwidth.....150mVp-p(max)  
Switching frequency: Nominal, full load.....300KHz(typ)  
Storage temperature.....-55°C ~ +105°C  
Isolation resistance.....1000MΩ (min)  
MTBF.....1,000,000 hours(min)  
Cooling.....Free air convection

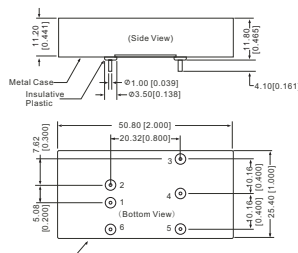
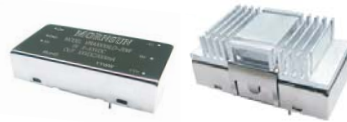
## VRA\_LD-20W Series

WIDE INPUT, ISOLATED & REGULATED  
DUAL OUTPUT DC-DC CONVERTER

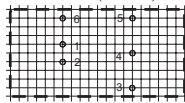
RoHS

### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Input/Output Isolation
- Remote ON/OFF control
- Under voltage lockout
- Over Voltage Protection
- Short Circuit Protection (Automatic recovery)
- Six-sided Metal Shielding Package
- Internal SMD construction
- Industry Standard Pinout

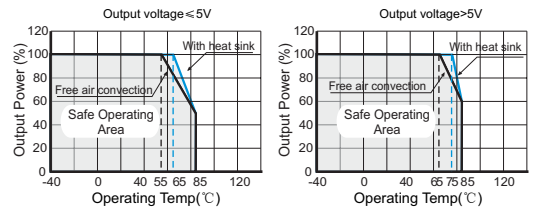


RECOMMENDED FOOTPRINT  
Top view,grid:2.54mm(0.1inch)  
Diameter:1.20mm(0.047inch)



Function	GND	Vin	+Vo	OV	-Vo	CTRL	Trim
VRA_LD	1	2	3	4	5	6	-

### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
VRA1205LD-20W	12	9-18	±5	±2000	84
VRA1212LD-20W			±12	±833	88
VRA1215LD-20W			±15	±666	88
VRA2405LD-20W	24	18-36	±5	±2000	87
VRA2412LD-20W			±12	±833	89
VRA2415LD-20W			±15	±666	89
VRA4805LD-20W	48	36-75	±5	±2000	85
VRA4812LD-20W			±12	±833	87
VRA4815LD-20W			±15	±666	88

Note: 1. Size of product with Heat-sink: 50.8\*31\*23mm;  
2. If use heat-sink, make sure there is enough space;  
3. Add suffix II for heat-sink mounted, for example VRA2405LD-20WH.

### SPECIFICATIONS

Output voltage accuracy..... ± 1%(typ)  
Line regulation: Input voltage from low to high..... ± 0.2%(typ)  
Load regulation: From 10% to 100% load..... ± 0.5%(typ)  
Temperature Drift: Refer to recommended circuit..... ± 0.02%/°C(typ)  
Ripple & Noise : 20MHz Bandwidth.....150mVp-p(max)  
Switching frequency: Nominal, full load.....300KHz(typ)  
Storage temperature.....-55°C ~ +125°C  
Isolation resistance.....1000MΩ (min)  
MTBF.....1,000,000 hours(min)  
Cooling.....Free air convection



# Wide Input Isolated, Regulated Series



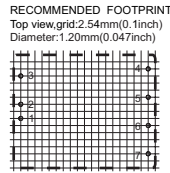
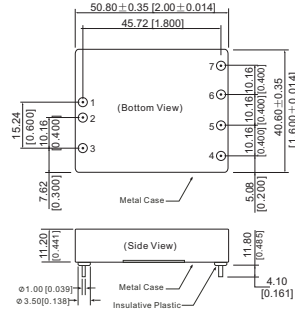
## VRA\_D-30W & VRB\_D-30W Series

WIDE INPUT, ISOLATED & REGULATED  
DUAL/SINGLE OUTPUT DC-DC CONVERTER

RoHS

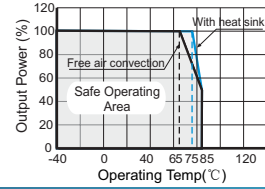
### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Input/Output Isolation
- Remote ON/OFF control
- Under voltage lockout
- Over Voltage Protection
- Short Circuit Protection (Automatic recovery)
- Six-sided Metal Shielding Package
- Internal SMD construction



Function	Vin	GND	CTRL	Trim	-Vo	0V	+Vo
VRA_D	1	2	3	4	5	6	7
VRB_D	1	2	3	4	-	5	6

### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
* VRA1205D-30W	12	9-18	±5	±3000	80
* VRA1212D-30W	12	9-18	±12	±1250	82
* VRA1215D-30W	12	9-18	±15	±1000	82
VRB1203D-30W	12	9-18	3.3	6000	85
VRB1205D-30W	12	9-18	5	6000	86
VRB1212D-30W	12	9-18	12	2500	86
VRB1215D-30W	12	9-18	15	2000	86
* VRA2405D-30W	24	18-36	±5	±3000	81
* VRA2412D-30W	24	18-36	±12	±1250	86
* VRA2415D-30W	24	18-36	±15	±1000	86
VRB2403D-30W	24	18-36	3.3	6000	87
VRB2405D-30W	24	18-36	5	6000	88
VRB2412D-30W	24	18-36	12	2500	89
VRB2415D-30W	24	18-36	15	2000	89
* VRA4805D-30W	48	36-75	±5	±3000	81
* VRA4812D-30W	48	36-75	±12	±1250	86
* VRA4815D-30W	48	36-75	±15	±1000	86
VRB4803D-30W	48	36-75	3.3	6000	87
VRB4805D-30W	48	36-75	5	6000	89
VRB4812D-30W	48	36-75	12	2500	87
VRB4815D-30W	48	36-75	15	2000	88

Note: 1. Size of product with Heat-sink: 50.8\*46.2\*31mm;  
2. If use heat-sink, make sure there is enough space;  
3. Add suffix "H" for heat-sink mounted, for example VRB2405D-30WH.  
4. \* Designing.

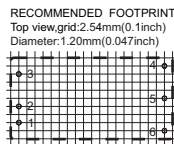
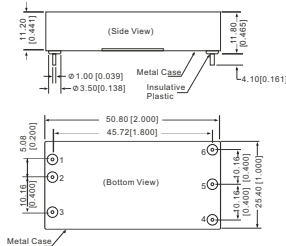
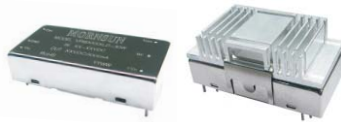
## VRB\_LD-30W Series

WIDE INPUT, ISOLATED & REGULATED  
SINGLE OUTPUT DC-DC CONVERTER

RoHS

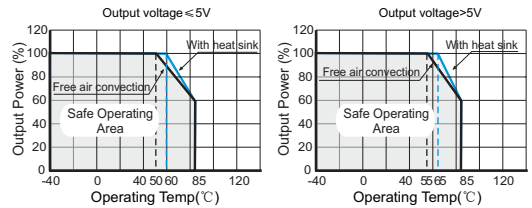
### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- 1500VDC Input/Output Isolation
- Remote ON/OFF control
- Under voltage lockout
- Over Voltage Protection, Over Current protection
- Short Circuit Protection (Automatic recovery)
- Six-sided Metal Shielding Package
- Internal SMD construction
- Industry Standard Pinout



Function	Vin	GND	Ctrl	Trim	-Vo	0V	+Vo
VRB_LD	1	2	3	4	-	5	6

### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
VRB2403LD-30W	24	18-36	3.3	6000	84
VRB2405LD-30W	24	18-36	5	6000	86
VRB2412LD-30W	24	18-36	12	2500	87
VRB2415LD-30W	24	18-36	15	2000	87
VRB4803LD-30W	48	36-75	3.3	6000	84
VRB4805LD-30W	48	36-75	5	6000	86
VRB4812LD-30W	48	36-75	12	2500	88
VRB4815LD-30W	48	36-75	15	2000	87

Note: 1. Size of product with Heat-sink: 50.8\*31\*23mm(max);  
2. If use heat-sink, make sure there is enough space;  
3. Add suffix "H" for heat-sink mounted, for example VRB2405LD-30WH.

### SPECIFICATIONS

- Output voltage accuracy..... ± 1%(typ)
- Line regulation: Input voltage from low to high..... ± 0.2%(typ)
- Load regulation: From 10% to 100% load..... ± 0.5%(typ)
- Temperature Drift: Refer to recommended circuit..... ± 0.02%/°C (typ)
- Ripple & Noise : 20MHz Bandwidth..... 150mVp-p(max)
- Switching frequency: Nominal, full load..... 300KHz (typ)
- Storage temperature..... -55°C ~ +125°C
- Isolation resistance..... 1000MΩ (min)
- MTBF..... 1,000,000 hours(min)
- Cooling..... Free air convection

AC-DC SERIES  
DC-DC FIXED INPUT ISOLATED/REGULATED  
DC-DC FIXED INPUT ISOLATED/REGULATED  
DC-DC WIDE INPUT ISOLATED/REGULATED  
DC-DC ULTRA-WIDE INPUT ISOLATED/REGULATED  
DC-DC WIDE INPUT  
NON-ISOLATED/REGULATED  
LED DRIVER  
IGBT DRIVER  
ISOLATION AMPLIFIER MODULE



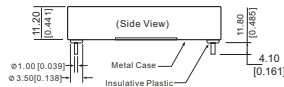
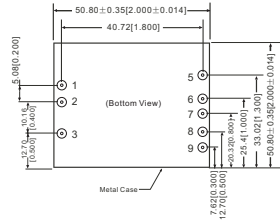
# Wide Input Isolated, Regulated Series

RoHS

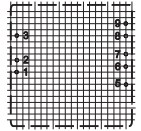
## VRB\_D-40W Series WIDE INPUT, ISOLATED & REGULATED SINGLE OUTPUT DC-DC CONVERTER

### FEATURES

- Operating Temperature: -40°C ~ +85°C
- Wide (2:1) Input Range
- High power density, Efficiency up to 90%
- 1500VDC Input/Output Isolation
- Remote Voltage Compensate
- Under voltage lockout
- Over Voltage Protection
- Over Current Protection
- Over Temperature Protection
- Short Circuit Protection(Automatic recovery)
- Six-sided Metal Shielding Package
- Internal SMD construction

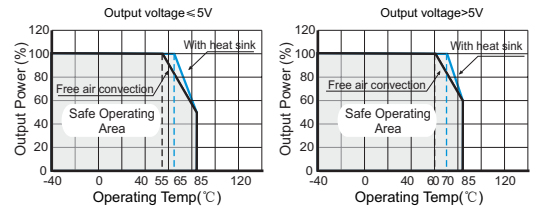


RECOMMENDED FOOTPRINT  
Top View, grid: 2.54mm(0.1inch)  
Diameter: 1.20mm(0.047inch)



Function	Vin	GND	CTRL	-Sense	+Sense	+Vo	0V	Trim
VRB_D	1	2	3	5	6	7	8	9

### TYPICAL TEMPERATURE CURVE



Part Number	Vin (VDC)	Input Range (VDC)	Vout (VDC)	Iout (mA)	Eff(TYP) %
VRB1203D-40W	12	9-18	3.3	8000	84
VRB1205D-40W			5	8000	86
VRB1212D-40W			12	3300	86
VRB1215D-40W	24	18-36	15	2666	88
VRB2403D-40W			3.3	8000	87
VRB2405D-40W			5	8000	89
VRB2412D-40W	48	36-75	12	3300	89
VRB2415D-40W			15	2666	90
VRB4803D-40W			3.3	8000	85
VRB4805D-40W	48	36-75	5	8000	88
VRB4812D-40W			12	3300	90
VRB4815D-40W			15	2666	90

Note: 1. Size of product with Heat-sink: 50.8\*46.2\*31mm;  
2. If use heat-sink, make sure there is enough space;  
3. Add suffix "H" for heat-sink mounted, for example VRB2405D-40WH.  
4. \* Designing.

### SPECIFICATIONS

- Output voltage accuracy..... ± 1%(typ)
- Line regulation: Input voltage from low to high..... ± 0.2%(typ)
- Load regulation: From 10% to 100% load..... ± 0.5%(typ)
- Temperature drift: Refer to recommended circuit... ± 0.02%/°C(typ)
- Ripple & Noise: 20MHz Bandwidth..... 150mVp-p(max)
- Switching frequency: Nominal, full load..... 300KHz(typ)
- Storage temperature..... -55°C ~ +125°C
- Isolation resistance..... 1000MΩ (min)
- MTBF..... 1,000,000 hours(min)
- Cooling..... Free air convection