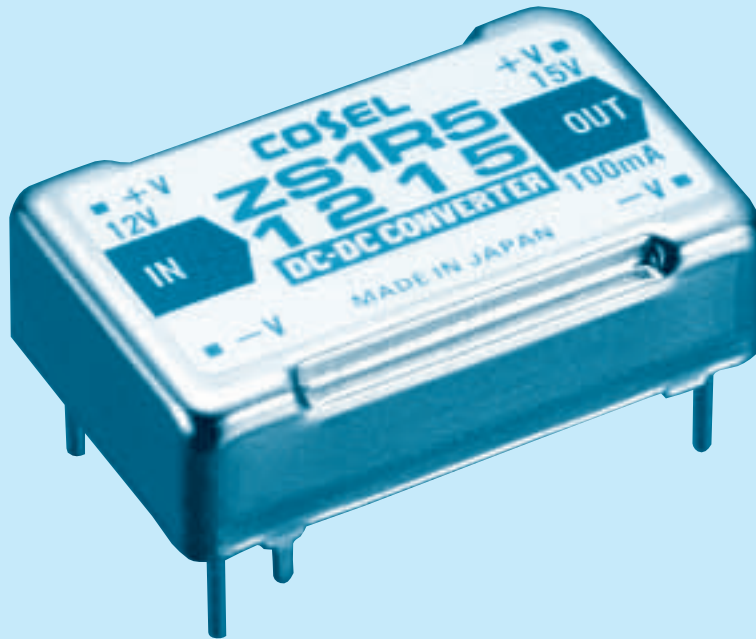


- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
- ⑤ Output voltage

RoHS



| MODEL | ZS1R50505 | ZS1R50512 | ZS1R50515 | ZS1R51205 | ZS1R51212 | ZS1R51215 | ZS1R52405 | ZS1R52412 | ZS1R52415 | ZS1R54805 | ZS1R54812 | ZS1R54815 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 1.25 | 1.44 | 1.5 | 1.25 | 1.44 | 1.5 | 1.25 | 1.44 | 1.5 | 1.25 | 1.44 | 1.5 |
| DC OUTPUT | 5V 0.25A | 12V 0.12A | 15V 0.1A | 5V 0.25A | 12V 0.12A | 15V 0.1A | 5V 0.25A | 12V 0.12A | 15V 0.1A | 5V 0.25A | 12V 0.12A | 15V 0.1A |

SPECIFICATIONS

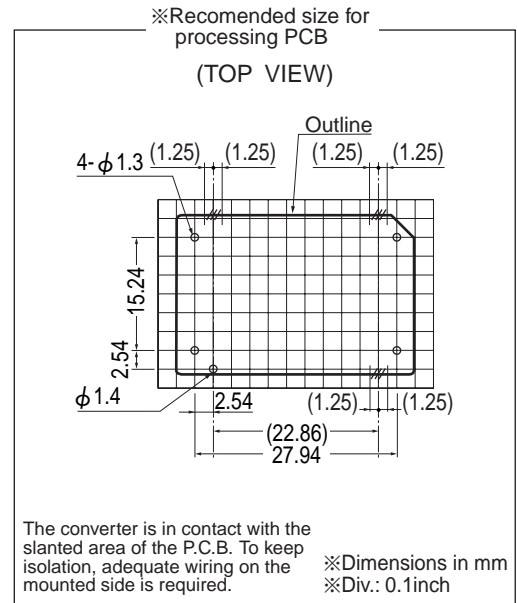
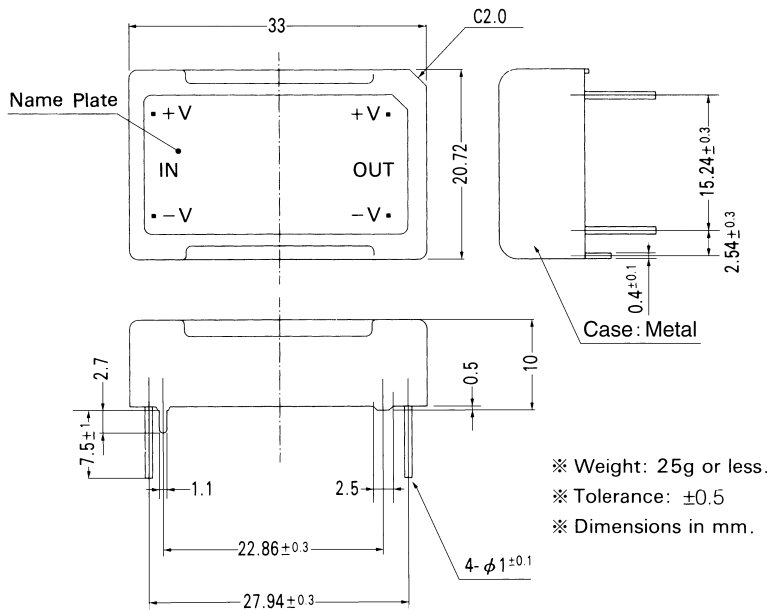
| | MODEL | ZS1R50505 | ZS1R50512 | ZS1R50515 | ZS1R51205 | ZS1R51212 | ZS1R51215 | ZS1R52405 | ZS1R52412 | ZS1R52415 | ZS1R54805 | ZS1R54812 | ZS1R54815 | |
|---------------------------|---|--|--|-----------|--------------|-----------|-----------|--------------|-----------|-----------|--------------|-----------|-----------|--|
| Z INPUT | VOLTAGE[V] | 5 (4.5 - 6.0) | | | 12 (10 - 15) | | | 24 (20 - 30) | | | 48 (35 - 63) | | | |
| | CURRENT[A] | *1 0.420typ | 0.480typ | 0.500typ | 0.158typ | 0.183typ | 0.192typ | 0.079typ | 0.092typ | 0.096typ | 0.040typ | 0.046typ | 0.048typ | |
| | EFFICIENCY[%] | 60typ | 60typ | 60typ | 65typ | 65typ | 65typ | 65typ | 65typ | 65typ | 65typ | 65typ | 65typ | |
| | | | | | | | | | | | | | | |
| OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 | |
| | CURRENT[A] | 0.25 | 0.12 | 0.1 | 0.25 | 0.12 | 0.1 | 0.25 | 0.12 | 0.1 | 0.25 | 0.12 | 0.1 | |
| | LINE REGULATION[mV] | 25max | 60max | 75max | 25max | 60max | 75max | 25max | 60max | 75max | 25max | 60max | 75max | |
| | LOAD REGULATION[mV] | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | |
| | RIPPLE[mVp-p] | *2 100max | 120max | 120max | 100max | 120max | 120max | 100max | 120max | 120max | 100max | 120max | 120max | |
| | RIPPLE NOISE[mVp-p] | *2 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | |
| | TEMPERATURE REGULATION[mV] 0 to +50°C | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed | | | | | | | | | | | | |
| OUTPUT VOLTAGE SETTING[%] | ±5max (Rated input/output, Ta=25°C) | | | | | | | | | | | | | |
| 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°C) | | | | | | | | | | | |
| | | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C) | | | | | | | | | | | |
| OUTPUT-CASE | | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C) | | | | | | | | | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | | | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | | | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 30minutes each along X, Y and Z axis | | | | | | | | | | | | |
| | IMPACT | 490.3m/s ² (50G), 11ms, once each X, Y and Z axis | | | | | | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%

*2 Measured by 20MHz oscilloscope.

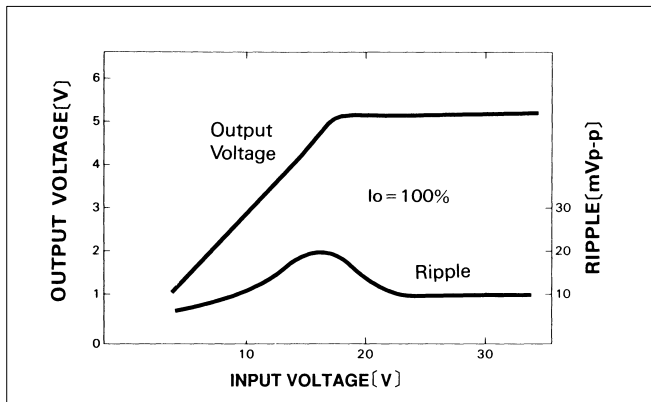
* Parallel operation with other model is not possible.

External view

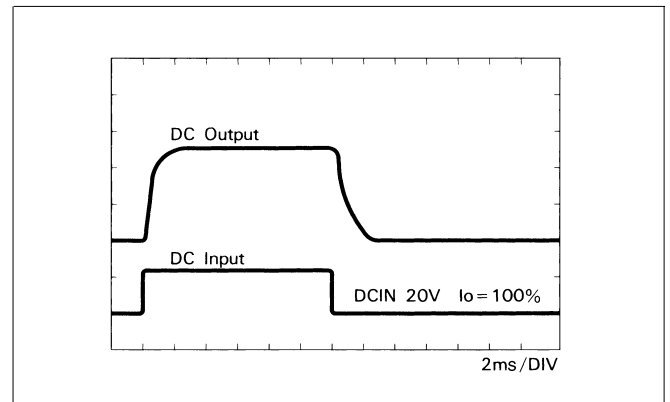


Performance data

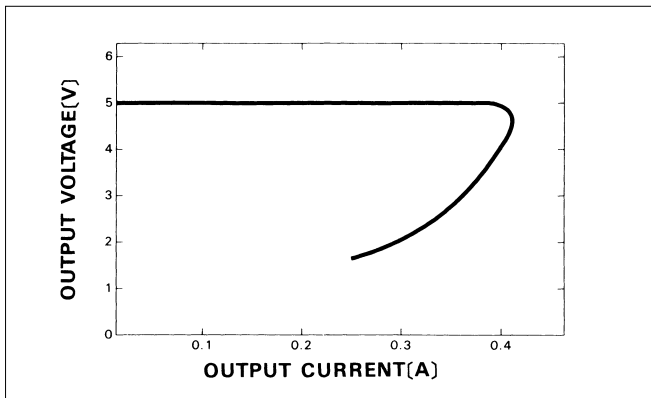
■ STATIC CHARACTERISTICS (ZS1R52405)



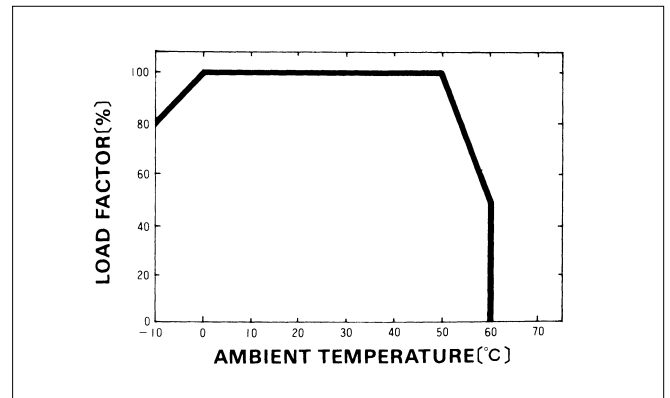
■ RISE TIME & FALL TIME (ZS1R52405)



■ OVERCURRENT CHARACTERISTICS (ZS1R52405)



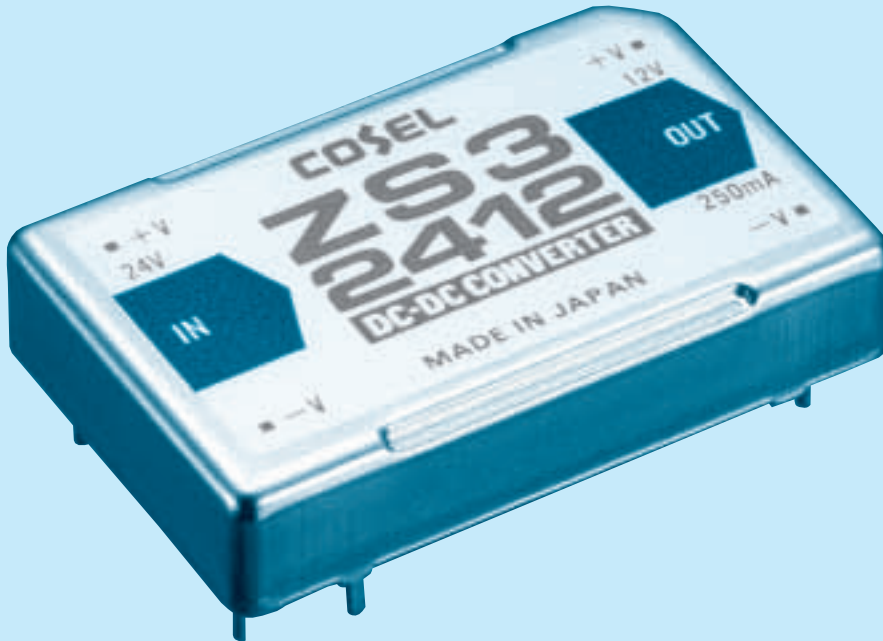
■ DERATING CURVE



Z

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

RoHS



| MODEL | ZS30505 | ZS30512 | ZS30515 | ZS31205 | ZS31212 | ZS31215 | ZS32405 | ZS32412 | ZS32415 | ZS34805 | ZS34812 | ZS34815 |
|-----------------------|---------|-----------|----------|---------|-----------|----------|---------|-----------|----------|---------|-----------|----------|
| MAX OUTPUT WATTAGE[W] | 2.5 | 3.0 | 3.0 | 2.5 | 3.0 | 3.0 | 2.5 | 3.0 | 3.0 | 2.5 | 3.0 | 3.0 |
| DC OUTPUT | 5V 0.5A | 12V 0.25A | 15V 0.2A | 5V 0.5A | 12V 0.25A | 15V 0.2A | 5V 0.5A | 12V 0.25A | 15V 0.2A | 5V 0.5A | 12V 0.25A | 15V 0.2A |

SPECIFICATIONS

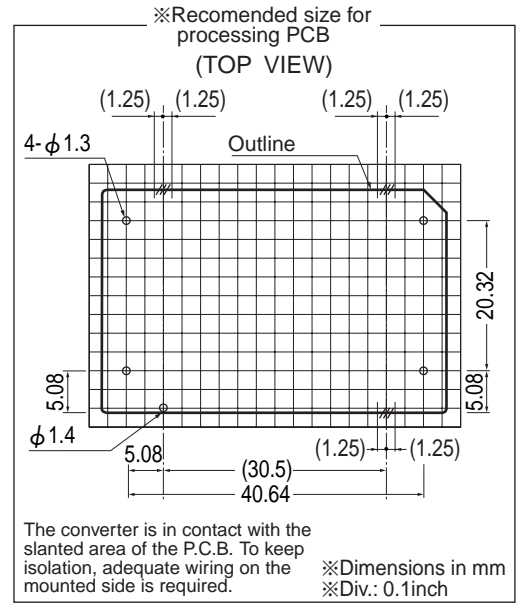
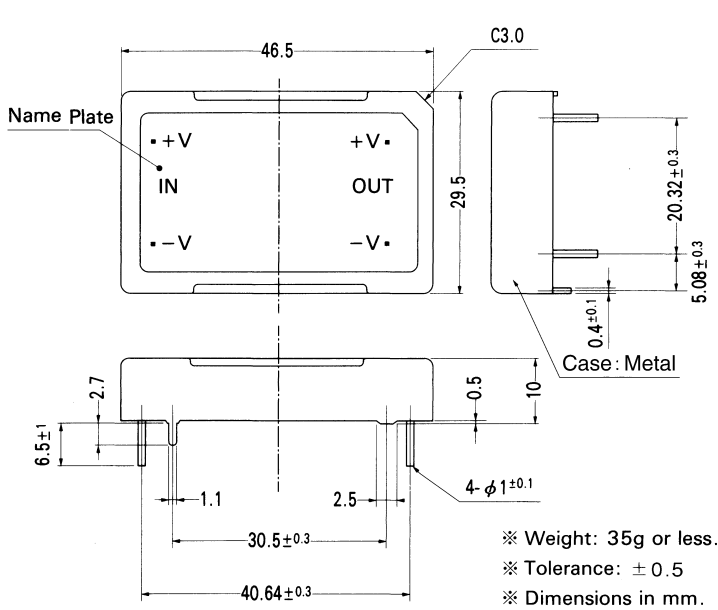
| | MODEL | ZS30505 | ZS30512 | ZS30515 | ZS31205 | ZS31212 | ZS31215 | ZS32405 | ZS32412 | ZS32415 | ZS34805 | ZS34812 | ZS34815 |
|--------------------|---|--|----------|----------|--------------|----------|----------|--------------|----------|----------|--------------|----------|----------|
| INPUT | VOLTAGE[V] | 5 (4.5 - 6.0) | | | 12 (10 - 15) | | | 24 (20 - 30) | | | 48 (35 - 63) | | |
| | CURRENT[A] | *1 0.760typ | 0.920typ | 0.920typ | 0.317typ | 0.358typ | 0.358typ | 0.150typ | 0.171typ | 0.171typ | 0.075typ | 0.090typ | 0.090typ |
| | EFFICIENCY[%] | 65typ | 65typ | 65typ | 65typ | 70typ | 70typ | 70typ | 74typ | 74typ | 70typ | 70typ | 70typ |
| | VOLTAGE[V] | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 |
| OUTPUT | CURRENT[A] | 0.5 | 0.25 | 0.2 | 0.5 | 0.25 | 0.2 | 0.5 | 0.25 | 0.2 | 0.5 | 0.25 | 0.2 |
| | LINE REGULATION[mV] | 25max | 60max | 75max | 25max | 60max | 75max | 25max | 60max | 75max | 25max | 60max | 75max |
| | LOAD REGULATION[mV] | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max |
| | RIPPLE[mVp-p] | *2 100max | 120max | 120max | 100max | 120max | 120max | 100max | 120max | 120max | 100max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] | *2 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | TEMPERATURE REGULATION[mV] 0 to +50°C | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed | | | | | | | | | | | |
| | OUTPUT VOLTAGE SETTING[%] | ±5max (Rated input/output, Ta=25°C) | | | | | | | | | | | |
| 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°C) | | | | | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C) | | | | | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C) | | | | | | | | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 30minutes each along X, Y and Z axis | | | | | | | | | | | |
| | IMPACT | 490.3m/s ² (50G), 11ms, once each X, Y and Z axis | | | | | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%

*2 Measured by 20MHz oscilloscope.

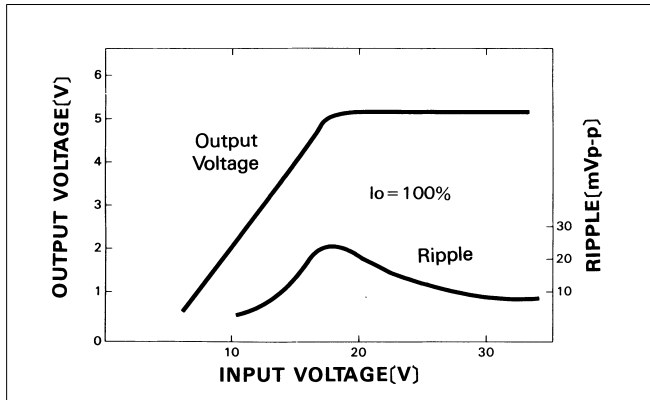
* Parallel operation with other model is not possible.

External view

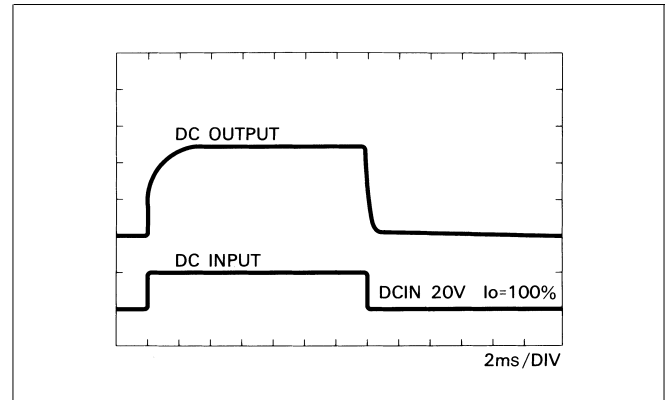


Performance data

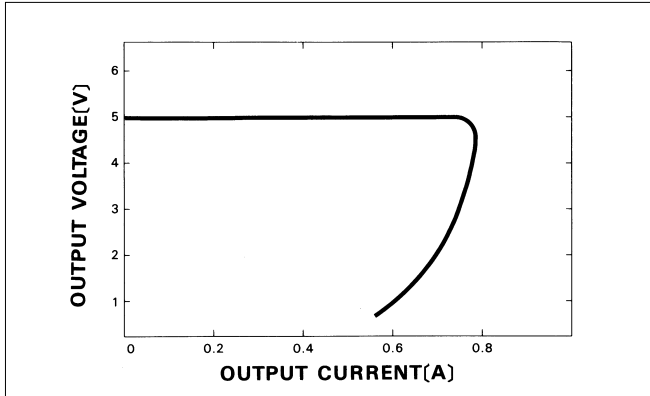
■ STATIC CHARACTERISTICS (ZS32405)



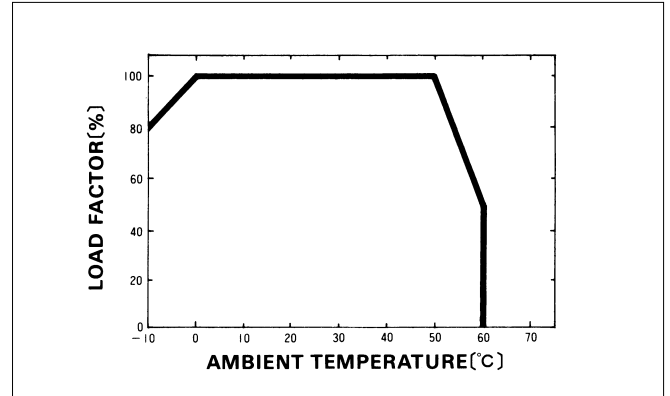
■ RISE TIME & FALL TIME (ZS32405)



■ OVERCURRENT CHARACTERISTICS (ZS32405)



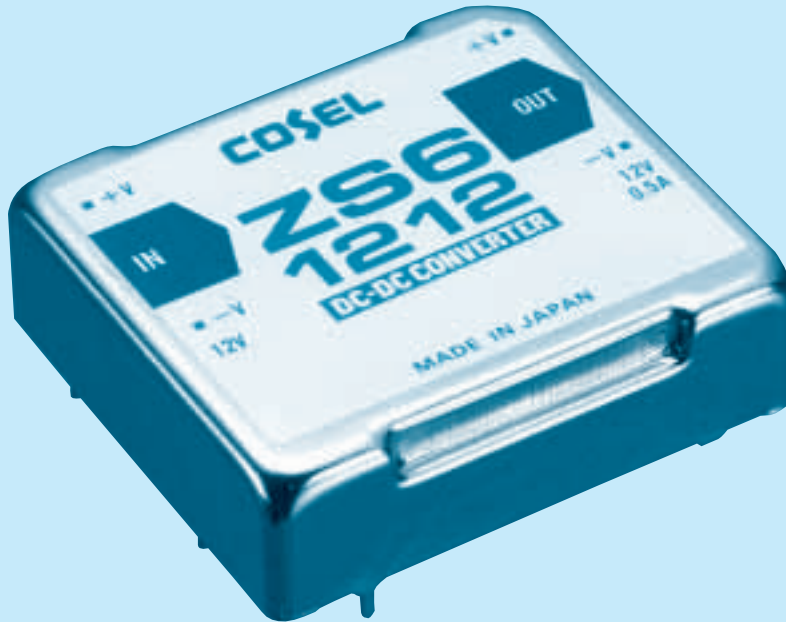
■ DERATING CURVE



Z

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

RoHS



| MODEL | ZS60505 | ZS60512 | ZS60515 | ZS61205 | ZS61212 | ZS61215 | ZS62405 | ZS62412 | ZS62415 | ZS64805 | ZS64812 | ZS64815 |
|-----------------------|---------|----------|----------|---------|----------|----------|---------|----------|----------|---------|----------|----------|
| MAX OUTPUT WATTAGE[W] | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| DC OUTPUT | 5V 1.0A | 12V 0.5A | 15V 0.4A | 5V 1.0A | 12V 0.5A | 15V 0.4A | 5V 1.0A | 12V 0.5A | 15V 0.4A | 5V 1.0A | 12V 0.5A | 15V 0.4A |

SPECIFICATIONS

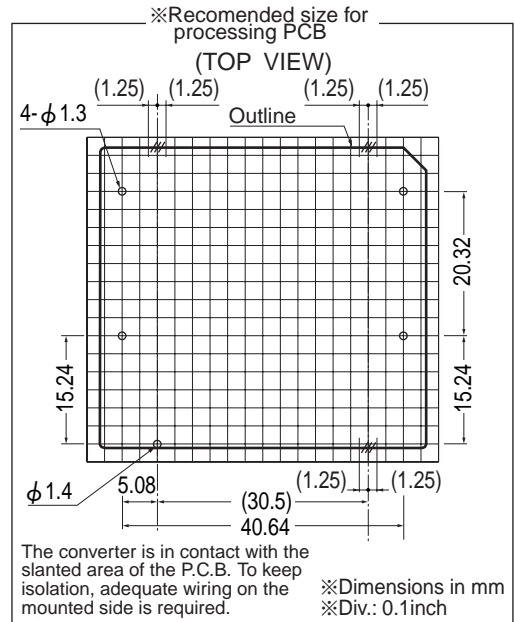
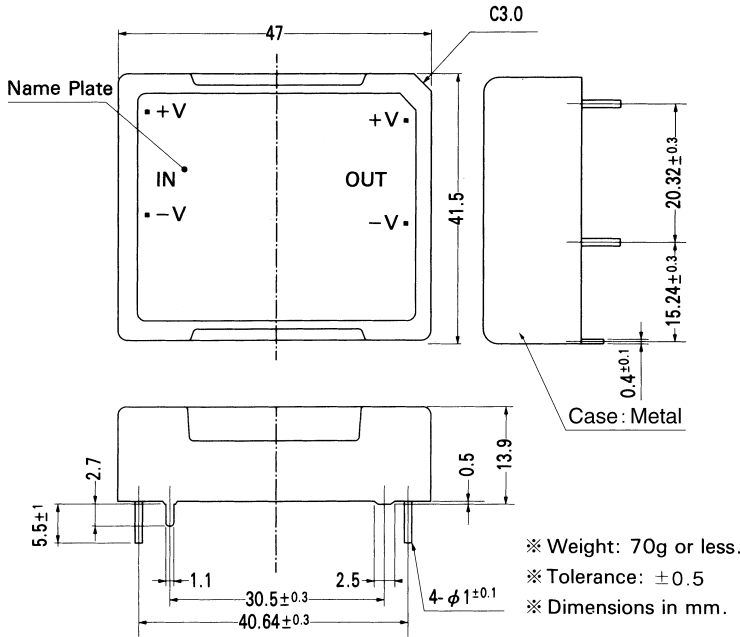
| | MODEL | ZS60505 | ZS60512 | ZS60515 | ZS61205 | ZS61212 | ZS61215 | ZS62405 | ZS62412 | ZS62415 | ZS64805 | ZS64812 | ZS64815 |
|---------------------------|---|--|----------|----------|--------------|----------|----------|--------------|----------|----------|--------------|----------|----------|
| Z INPUT | VOLTAGE[V] | 5 (4.5 - 6.0) | | | 12 (10 - 15) | | | 24 (20 - 30) | | | 48 (35 - 63) | | |
| | CURRENT[A] | *1 1.540typ | 1.840typ | 1.840typ | 0.617typ | 0.717typ | 0.717typ | 0.296typ | 0.338typ | 0.338typ | 0.148typ | 0.179typ | 0.179typ |
| | EFFICIENCY[%] | 65typ | 65typ | 65typ | 68typ | 70typ | 70typ | 70typ | 74typ | 74typ | 70typ | 70typ | 70typ |
| | | | | | | | | | | | | | |
| OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 |
| | CURRENT[A] | 1 | 0.5 | 0.4 | 1 | 0.5 | 0.4 | 1 | 0.5 | 0.4 | 1 | 0.5 | 0.4 |
| | LINE REGULATION[mV] | 25max | 60max | 75max | 25max | 60max | 75max | 25max | 60max | 75max | 25max | 60max | 75max |
| | LOAD REGULATION[mV] | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max |
| | RIPPLE[mVp-p] | *2 100max | 120max | 120max | 100max | 120max | 120max | 100max | 120max | 120max | 100max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] | *2 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | TEMPERATURE REGULATION[mV] 0 to +50°C | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed | | | | | | | | | | | |
| OUTPUT VOLTAGE SETTING[%] | ±5max (Rated input/output, Ta=25°C) | | | | | | | | | | | | |
| 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°C) | | | | | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C) | | | | | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C) | | | | | | | | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 30minutes each along X, Y and Z axis | | | | | | | | | | | |
| | IMPACT | 490.3m/s ² (50G), 11ms, once each X, Y and Z axis | | | | | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%

*2 Measured by 20MHz oscilloscope.

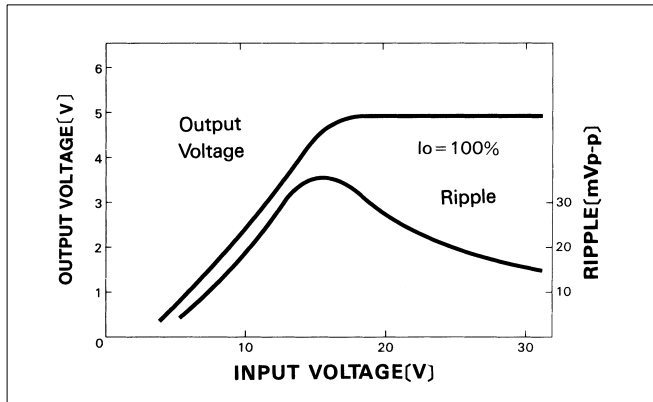
* Parallel operation with other model is not possible.

External view

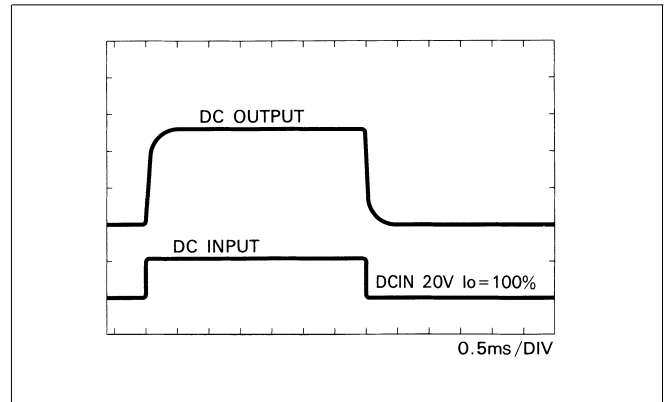


Performance data

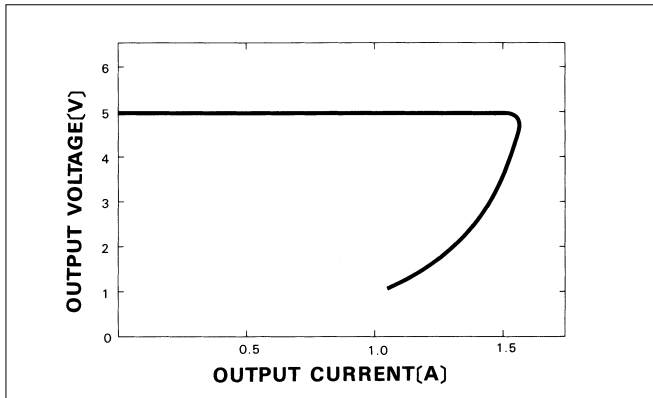
■ STATIC CHARACTERISTICS (ZS62405)



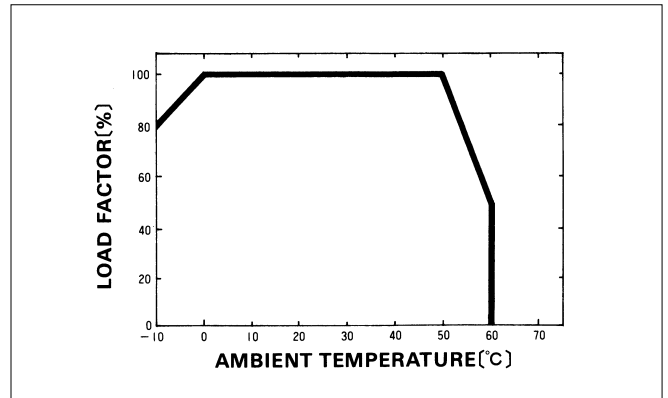
■ RISE TIME & FALL TIME (ZS62405)



■ OVERCURRENT CHARACTERISTICS (ZS62405)



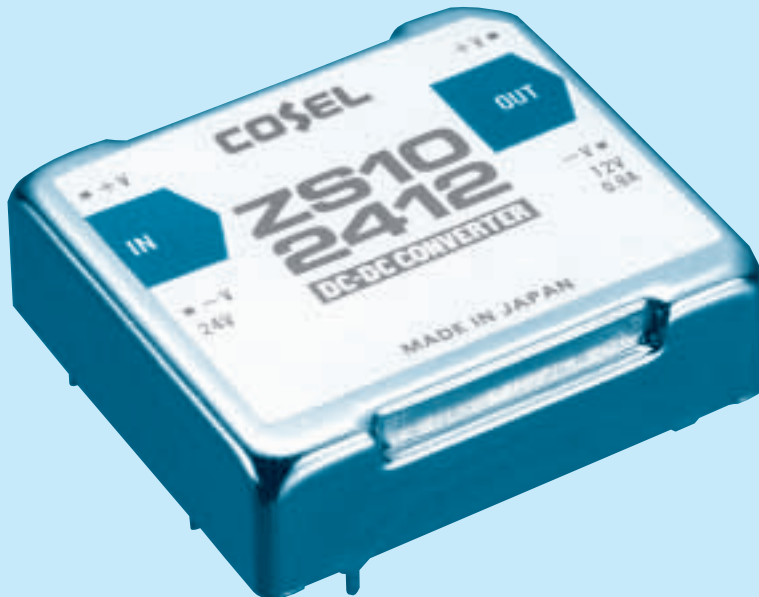
■ DERATING CURVE



Z

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

RoHS



| MODEL | ZS100505 | ZS100512 | ZS100515 | ZS101205 | ZS101212 | ZS101215 | ZS102405 | ZS102412 | ZS102415 | ZS104805 | ZS104812 | ZS104815 |
|-----------------------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| MAX OUTPUT WATTAGE[W] | 8.0 | 8.4 | 9.0 | 10.0 | 10.8 | 10.5 | 10.0 | 10.8 | 10.5 | 10.0 | 10.8 | 10.5 |
| DC OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 |
| | CURRENT[A] | 1.6 | 0.7 | 0.6 | 2.0 | 0.9 | 0.7 | 2.0 | 0.9 | 0.7 | 2.0 | 0.9 |

SPECIFICATIONS

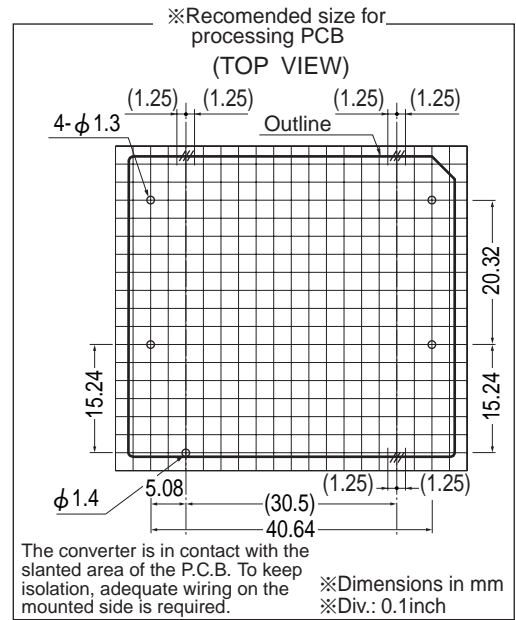
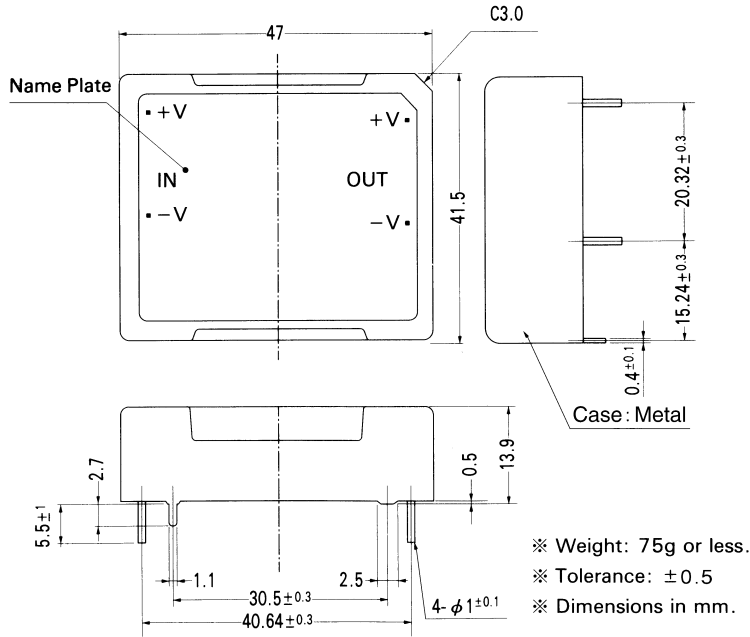
| | MODEL | ZS100505 | ZS100512 | ZS100515 | ZS101205 | ZS101212 | ZS101215 | ZS102405 | ZS102412 | ZS102415 | ZS104805 | ZS104812 | ZS104815 |
|---------------------------|---------------------------------------|--|----------|----------|--------------|----------|----------|--------------|----------|----------|--------------|----------|----------|
| Z INPUT | VOLTAGE[V] | 5 (4.5 - 6.0) | | | 12 (10 - 15) | | | 24 (20 - 30) | | | 48 (35 - 63) | | |
| | CURRENT[A] | *1 2.220typ | 2.340typ | 2.500typ | 1.042typ | 1.125typ | 1.092typ | 0.521typ | 0.563typ | 0.546typ | 0.260typ | 0.281typ | 0.273typ |
| | EFFICIENCY[%] | 72typ | 72typ | 72typ | 80typ | 80typ | 80typ | 80typ | 80typ | 80typ | 80typ | 80typ | 80typ |
| | | | | | | | | | | | | | |
| OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 | 5 | 12 | 15 |
| | CURRENT[A] | 1.6 | 0.7 | 0.6 | 2.0 | 0.9 | 0.7 | 2.0 | 0.9 | 0.7 | 2.0 | 0.9 | 0.7 |
| | LINE REGULATION[mV] | 25max | 60max | 75max | 25max | 60max | 75max | 25max | 60max | 75max | 25max | 60max | 75max |
| | LOAD REGULATION[mV] | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max |
| | RIPPLE[mVp-p] | *2 100max | 120max | 120max | 100max | 120max | 120max | 100max | 120max | 120max | 100max | 120max | 120max |
| | RIPPLE NOISE[mVp-p] | *2 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max | 120max |
| | TEMPERATURE REGULATION[mV] 0 to +55°C | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max | 50max | 120max | 150max |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed | | | | | | | | | | | |
| OUTPUT VOLTAGE SETTING[%] | ±5max (Rated input/output, Ta=25°C) | | | | | | | | | | | | |
| 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°C) | | | | | | | | | | | |
| | INPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C) | | | | | | | | | | | |
| | OUTPUT-CASE | AC500V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C) | | | | | | | | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +70°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max | | | | | | | | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max | | | | | | | | | | | |
| | VIBRATION | 10 - 55Hz, 98.0m/s ² (10G), 3minutes period, 30minutes each along X, Y and Z axis | | | | | | | | | | | |
| | IMPACT | 490.3m/s ² (50G), 11ms, once each X, Y and Z axis | | | | | | | | | | | |

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%

*2 Measured by 20MHz oscilloscope.

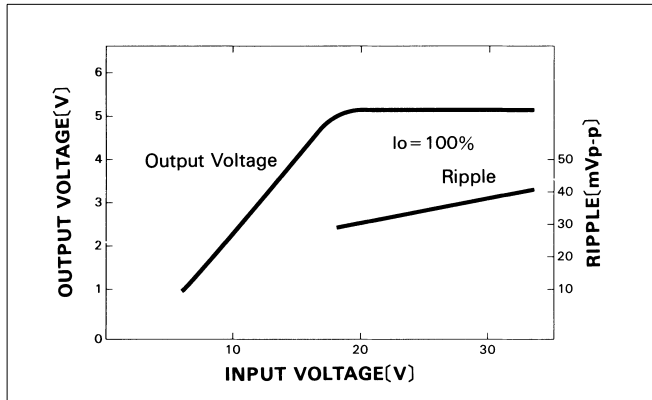
* Parallel operation with other model is not possible.

External view

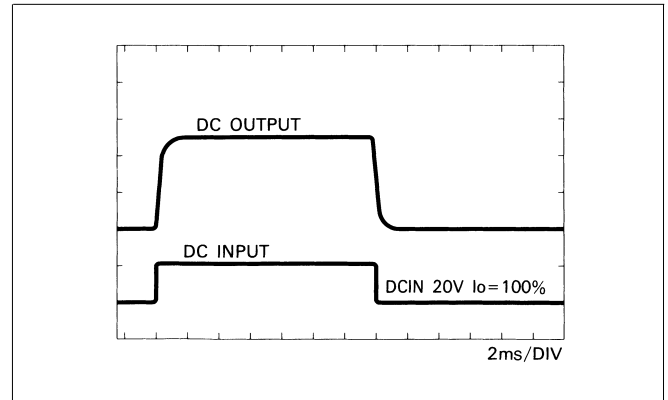


Performance data

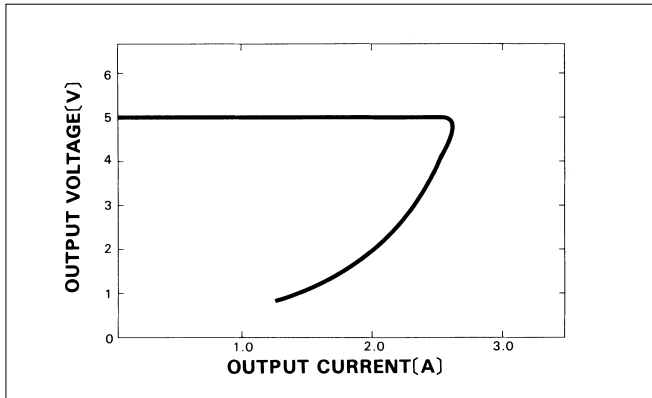
■STATIC CHARACTERISTICS (ZS102405)



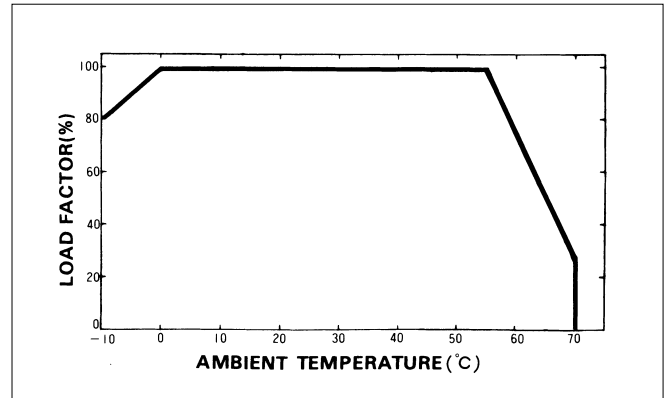
■RISE TIME & FALL TIME (ZS102405)



■OVERCURRENT CHARACTERISTICS (ZS102405)



■DERATING CURVE



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