



■ Features

- SMD package with industry standard pinout
- Operating temperature range -40 ~ +100°C
- Comply to EN55032 radiated Class A without additional components
- High efficiency up to 83%
- Protection: Short circuit
- 3KVDC I/O isolation
- Low cost
- Optional reel packing
- 3 years warranty

■ Applications

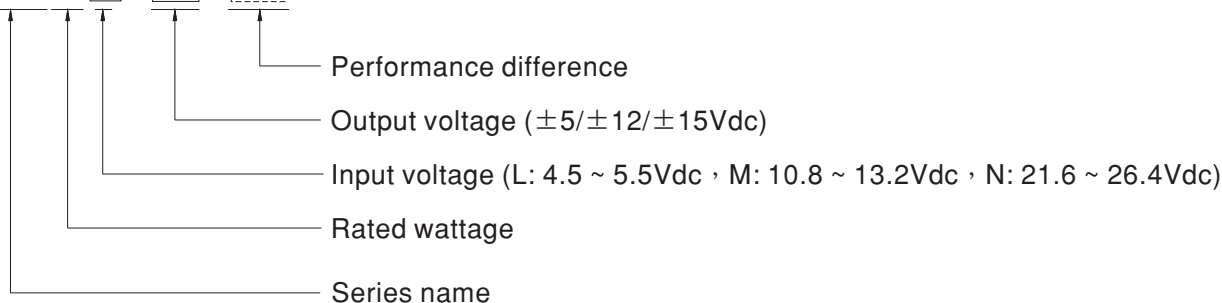
- Telecom/datacom system
- Wireless network
- Industrial control facility
- Instrument
- Analyzer
- Detector
- Data switch

■ Description

DETNO2 series is 2W isolated and unregulated module type DC-DC converter with SMD package. It features international standard pins, a high efficiency up to 83%, wide working temperature range -40~+100°C, 3KVDC I/P-O/P isolation voltage, compliance to EN55032 radiated Class A without additional components, short circuit protection, etc. The models account for different input voltage 5V/12V/24V±10%, and various output voltage, ±5V/±12V/±15V for Dual output which are suitable for all kinds of systems, Such as industrial control, telecommunication field, distributed power architecture, and so on.

■ Model Encoding

DETNO2**L** - **12** - **SC**



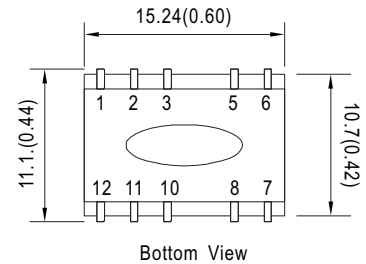
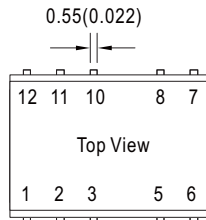
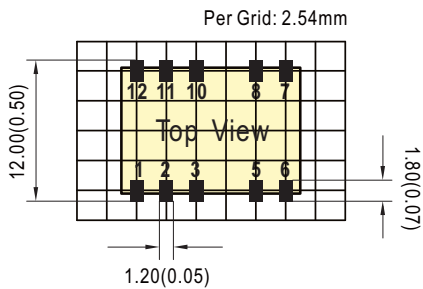
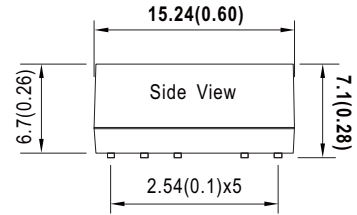
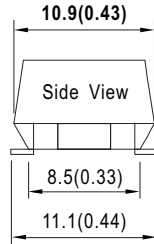
| Type | Description | Note |
|-------|----------------------------------------------------------------------|----------|
| Blank | -40~+100°C working temperature with max. 0.5 second short protection | In Stock |
| SC | -40~+105°C working temperature with continuous short protection | Optional |

| MODEL SELECTION TABLE | | | | | | | |
|-----------------------|------------------------------|---------------|-----------|----------------|----------------|-------------------|-----------------------|
| ORDER NO. | INPUT | | | OUTPUT | | EFFICIENCY (TYP.) | CAPACITOR LOAD (MAX.) |
| | INPUT VOLTAGE (RANGE) | INPUT CURRENT | | OUTPUT VOLTAGE | OUTPUT CURRENT | | |
| | | NO LOAD | FULL LOAD | | | | |
| DETN02L-05 | Normal 5V (4.5 ~ 5.5V) | 60mA | 513mA | ±5V | ±20 ~ 200mA | 78% | 220μF |
| DETN02L-12 | | 60mA | 500mA | ±12V | ±8 ~ 84mA | 80% | 220μF |
| DETN02L-15 | | 60mA | 494mA | ±15V | ±6 ~ 67mA | 81% | 220μF |
| DETN02M-05 | Normal 12V (10.8 ~ 13.2V) | 30mA | 208mA | ±5V | ±20 ~ 200mA | 80% | 220μF |
| DETN02M-12 | | 30mA | 203mA | ±12V | ±8 ~ 84mA | 82% | 220μF |
| DETN02M-15 | | 30mA | 200mA | ±15V | ±6 ~ 67mA | 83% | 220μF |
| DETN02N-05 | Normal 24V (21.6 ~ 26.4V) | 15mA | 107mA | ±5V | ±20 ~ 200mA | 78% | 220μF |
| DETN02N-12 | | 15mA | 104mA | ±12V | ±8 ~ 84mA | 80% | 220μF |
| DETN02N-15 | | 15mA | 104mA | ±15V | ±6 ~ 67mA | 80% | 220μF |

| SPECIFICATION | | | | |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------|
| INPUT | VOLTAGE RANGE | L: 4.5 ~ 5.5Vdc M: 10.8 ~ 13.2Vdc N: 21.6 ~ 26.4Vdc | | |
| | SURGE VOLTAGE (100ms max.) | 5Vin models : 9Vdc 12Vin models : 16Vdc 24Vin models : 30Vdc | | |
| | FILTER | Internal capacitor | | |
| | PROTECTION | Fuse recommended. 5Vin models: 800mA Slow-Blow Type 12Vin models: 300mA Slow-Blow Type 24Vin models: 170mA Slow-Blow Type | | |
| | INTERNAL POWER DISSIPATION | 500mW | | |
| OUTPUT | VOLTAGE ACCURACY | ±2.0% | | |
| | RATED POWER | 2W | | |
| | RIPPLE & NOISE <small>Note.2</small> | 75mVp-p | | |
| | LINE REGULATION <small>Note.3</small> | 1.2% for 1% input variation | | |
| | LOAD REGULATION <small>Note.4</small> | ±8% | | |
| | SWITCHING FREQUENCY (Typ.) | 100KHz | | |
| PROTECTION | SHORT CIRCUIT | Standard model: 0.5 second max. Optional models (SC-suffix): Continuous | | |
| ENVIRONMENT | COOLING | Free-air convection | | |
| | WORKING TEMP. | Standard model: -40 ~ +100°C (Refer to "Derating Curve") ; Optional models (SC-suffix): -40 ~ +105°C | | |
| | CASE TEMPERATURE | +105°C max. | | |
| | WORKING HUMIDITY | 20% ~ 90% RH non-condensing | | |
| | STORAGE TEMP., HUMIDITY | -55 ~ +125°C, 10 ~ 95% RH non-condensing | | |
| | TEMP. COEFFICIENT | 0.03% / °C (0 ~ 90°C) | | |
| | SOLDERING TEMPERATURE | 1.5mm from case of 1 ~ 10sec./240°C max. | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | |
| SAFETY & EMC (<small>Note.5,6</small>) | SAFETY STANDARDS | EAC TP TC 004 approved | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3KVDC | | |
| | ISOLATION RESISTANCE | I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH | | |
| | ISOLATION CAPACITANCE (Typ.) | 80pF | | |
| | EMC EMISSION | Parameter | Standard | Test Level / Note(<small>Note.6</small>) |
| | | Conducted | EN55032(CISPR32) | N/A |
| | | Radiated | EN55032(CISPR32) | Class A |
| | EMC IMMUNITY | Parameter | Standard | Test Level / Note |
| | | ESD | EN61000-4-2 | Level 3, ±8KV air, Level 2±4KV contact |
| | | Radiated Susceptibility | EN61000-4-3 | Level 2, 3V/m |
| | | EFT/Burest | EN61000-4-4 | Level 1, 0.5KV at power |
| | | Surge | EN61000-4-5 | Level 2, 0.5KV Line-Line |
| | | Conducted | EN61000-4-6 | Level 2, 3V(e.m.f.) |
| Magnetic Field | | EN61000-4-8 | Level 1, 1A/m | |
| OTHERS | MTBF | 888Khrs min. MIL-HDBK-217F(25°C) | | |
| | DIMENSION (L*W*H) | 15.24*10.9*7.1mm (0.6*0.43*0.28 inch) | | |
| | CASE MATERIAL | Non-Conductive black plastic (UL 94V-0 rated) | | |
| | PACKING | 1.2g | | |
| NOTE | <p>1.All parameters are specified at normal input(L:5Vdc, M:12Vdc, N:24Vdc), rated load, 25°C 70% RH ambient. 2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf & 47µf capacitor. 3.Line regulation is measured from low line to high line at rated load. 4.Load regulation is measured from 10% to 100% rated load. 5.The final equipment must be re-confirm that it still meet EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." 6.An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5. The filter capacitor Power Mate suggest: 470µF/100V.</p> | | | |

Mechanical Specification

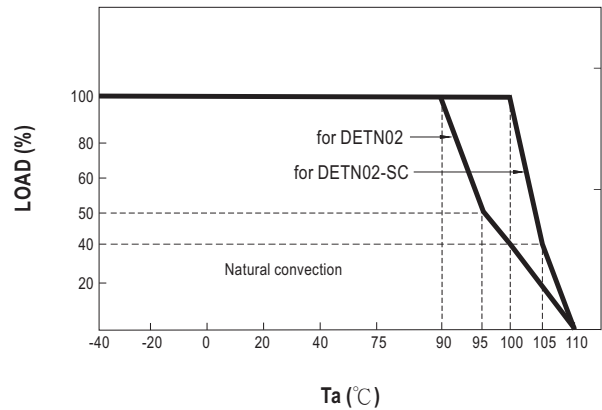
- All dimensions in mm(inch)
- Tolerance: $x.xx \pm 0.5mm(x.xx \pm 0.02")$
 $x.xx \pm 0.25mm(x.xxx \pm 0.01")$
- Pin size is $0.50 \times 0.30mm(0.02" \times 0.01")$
- Pin is Tolerance: $x.xx \pm 0.07mm(x.xxx \pm 0.03")$



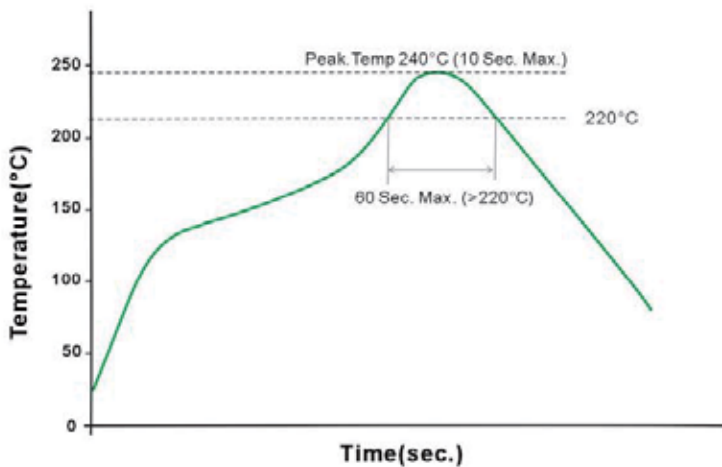
Plug Assignment

| Pin No. | Pin-Out |
|--------------|---------|
| 1 | -Vin |
| 2 | +Vin |
| 5 | Common |
| 6 | -Vout |
| 8 | +Vout |
| 3,7,10,11,12 | N.C. |

Derating Curve

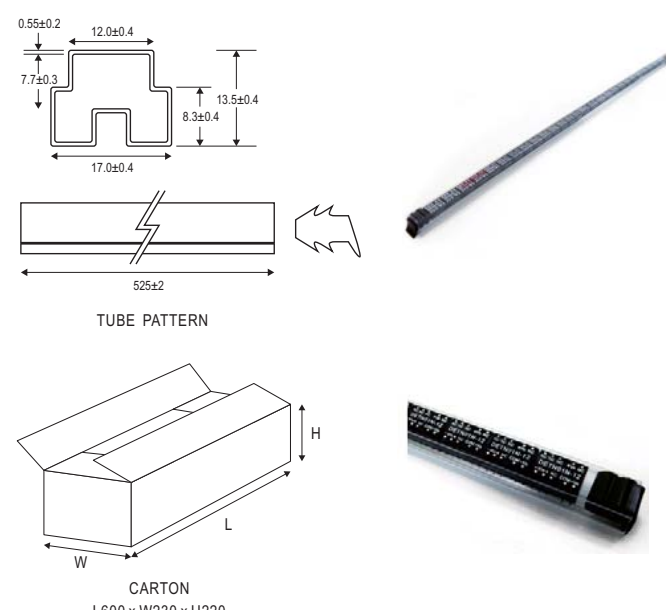
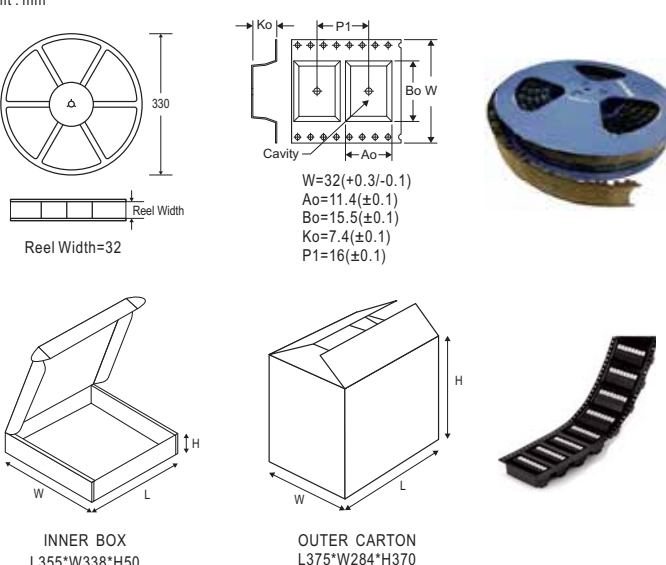


Reflow Soldering Curve



Remark: The curve applies only to the hot air reflow soldering.

■ Packing

| Standard Tube Packing | MPQ Per Tube (PCS) | One Box G.W. | Max. Q'TY/ Carton(PCS) | One Carton G.W. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------|------------------------|-----------------|
| <p>Unit : mm</p>  <p>TUBE PATTERN</p> <p>CARTON L600 x W230 x H220</p> | 32 | 0.061Kg | 3840 | 8.12Kg |
| Optional Reel Packing | MPQ Per Tube (PCS) | One Box G.W. | Max. Q'TY/ Carton(PCS) | One Carton G.W. |
| <p>Unit : mm</p>  <p>Reel Width=32</p> <p>W=32(+0.3/-0.1) Ao=11.4(±0.1) Bo=15.5(±0.1) Ko=7.4(±0.1) P1=16(±0.1)</p> <p>INNER BOX L355*W338*H50</p> <p>OUTER CARTON L375*W284*H370</p> | 500 | 1.3Kg | 2500 | 7.3Kg |