COSEL DC-DC Converters PCB Mount type

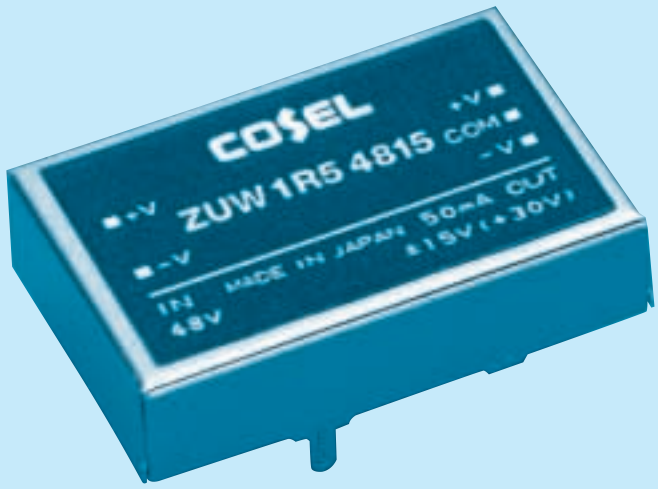
# ZUW1R5

**Ordering information**

| ZU | W | 1R5 | 12 | 12 | |
|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | |

①Series name
②Dual output
③Output wattage
④Input voltage
⑤Output voltage

RoHS




| MODEL | | ZUW1R50512 | ZUW1R50515 | ZUW1R51212 | ZUW1R51215 | ZUW1R52412 | ZUW1R52415 | ZUW1R54812 | ZUW1R54815 |
|---|---|---|---|---|---|---|---|---|---|
| MAX OUTPUT WATTAGE[W] | | 1.56 | 1.50 | 1.56 | 1.50 | 1.56 | 1.50 | 1.56 | 1.50 |
| DC OUTPUT | VOLTAGE[V] | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 |
| | CURRENT[A] | 0.065 | 0.050 | 0.065 | 0.050 | 0.065 | 0.050 | 0.065 | 0.050 |

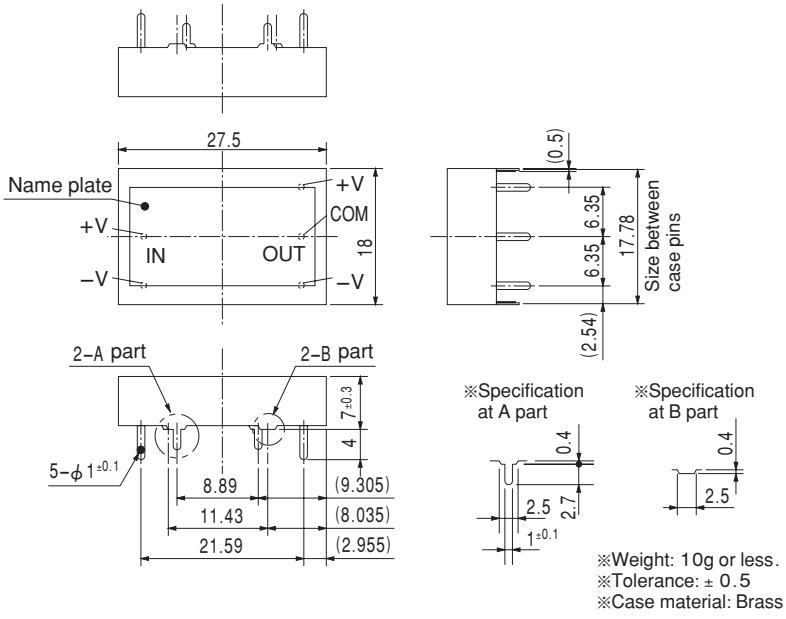
## SPECIFICATIONS

Output pins can be connected in series to make a 24V/30V output.

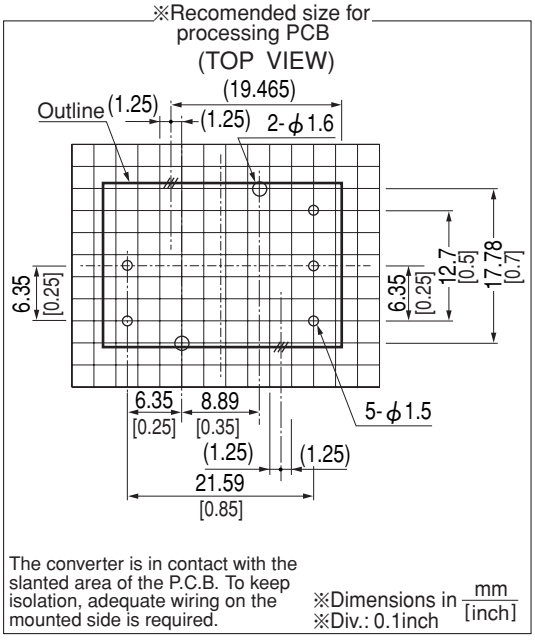
| | MODEL | ZUW1R50512 | ZUW1R50515 | ZUW1R51212 | ZUW1R51215 | ZUW1R52412 | ZUW1R52415 | ZUW1R54812 | ZUW1R54815 |
|---|---|---|---|---|---|---|---|---|---|
| INPUT | VOLTAGE[V] | DC4.5 - 9 | | DC9 - 18 | | DC18 - 36 | | DC36 - 72 | |
| | CURRENT[A] *1 | 0.466typ | 0.448typ | 0.183typ | 0.176typ | 0.092typ | 0.088typ | 0.046typ | 0.044typ |
| | EFFICIENCY[%] *1 | 67typ | 67typ | 71typ | 71typ | 71typ | 71typ | 71typ | 71typ |
| OUTPUT | VOLTAGE[V] | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) |
| | CURRENT[A] | 0.065 | 0.050 | 0.065 | 0.050 | 0.065 | 0.050 | 0.065 | 0.050 |
| | LINE REGULATION[mV] | 60max | 75max | 60max | 75max | 60max | 75max | 60max | 75max |
| | LOAD REGULATION[mV] | 600max | 750max | 600max | 750max | 600max | 750max | 600max | 750max |
| | RIPPLE[mVp-p] *2 | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] *2 | 150max | 150max | 150max | 150max | 150max | 150max | 150max | 150max |
| | TEMPERATURE REGULATION[mV] -20 to +55℃ | 150max | 180max | 150max | 180max | 150max | 180max | 150max | 180max |
| | DRIFT[mV] *3 | 50max | 60max | 50max | 60max | 50max | 60max | 50max | 60max |
| | START-UP TIME[ms] | 20max (Minimum input, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed | | | | | | | |
| | OUTPUT VOLTAGE SETTING[V] | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 |
| PROTECTION CIRCUIT | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | |
| ISOLATION | INPUT-OUTPUT | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE | -20 to +71℃, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | |
| | STORAGE TEMP.,HUMID.AND ALTITUDE | -40 to +85℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | |
| | VIBRATION | 10 - 55Hz, 98.0m/s² (10G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | 490.3m/s² (50G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY | AGENCY APPROVALS | UL60950-1, EN60950-1, CSA C22.2 No.60950-1 Complies with IEC60950-1 | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 27.5×7×18mm (W×H×D) / 10g max | | | | | | | |
| | COOLING METHOD | Convection | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%.
*2 Measured by 20MHz oscilloscope.
*3 The drift is a change at 25℃ of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
* The output specification is at ±12V and ±15V.
* Series/Parallel operation with other model is not possible.

## External view




※Weight: 10g or less.
※Tolerance: ± 0.5
※Case material: Brass

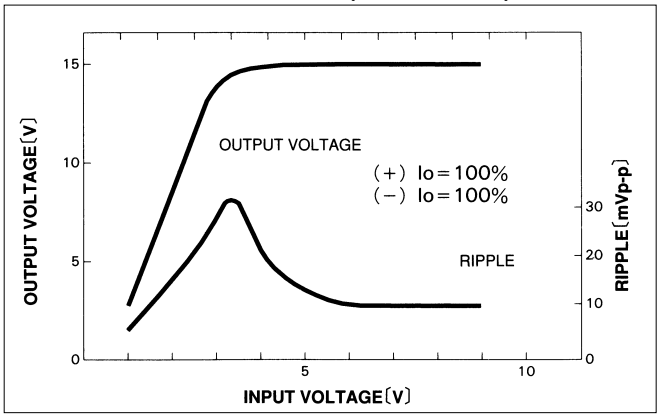



The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

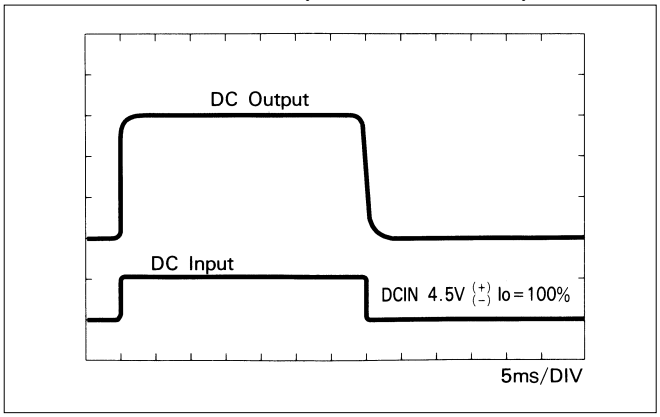
※Dimensions in mm [inch]
※Div.: 0.1inch

## Performance data

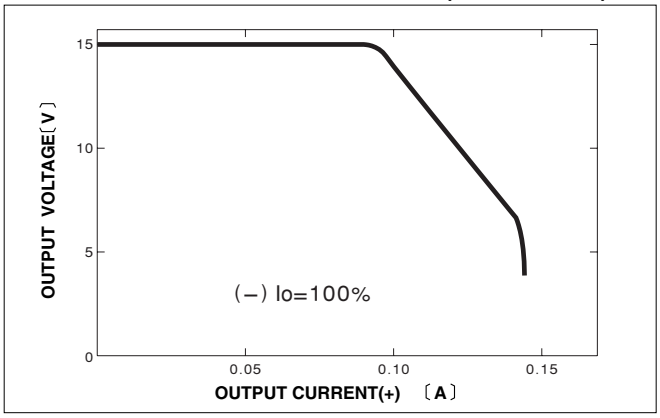
### ■STATIC CHARACTERISTICS (ZUW1R50515)



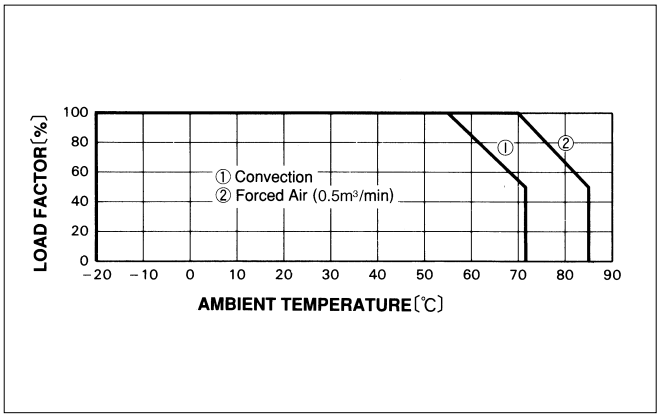

### ■RISE TIME & FALL TIME (ZUW1R50515:+15V)




### ■OVERCURRENT CHARACTERISTICS (ZUW1R50515)




### ■DERATING CURVE



COSEL DC-DC Converters PCB Mount type

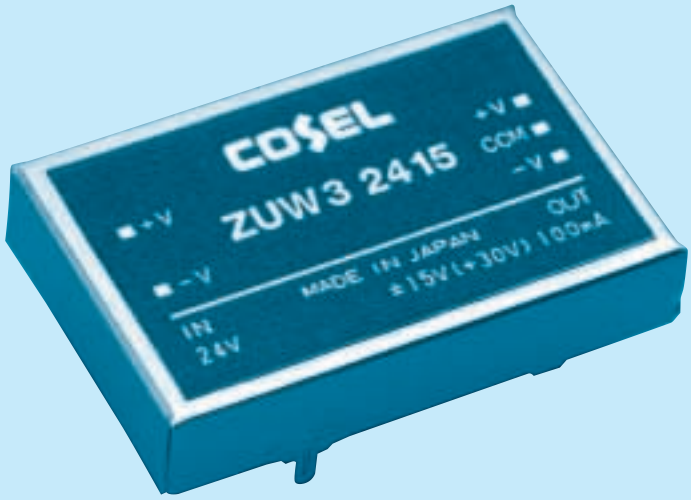
# ZUW3

**Ordering information**

| ZU | W | 3 | 12 | 12 | |
|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | |

①Series name
②Dual output
③Output wattage
④Input voltage
⑤Output voltage

RoHS




| MODEL | | ZUW30512 | ZUW30515 | ZUW31212 | ZUW31215 | ZUW32412 | ZUW32415 | ZUW34812 | ZUW34815 |
|---|---|---|---|---|---|---|---|---|---|
| MAX OUTPUT WATTAGE[W] | | 3.12 | 3.00 | 3.12 | 3.00 | 3.12 | 3.00 | 3.12 | 3.00 |
| DC OUTPUT | VOLTAGE[V] | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 |
| | CURRENT[A] | 0.13 | 0.10 | 0.13 | 0.10 | 0.13 | 0.10 | 0.13 | 0.10 |

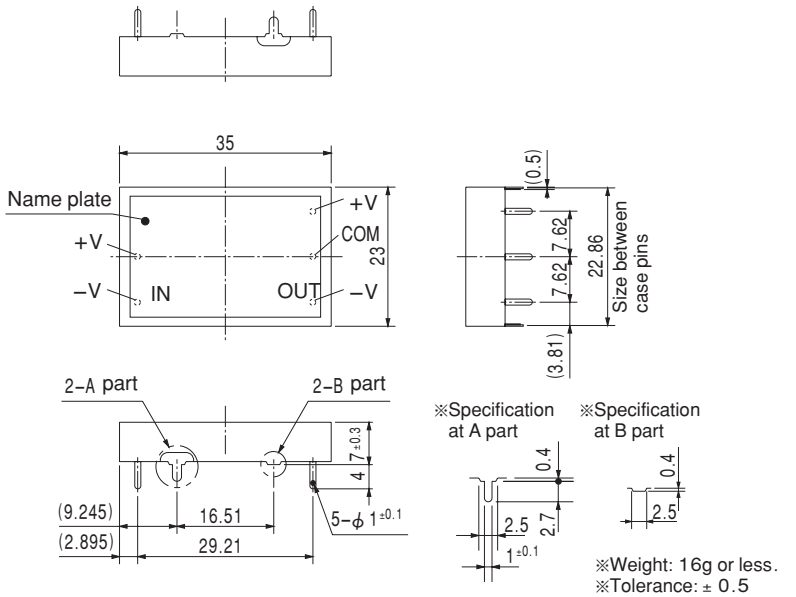
## SPECIFICATIONS

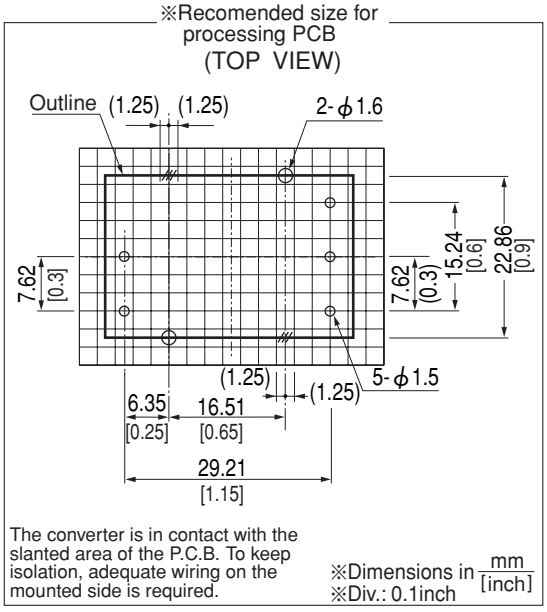
Output pins can be connected in series to make a 24V/30V output.

| | MODEL | ZUW30512 | ZUW30515 | ZUW31212 | ZUW31215 | ZUW32412 | ZUW32415 | ZUW34812 | ZUW34815 |
|---|---|---|---|---|---|---|---|---|---|
| INPUT | VOLTAGE[V] | DC4.5 - 9 | | DC9 - 18 | | DC18 - 36 | | DC36 - 72 | |
| | CURRENT[A] *1 | 0.891typ | 0.857typ | 0.351typ | 0.338typ | 0.176typ | 0.169typ | 0.087typ | 0.083typ |
| | EFFICIENCY[%] *1 | 70typ | 70typ | 74typ | 74typ | 74typ | 74typ | 75typ | 75typ |
| OUTPUT | VOLTAGE[V] | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) |
| | CURRENT[A] | 0.13 | 0.10 | 0.13 | 0.10 | 0.13 | 0.10 | 0.13 | 0.10 |
| | LINE REGULATION[mV] | 60max | 75max | 60max | 75max | 60max | 75max | 60max | 75max |
| | LOAD REGULATION[mV] | 600max | 750max | 600max | 750max | 600max | 750max | 600max | 750max |
| | RIPPLE[mVp-p] *2 | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] *2 | 150max | 150max | 150max | 150max | 150max | 150max | 150max | 150max |
| | TEMPERATURE REGULATION[mV] -20 to +55℃ | 150max | 180max | 150max | 180max | 150max | 180max | 150max | 180max |
| | DRIFT[mV] *3 | 50max | 60max | 50max | 60max | 50max | 60max | 50max | 60max |
| | START-UP TIME[ms] | 20max (Minimum input, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed | | | | | | | |
| | OUTPUT VOLTAGE SETTING[V] | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 |
| PROTECTION CIRCUIT | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | |
| ISOLATION | INPUT-OUTPUT | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE | -20 to +71℃, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | |
| | STORAGE TEMP.,HUMID.AND ALTITUDE | -40 to +85℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | |
| | VIBRATION | 10 - 55Hz, 98.0m/s² (10G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | 490.3m/s² (50G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY | AGENCY APPROVALS | UL60950-1, EN60950-1, CSA C22.2 No.60950-1 Complies with IEC60950-1 | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 35×7×23mm (W×H×D) / 16g max | | | | | | | |
| | COOLING METHOD | Convection | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%.
*2 Measured by 20MHz oscilloscope.
*3 The drift is a change at 25℃ of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
* The output specification is at ±12V and ±15V.
* Series/Parallel operation with other model is not possible.

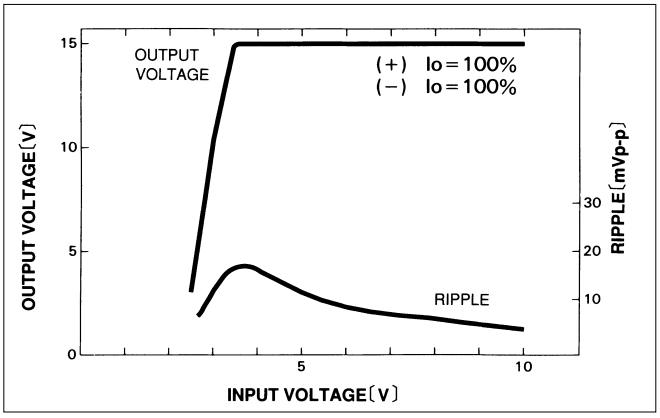
## External view



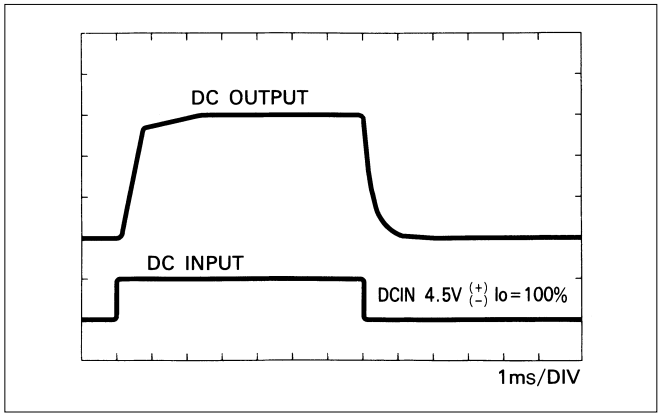




## Performance data

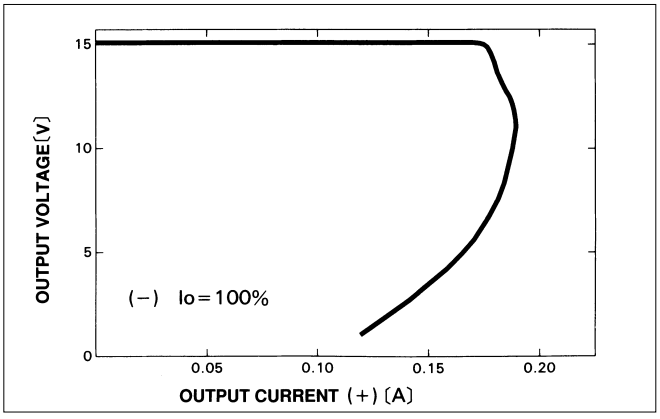
### ■STATIC CHARACTERISTICS (ZUW30515)



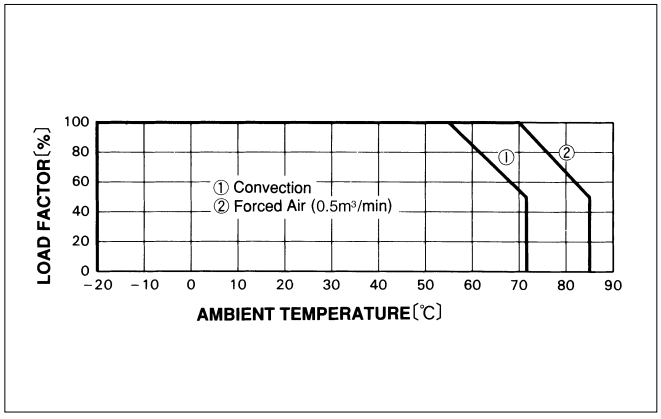

### ■RISE TIME & FALL TIME (ZUW30515:+15V)




### ■OVERCURRENT CHARACTERISTICS (ZUW30515)




### ■DERATING CURVE

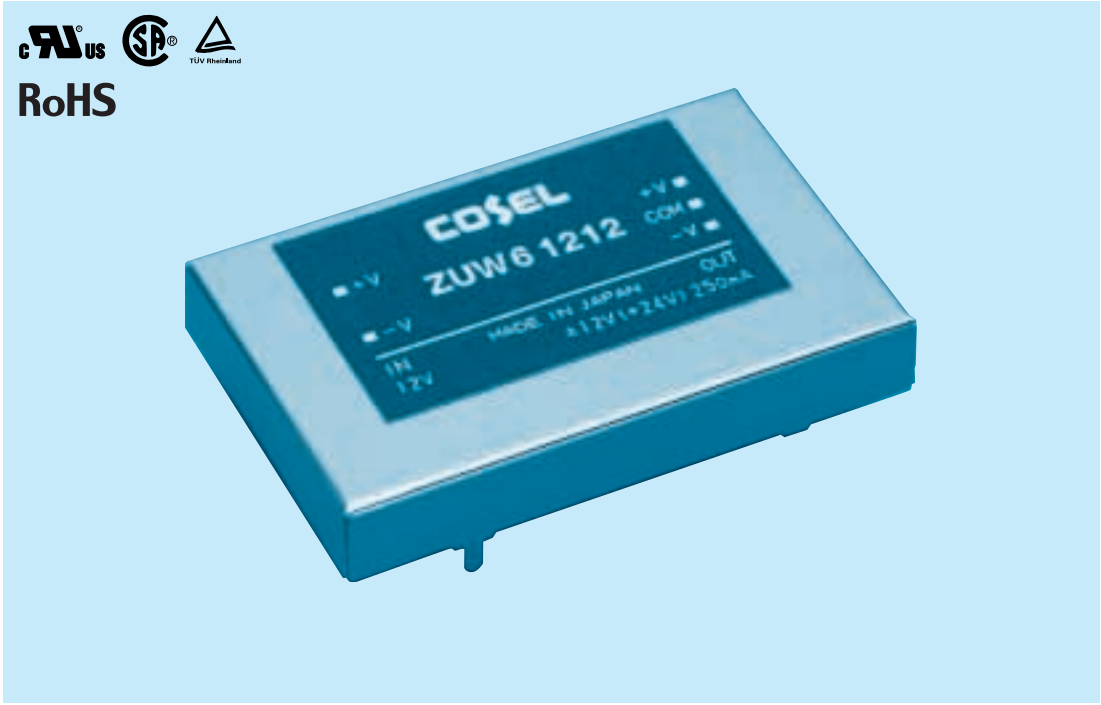


COSEL DC-DC Converters PCB Mount type

# ZUW6

**Ordering information**

| ZU | W | 6 | 12 | 12 | |
|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | |




①Series name
②Dual output
③Output wattage
④Input voltage
⑤Output voltage

| MODEL | | ZUW60512 | ZUW60515 | ZUW61212 | ZUW61215 | ZUW62412 | ZUW62415 | ZUW64812 | ZUW64815 |
|---|---|---|---|---|---|---|---|---|---|
| MAX OUTPUT WATTAGE[W] | | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 |
| DC OUTPUT | VOLTAGE[V] | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 |
| | CURRENT[A] | 0.25 | 0.20 | 0.25 | 0.20 | 0.25 | 0.20 | 0.25 | 0.20 |

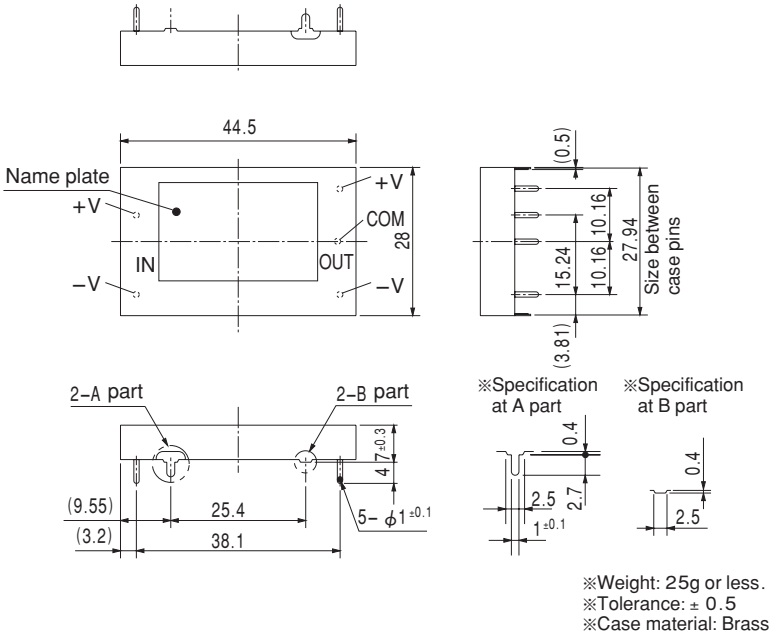
## SPECIFICATIONS

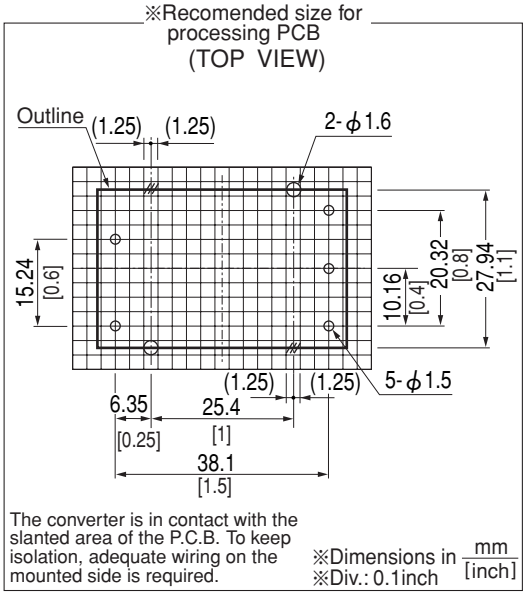
Output pins can be connected in series to make a 24V/30V output.

| | MODEL | ZUW60512 | ZUW60515 | ZUW61212 | ZUW61215 | ZUW62412 | ZUW62415 | ZUW64812 | ZUW64815 |
|---|---|---|---|---|---|---|---|---|---|
| INPUT | VOLTAGE[V] | DC4.5 - 9 | | DC9 - 18 | | DC18 - 36 | | DC36 - 72 | |
| | CURRENT[A] *1 | 1.60typ | 1.60typ | 0.65typ | 0.65typ | 0.33typ | 0.33typ | 0.17typ | 0.17typ |
| | EFFICIENCY[%] *1 | 75typ | 75typ | 77typ | 77typ | 77typ | 77typ | 77typ | 77typ |
| OUTPUT | VOLTAGE[V] | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) |
| | CURRENT[A] | 0.25 | 0.20 | 0.25 | 0.20 | 0.25 | 0.20 | 0.25 | 0.20 |
| | LINE REGULATION[mV] | 60max | 75max | 60max | 75max | 60max | 75max | 60max | 75max |
| | LOAD REGULATION[mV] | 600max | 750max | 600max | 750max | 600max | 750max | 600max | 750max |
| | RIPPLE[mVp-p] *2 | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] *2 | 150max | 150max | 150max | 150max | 150max | 150max | 150max | 150max |
| | TEMPERATURE REGULATION[mV] -20 to +55℃ | 150max | 180max | 150max | 180max | 150max | 180max | 150max | 180max |
| | DRIFT[mV] *3 | 50max | 60max | 50max | 60max | 50max | 60max | 50max | 60max |
| | START-UP TIME[ms] | 20max (Minimum input, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed | | | | | | | |
| | OUTPUT VOLTAGE SETTING[V] | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 |
| PROTECTION CIRCUIT | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | |
| ISOLATION | INPUT-OUTPUT | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE | -20 to +71℃, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | |
| | STORAGE TEMP.,HUMID.AND ALTITUDE | -40 to +85℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | |
| | VIBRATION | 10 - 55Hz, 98.0m/s² (10G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | 490.3m/s² (50G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY | AGENCY APPROVALS | UL60950-1, EN60950-1, CSA C22.2 No.60950-1 Complies with IEC60950-1 | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 44.5×7×28mm (W×H×D) / 25g max | | | | | | | |
| | COOLING METHOD | Convection | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%.
*2 Measured by 20MHz oscilloscope.
*3 The drift is a change at 25℃ of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
* The output specification is at ±12V and ±15V.
* Series/Parallel operation with other model is not possible.

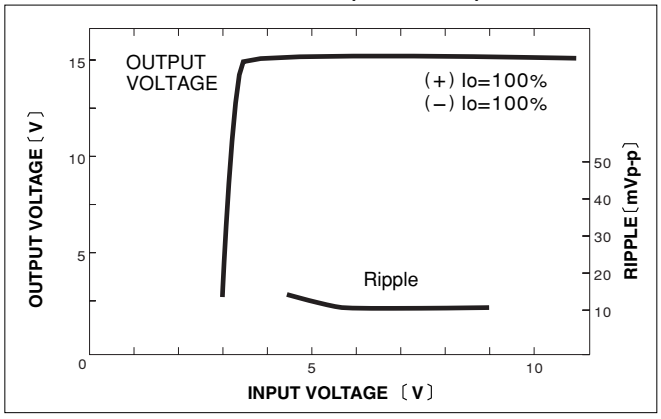
## External view



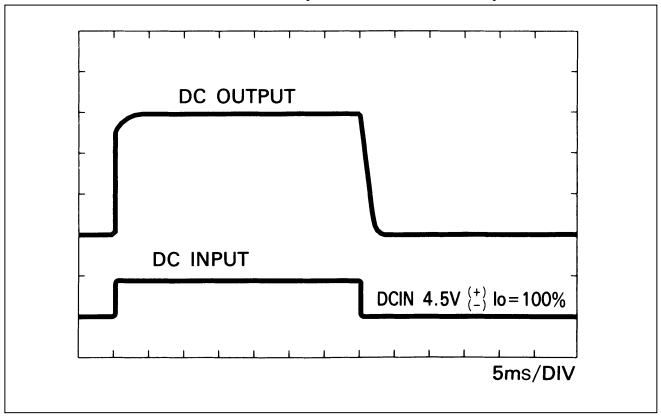




## Performance data

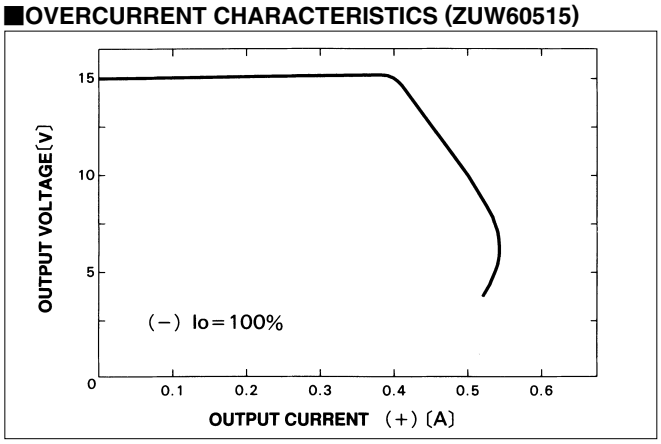
### ■STATIC CHARACTERISTICS (ZUW60515)



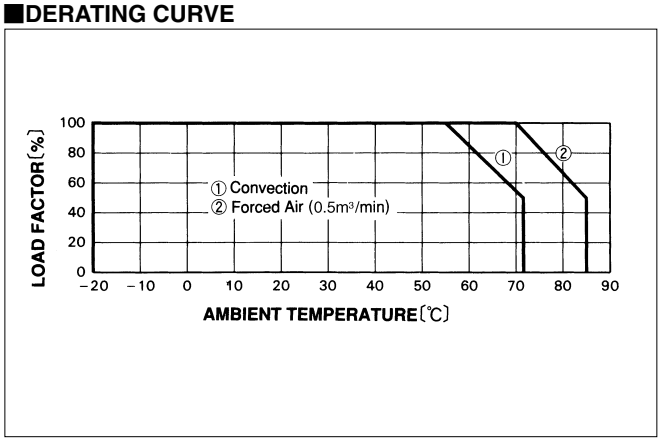

### ■RISE TIME & FALL TIME (ZUW60515:+15V)




### ■OVERCURRENT CHARACTERISTICS (ZUW60515)




### ■DERATING CURVE




ZU/ZT

COSEL DC-DC Converters PCB Mount type

# ZUW10

**Ordering information**

| ZU | W | 10 | 12 | 12 | |
|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | |

①Series name
②Dual output
③Output wattage
④Input voltage
⑤Output voltage

RoHS




| MODEL | | ZUW100512 | ZUW100515 | ZUW101212 | ZUW101215 | ZUW102412 | ZUW102415 | ZUW104812 | ZUW104815 |
|---|---|---|---|---|---|---|---|---|---|
| MAX OUTPUT WATTAGE[W] | | 8.4 | 9.0 | 10.8 | 10.5 | 10.8 | 10.5 | 10.8 | 10.5 |
| DC OUTPUT | VOLTAGE[V] | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 |
| | CURRENT[A] | 0.35 | 0.30 | 0.45 | 0.35 | 0.45 | 0.35 | 0.45 | 0.35 |

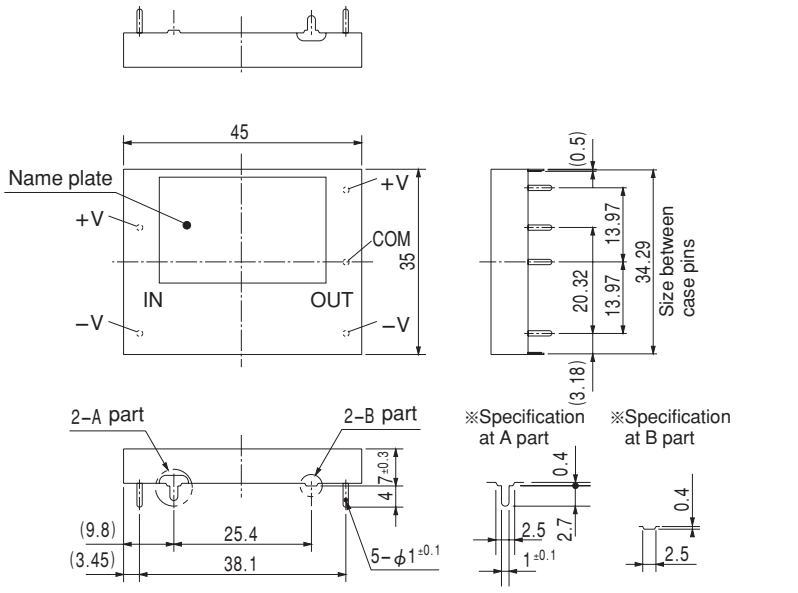
## SPECIFICATIONS

Output pins can be connected in series to make a 24V/30V output.

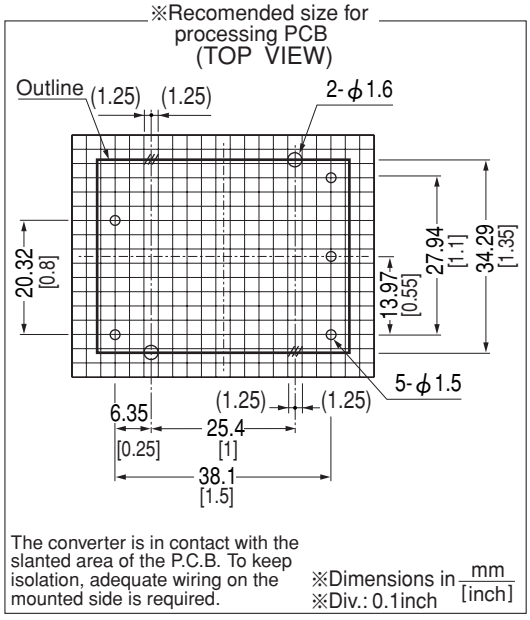
| | MODEL | ZUW100512 | ZUW100515 | ZUW101212 | ZUW101215 | ZUW102412 | ZUW102415 | ZUW104812 | ZUW104815 |
|---|---|---|---|---|---|---|---|---|---|
| INPUT | VOLTAGE[V] | DC4.5 - 9 | | DC9 - 18 | | DC18 - 36 | | DC36 - 72 | |
| | CURRENT[A] *1 | 2.24typ | 2.40typ | 1.12typ | 1.09typ | 0.56typ | 0.55typ | 0.28typ | 0.28typ |
| | EFFICIENCY[%] *1 | 75typ | 75typ | 81typ | 81typ | 81typ | 81typ | 81typ | 81typ |
| OUTPUT | VOLTAGE[V] | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) |
| | CURRENT[A] | 0.35 | 0.30 | 0.45 | 0.35 | 0.45 | 0.35 | 0.45 | 0.35 |
| | LINE REGULATION[mV] | 60max | 75max | 60max | 75max | 60max | 75max | 60max | 75max |
| | LOAD REGULATION[mV] | 600max | 750max | 600max | 750max | 600max | 750max | 600max | 750max |
| | RIPPLE[mVp-p] *2 | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] *2 | 150max | 150max | 150max | 150max | 150max | 150max | 150max | 150max |
| | TEMPERATURE REGULATION[mV] -20 to +55℃ | 150max | 180max | 150max | 180max | 150max | 180max | 150max | 180max |
| | DRIFT[mV] *3 | 50max | 60max | 50max | 60max | 50max | 60max | 50max | 60max |
| | START-UP TIME[ms] | 20max (Minimum input, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed | | | | | | | |
| | OUTPUT VOLTAGE SETTING[V] | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 |
| PROTECTION CIRCUIT | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | |
| ISOLATION | INPUT-OUTPUT | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE | -20 to +71℃, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | |
| | STORAGE TEMP.,HUMID.AND ALTITUDE | -40 to +85℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | |
| | VIBRATION | 10 - 55Hz, 98.0m/s² (10G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | 490.3m/s² (50G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY | AGENCY APPROVALS | UL60950-1, EN60950-1, CSA C22.2 No.60950-1 Complies with IEC60950-1 | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 45×7×35mm (W×H×D) / 40g max | | | | | | | |
| | COOLING METHOD | Convection | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%.
*2 Measured by 20MHz oscilloscope.
*3 The drift is a change at 25℃ of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
* The output specification is at ±12V and ±15V.
* Series/Parallel operation with other model is not possible.

## External view




※Weight: 40g or less.
※Tolerance: ± 0.5
※Case material: Brass

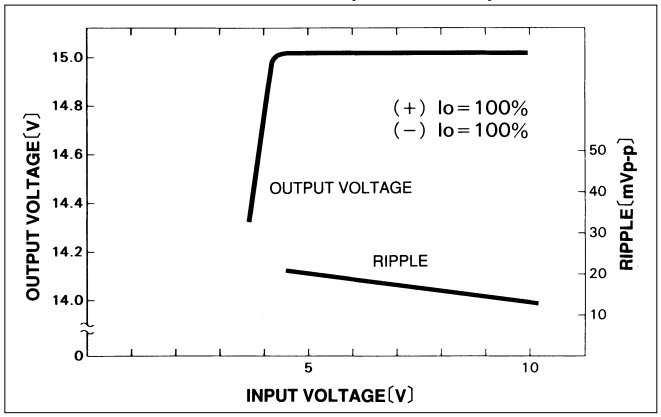



The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

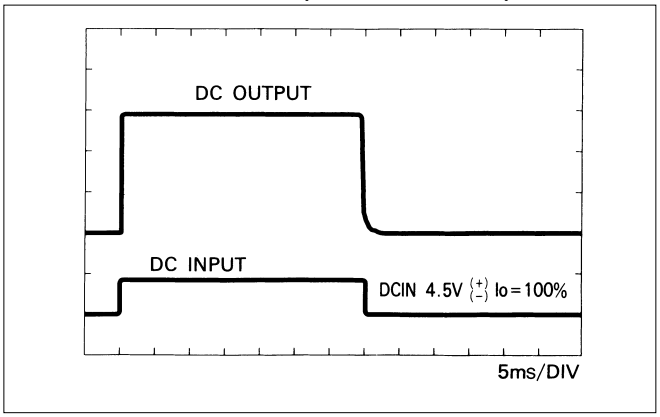
※Dimensions in mm [inch]
※Div.: 0.1inch

## Performance data

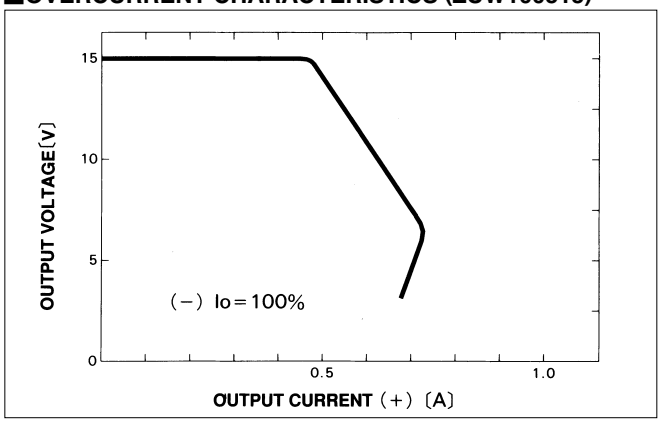
### ■STATIC CHARACTERISTICS (ZUW100515)



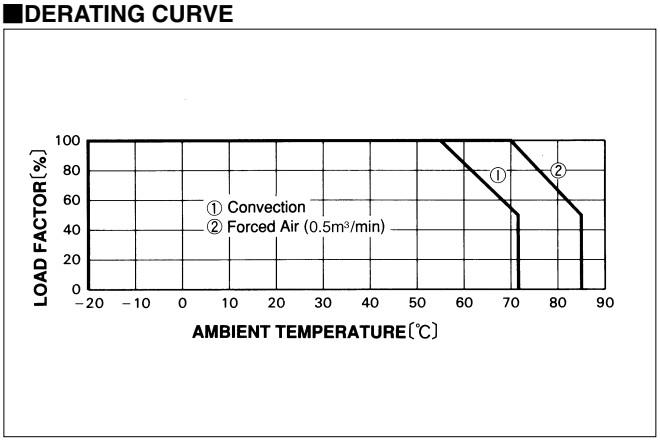

### ■RISE TIME & FALL TIME (ZUW100515:+15V)




### ■OVERCURRENT CHARACTERISTICS (ZUW100515)




### ■DERATING CURVE



COSEL DC-DC Converters PCB Mount type

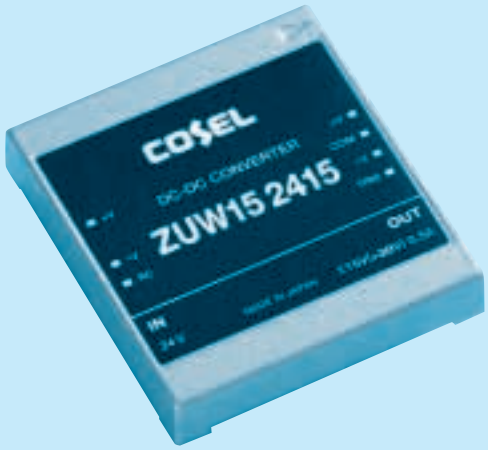
# ZUW15

**Ordering information**

| ZU | W | 15 | 12 | 12 | |
|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | |

①Series name
②Dual output
③Output wattage
④Input voltage
⑤Output voltage

RoHS




| MODEL | | ZUW150512 | ZUW150515 | ZUW151212 | ZUW151215 | ZUW152412 | ZUW152415 | ZUW154812 | ZUW154815 |
|---|---|---|---|---|---|---|---|---|---|
| MAX OUTPUT WATTAGE[W] | | 14.4 | 15.0 | 15.6 | 15.0 | 15.6 | 15.0 | 15.6 | 15.0 |
| DC OUTPUT | VOLTAGE[V] | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 |
| | CURRENT[A] | 0.6 | 0.5 | 0.65 | 0.5 | 0.65 | 0.5 | 0.65 | 0.5 |

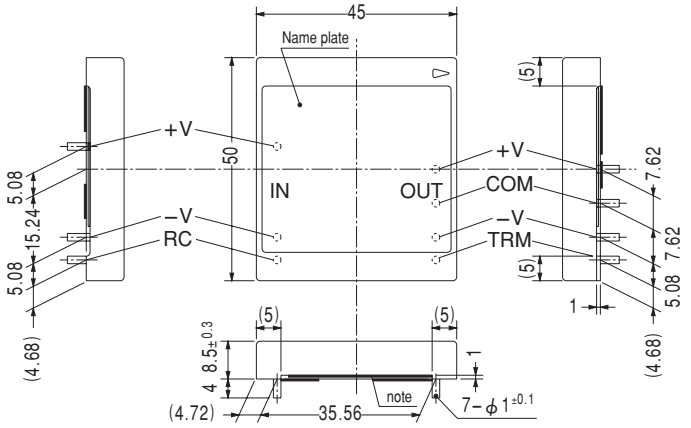
## SPECIFICATIONS

Output pins can be connected in series to make a 24V/30V output.

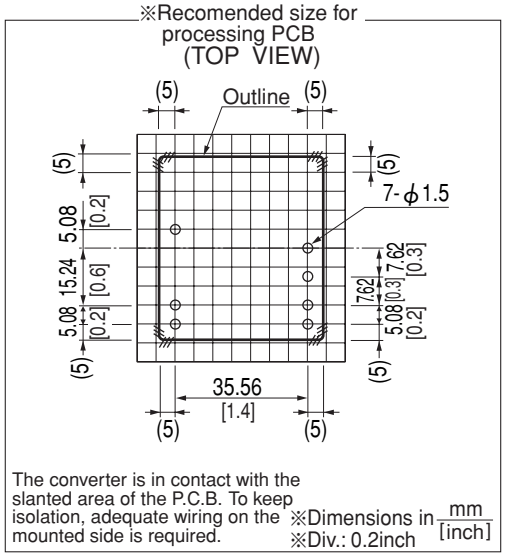
| | MODEL | ZUW150512 | ZUW150515 | ZUW151212 | ZUW151215 | ZUW152412 | ZUW152415 | ZUW154812 | ZUW154815 |
|---|---|---|---|---|---|---|---|---|---|
| INPUT | VOLTAGE[V] | DC4.5 - 9 | | DC9 - 18 | | DC18 - 36 | | DC36 - 75 | |
| | CURRENT[A] *1 | 3.56typ | 3.70typ | 1.57typ | 1.51typ | 0.78typ | 0.75typ | 0.39typ | 0.38typ |
| | EFFICIENCY[%] *1 | 81typ | 81typ | 83typ | 83typ | 83typ | 83typ | 83typ | 83typ |
| OUTPUT | VOLTAGE[V] | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) |
| | CURRENT[A] | 0.60 | 0.50 | 0.65 | 0.50 | 0.65 | 0.50 | 0.65 | 0.50 |
| | LINE REGULATION[mV] | 60max | 75max | 60max | 75max | 60max | 75max | 60max | 75max |
| | LOAD REGULATION[mV] | 600max | 750max | 600max | 750max | 600max | 750max | 600max | 750max |
| | RIPPLE[mVp-p] *2 | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] *2 | 150max | 150max | 150max | 150max | 150max | 150max | 150max | 150max |
| | TEMPERATURE REGULATION[mV] 0 to +55℃ | 150max | 180max | 150max | 180max | 150max | 180max | 150max | 180max |
| | DRIFT[mV] *3 | 50max | 60max | 50max | 60max | 50max | 60max | 50max | 60max |
| | START-UP TIME[ms] | 100max (Minimum input, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Internally fixed (TRM pin open), ±5% adjustable by external VR | | | | | | | |
| | OUTPUT VOLTAGE SETTING[V] | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 |
| PROTECTION CIRCUIT | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | |
| | OVERVOLTAGE PROTECTION | Works at 115 - 140% of rating (Total of +V and -V) | | | | | | | |
| | REMOTE ON/OFF | Between RC and -side of input:short - 1.2V ・・・output ON, 2.4V - 5.5V(or open) ・・・output OFF, Compatible to TTL | | | | | | | |
| ISOLATION | INPUT-OUTPUT | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE | -20 to +71℃, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | |
| | STORAGE TEMP.,HUMID.AND ALTITUDE | -40 to +85℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | |
| | VIBRATION | 10 - 55Hz, 98.0m/s² (10G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | 490.3m/s² (50G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY | AGENCY APPROVALS | UL60950-1, EN60950-1, CSA C22.2 No.60950-1 Complies with IEC60950-1 | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 45×8.5×50mm (W×H×D) / 55g max | | | | | | | |
| | COOLING METHOD | Convection | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%.
*2 Measured by 20MHz oscilloscope.
*3 The drift is a change at 25℃ of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
* The output specification is at ±12V and ±15V.
* Series/Parallel operation with other model is not possible.

## External view




note) Internal parts
※Weight: 55g or less.
※Tolerance: ± 0.5
※Case material: Aluminum

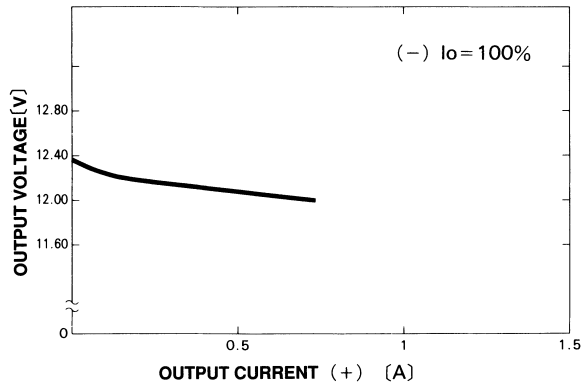



The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

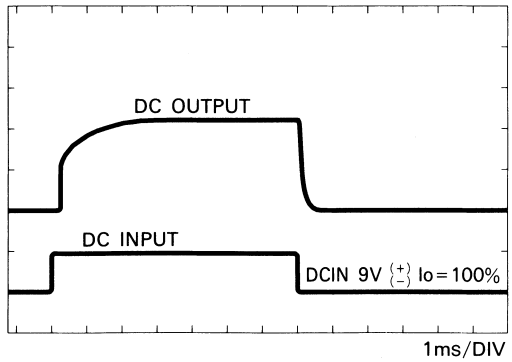
※Dimensions in mm [inch]
※Div.: 0.2inch

## Performance data

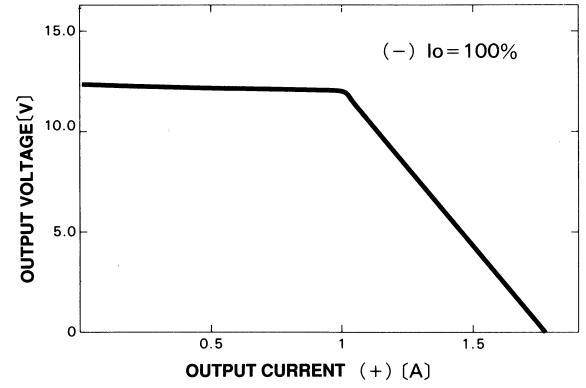
### ■STATIC CHARACTERISTICS (ZUW151212)



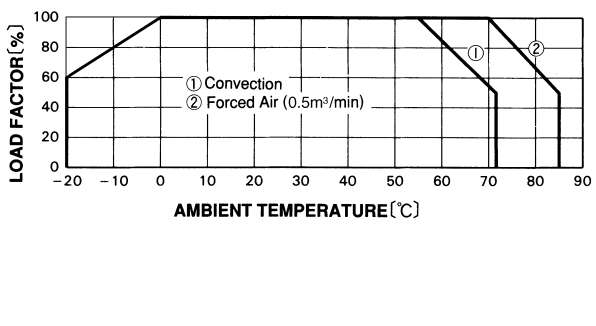

### ■RISE TIME & FALL TIME (ZUW151212:+12V)




### ■OVERCURRENT CHARACTERISTICS (ZUW151212)




### ■DERATING CURVE



COSEL DC-DC Converters PCB Mount type

# ZUW25

**Ordering information**

| ZU | W | 25 | 12 | 12 | |
|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | |

①Series name
②Dual output
③Output wattage
④Input voltage
⑤Output voltage

RoHS




| MODEL | | ZUW250512 | ZUW250515 | ZUW251212 | ZUW251215 | ZUW252412 | ZUW252415 | ZUW254812 | ZUW254815 |
|---|---|---|---|---|---|---|---|---|---|
| MAX OUTPUT WATTAGE[W] | | 20.2 | 20.1 | 25.2 | 25.5 | 25.2 | 25.5 | 25.2 | 25.5 |
| DC OUTPUT | VOLTAGE[V] | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 | ±12 or +24 | ±15 or +30 |
| | CURRENT[A] | 0.84 | 0.67 | 1.05 | 0.85 | 1.05 | 0.85 | 1.05 | 0.85 |

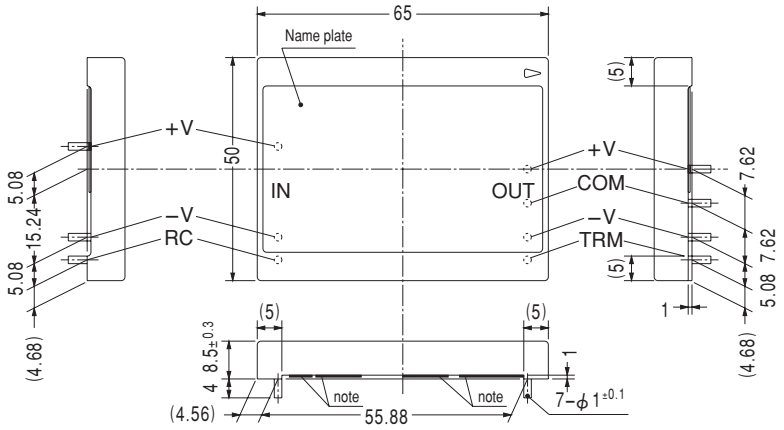
## SPECIFICATIONS

Output pins can be connected in series to make a 24V/30V output.

| | MODEL | ZUW250512 | ZUW250515 | ZUW251212 | ZUW251215 | ZUW252412 | ZUW252415 | ZUW254812 | ZUW254815 |
|---|---|---|---|---|---|---|---|---|---|
| INPUT | VOLTAGE[V] | DC4.5 - 9 | | DC9 - 18 | | DC18 - 36 | | DC36 - 75 | |
| | CURRENT[A] *1 | 4.92typ | 4.90typ | 2.47typ | 2.50typ | 1.23typ | 1.25typ | 0.62typ | 0.63typ |
| | EFFICIENCY[%] *1 | 82typ | 82typ | 85typ | 85typ | 85typ | 85typ | 85typ | 85typ |
| OUTPUT | VOLTAGE[V] | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) | ±12 (+24) | ±15 (+30) |
| | CURRENT[A] | 0.84 | 0.67 | 1.05 | 0.85 | 1.05 | 0.85 | 1.05 | 0.85 |
| | LINE REGULATION[mV] | 60max | 75max | 60max | 75max | 60max | 75max | 60max | 75max |
| | LOAD REGULATION[mV] | 600max | 750max | 600max | 750max | 600max | 750max | 600max | 750max |
| | RIPPLE[mVp-p] *2 | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] *2 | 150max | 150max | 150max | 150max | 150max | 150max | 150max | 150max |
| | TEMPERATURE REGULATION[mV] 0 to +55℃ | 150max | 180max | 150max | 180max | 150max | 180max | 150max | 180max |
| | DRIFT[mV] *3 | 50max | 60max | 50max | 60max | 50max | 60max | 50max | 60max |
| | START-UP TIME[ms] | 100max (Minimum input, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Internally fixed (TRM pin open), ±5% adjustable by external VR | | | | | | | |
| | OUTPUT VOLTAGE SETTING[V] | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 | 11.40 - 12.60 | 14.25 - 15.75 |
| PROTECTION CIRCUIT | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | |
| | OVERVOLTAGE PROTECTION | Works at 115 - 140% of rating (Total of +V and -V) | | | | | | | |
| | REMOTE ON/OFF | Between RC and -side of input:short - 1.2V ・・・output ON, 2.4V - 5.5V(or open) ・・・output OFF, Compatible to TTL | | | | | | | |
| ISOLATION | INPUT-OUTPUT | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃) | | | | | | | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE | -20 to +71℃, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | |
| | STORAGE TEMP.,HUMID.AND ALTITUDE | -40 to +85℃, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | |
| | VIBRATION | 10 - 55Hz, 98.0m/s² (10G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | 490.3m/s² (50G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY | AGENCY APPROVALS | UL60950-1, EN60950-1, CSA C22.2 No.60950-1 Complies with IEC60950-1 | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 65×8.5×50mm (W×H×D) / 65g max | | | | | | | |
| | COOLING METHOD | Convection | | | | | | | |

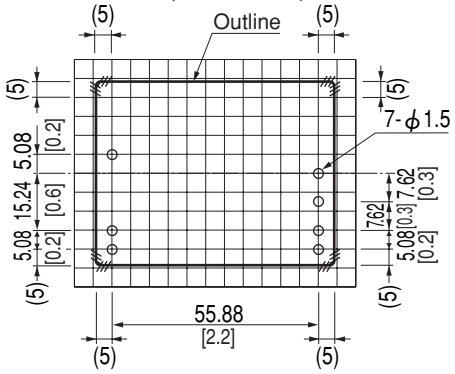
*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%.
*2 Measured by 20MHz oscilloscope.
*3 The drift is a change at 25℃ of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
* The output specification is at ±12V and ±15V.
* Series/Parallel operation with other model is not possible.

## External view




note) Internal parts
※Weight: 65g or less.
※Tolerance: ± 0.5
※Case material: Aluminum

※Recomended size for processing PCB (TOP VIEW)

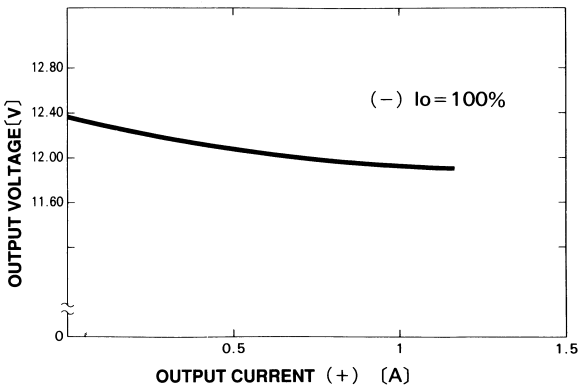



The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

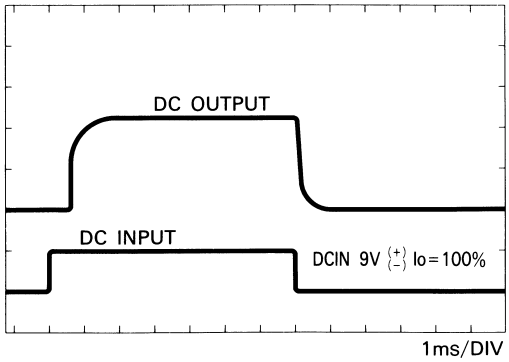
※Dimensions in mm [inch]
※Div.: 0.2inch

## Performance data

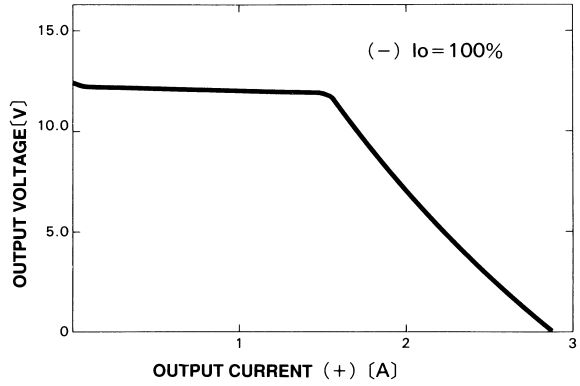
### ■STATIC CHARACTERISTICS (ZUW251212)




### ■RISE TIME & FALL TIME (ZUW251212:+12V)




### ■OVERCURRENT CHARACTERISTICS (ZUW251212)




### ■DERATING CURVE

