



## Features

- SMD package with industry standard pinout
- Operating temperature range -40 ~ +85°C
- High efficiency up to 83%
- 3KVDC I/O isolation
- Low cost
- 3 years warranty

## Applications

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

## GTIN CODE

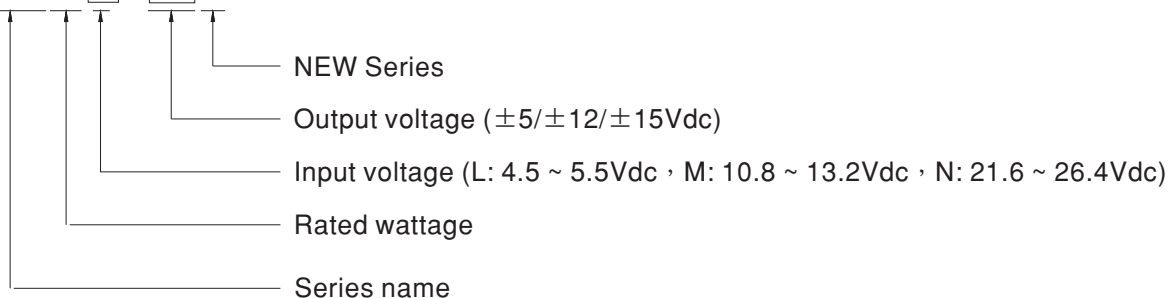
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

## Description

DETNO2-N 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~+85°C, 3KVDC I/P-O/P isolation voltage, compliance to BS EN/EN55032. 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

DETNO2L-12N



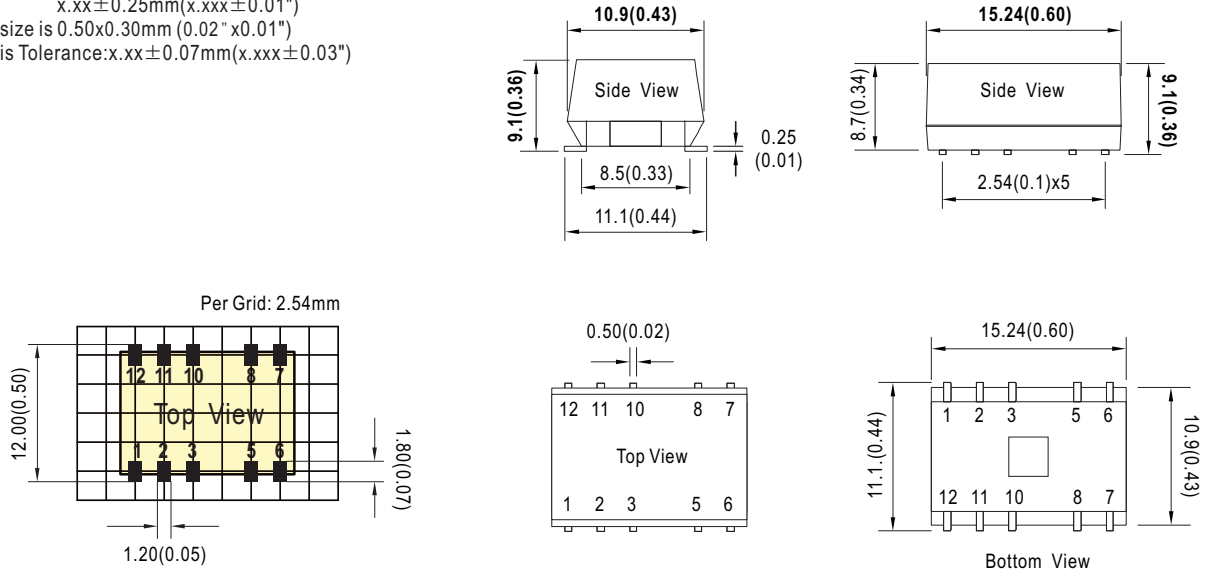


| MODEL SELECTION TABLE |                              |               |           |                   |                   |                      |                          |
|-----------------------|------------------------------|---------------|-----------|-------------------|-------------------|----------------------|--------------------------|
| ORDER NO.             | INPUT                        |               |           | OUTPUT            |                   | EFFICIENCY<br>(TYP.) | CAPACITOR LOAD<br>(MAX.) |
|                       | INPUT VOLTAGE<br>(RANGE)     | INPUT CURRENT |           | OUTPUT<br>VOLTAGE | OUTPUT<br>CURRENT |                      |                          |
|                       |                              | NO LOAD       | FULL LOAD |                   |                   |                      |                          |
| DETN02L-05N           | Normal 5V<br>(4.5 ~ 5.5V)    | 60mA          | 513mA     | ±5V               | ±20 ~ 200mA       | 81%                  | ±680μF                   |
| DETN02L-12N           |                              | 60mA          | 500mA     | ±12V              | ±8 ~ 83mA         | 81%                  | ±220μF                   |
| DETN02L-15N           |                              | 60mA          | 494mA     | ±15V              | ±6 ~ 66mA         | 83%                  | ±220μF                   |
| DETN02M-05N           | Normal 12V<br>(10.8 ~ 13.2V) | 30mA          | 208mA     | ±5V               | ±20 ~ 200mA       | 82%                  | ±680μF                   |
| DETN02M-12N           |                              | 30mA          | 203mA     | ±12V              | ±8 ~ 83mA         | 80%                  | ±220μF                   |
| DETN02M-15N           |                              | 30mA          | 200mA     | ±15V              | ±6 ~ 66mA         | 81%                  | ±220μF                   |
| DETN02N-05N           | Normal 24V<br>(21.6 ~ 26.4V) | 15mA          | 107mA     | ±5V               | ±20 ~ 200mA       | 81%                  | ±680μF                   |
| DETN02N-12N           |                              | 15mA          | 104mA     | ±12V              | ±8 ~ 83mA         | 82%                  | ±220μF                   |
| DETN02N-15N           |                              | 15mA          | 104mA     | ±15V              | ±6 ~ 66mA         | 82%                  | ±220μF                   |

| SPECIFICATION               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                    |                        |                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------|
| INPUT                       | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | L: 4.5 ~ 5.5Vdc<br>M: 10.8 ~ 13.2Vdc<br>N: 21.6 ~ 26.4Vdc                                                                          |                        |                                                    |
|                             | FILTER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Internal capacitor                                                                                                                 |                        |                                                    |
|                             | PROTECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Fuse recommended.<br>5Vin models: 800mA Slow-Blow Type<br>12Vin models: 300mA Slow-Blow Type<br>24Vin models: 170mA Slow-Blow Type |                        |                                                    |
|                             | INTERNAL POWER DISSIPATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 500mW                                                                                                                              |                        |                                                    |
| OUTPUT                      | VOLTAGE ACCURACY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ±5.0%                                                                                                                              |                        |                                                    |
|                             | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2W                                                                                                                                 |                        |                                                    |
|                             | RIPPLE & NOISE    Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 150mVp-p                                                                                                                           |                        |                                                    |
|                             | LINE REGULATION   Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.2% for 1% input variation                                                                                                        |                        |                                                    |
|                             | LOAD REGULATION   Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±8%                                                                                                                                |                        |                                                    |
|                             | SWITCHING FREQUENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 85KHz                                                                                                                              |                        |                                                    |
| PROTECTION                  | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.5 second max.                                                                                                                    |                        |                                                    |
| ENVIRONMENT                 | COOLING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Free-air convection                                                                                                                |                        |                                                    |
|                             | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -40 ~ +85℃ (Refer to "Derating Curve")                                                                                             |                        |                                                    |
|                             | CASE TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | +90℃ max.                                                                                                                          |                        |                                                    |
|                             | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 20% ~ 90% RH non-condensing                                                                                                        |                        |                                                    |
|                             | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -55 ~ +125℃, 10 ~ 95% RH non-condensing                                                                                            |                        |                                                    |
|                             | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.03% / °C (0 ~ 90℃)                                                                                                               |                        |                                                    |
|                             | SOLDERING TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.5mm from case of 1 ~ 10sec./240℃ max.                                                                                            |                        |                                                    |
|                             | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                            |                        |                                                    |
| SAFETY & EMC<br>( Note.5,6) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | EAC TP TC 020/2011 approved                                                                                                        |                        |                                                    |
|                             | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | I/P-O/P:3KVDC                                                                                                                      |                        |                                                    |
|                             | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | I/P-O/P:10G Ohms / 500VDC / 25℃ / 70% RH                                                                                           |                        |                                                    |
|                             | ISOLATION CAPACITANCE (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 115pF                                                                                                                              |                        |                                                    |
|                             | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameter                                                                                                                          | Standard               | Test Level / Note( Note.6)                         |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Conducted                                                                                                                          | BS EN/EN55032(CISPR32) | Class A/B with external components<br>(see page 5) |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Radiated                                                                                                                           | BS EN/EN55032(CISPR32) |                                                    |
|                             | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameter                                                                                                                          | Standard               | Test Level / Note                                  |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ESD                                                                                                                                | BS EN/EN61000-4-2      | ±8KV air ; ±6KV contact, Criterion B               |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Radiated Susceptibility                                                                                                            | BS EN/EN61000-4-3      | 3V/m, Criterion A                                  |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EFT/Bursts                                                                                                                         | BS EN/EN61000-4-4      | 1KV at power, Criterion B                          |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Surge                                                                                                                              | BS EN/EN61000-4-5      | 0.5KV Line-Line, Criterion B                       |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Conducted                                                                                                                          | BS EN/EN61000-4-6      | 3Vrms, Criterion A                                 |
| Magnetic Field              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | BS EN/EN61000-4-8                                                                                                                  | 1A/m, Criterion A      |                                                    |
| OTHERS                      | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 886Khrs min. MIL-HDBK-217F(25℃)                                                                                                    |                        |                                                    |
|                             | DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 15.24*10.9*9.1mm (0.6*0.43*0.36 inch)                                                                                              |                        |                                                    |
|                             | CASE MATERIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Non-Conductive black plastic (UL 94V-0 rated)                                                                                      |                        |                                                    |
|                             | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1.6g ; 33pcs/per tube, 1584pcs/48 tube/per carton                                                                                  |                        |                                                    |
| NOTE                        | 1.All parameters are specified at normal input(L:5Vdc, M:12Vdc, N:24Vdc), rated load, 25℃ 70% RH ambient.<br>2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf & 47µf capacitor.<br>3.Line regulation is measured from low line to high line at rated load.<br>4.Load regulation is measured from 10% to 100% rated load.<br>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."(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> )<br>6.An external input filter capacitor is required if the module has to meet BS EN/EN61000-4-4, BS EN/EN61000-4-5.<br>The filter capacitor Power Mate suggest: 470µF/100V.<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                                    |                        |                                                    |

### Mechanical Specification

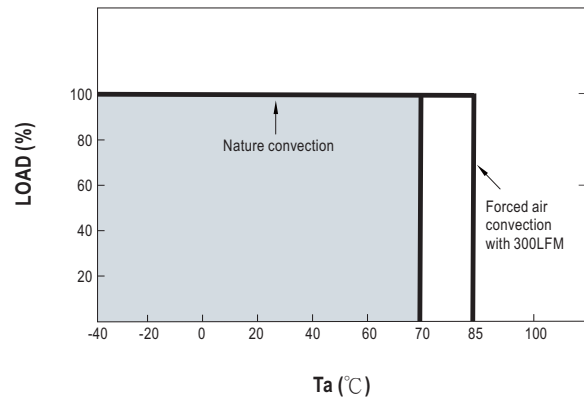
- All dimensions in mm(inch)
- Tolerance:  $x.xx \pm 0.5\text{mm}$  ( $x.xx \pm 0.02"$ )  
 $x.xx \pm 0.25\text{mm}$  ( $x.xxx \pm 0.01"$ )
- Pin size is  $0.50 \times 0.30\text{mm}$  ( $0.02" \times 0.01"$ )
- Pin is Tolerance:  $x.xx \pm 0.07\text{mm}$  ( $x.xxx \pm 0.03"$ )



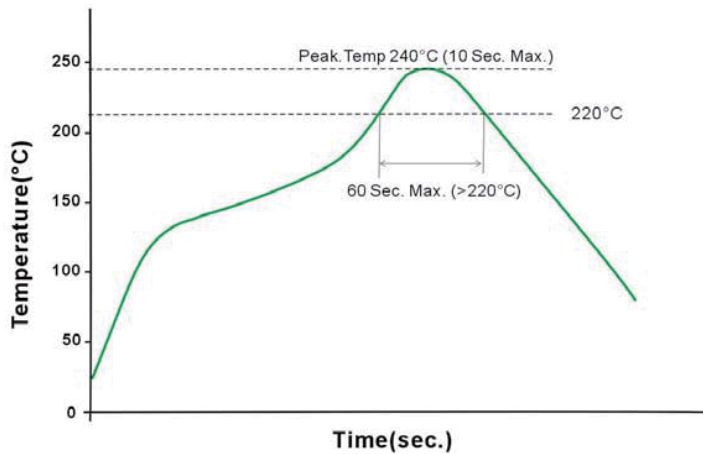
### Plug Assignment

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

### Derating Curve



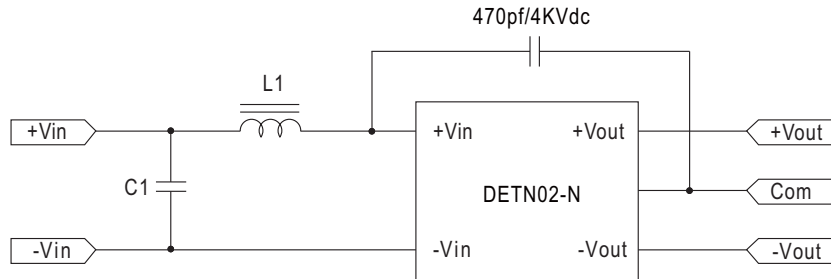
### Reflow Soldering Curve



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

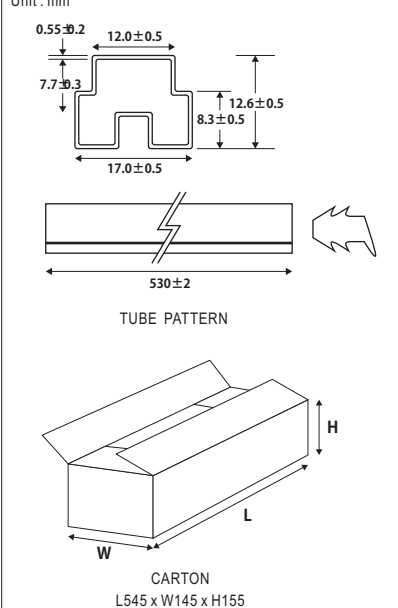
## ■ EMC Suggestion Circuit

※Required external componets to meet BS EN/EN55032 Class A/B are as below:



| Model No.   | Class A     |             | Class B    |             |
|-------------|-------------|-------------|------------|-------------|
|             | L1          | C1          | L1         | C1          |
| DETNO2L-xxN | 10 $\mu$ H  | 4.7 $\mu$ F | 22 $\mu$ H | 4.7 $\mu$ F |
| DETNO2M-xxN | 3.3 $\mu$ H | 2.2 $\mu$ F | 10 $\mu$ H | 2.2 $\mu$ F |
| DETNO2N-xxN | 22 $\mu$ H  | 2.2 $\mu$ F | 47 $\mu$ H | 2.2 $\mu$ F |

## ■ Packing

| Standard Tube Packing                                                                                                                                         | MPQ<br>Per Tube<br>(PCS) | One Tube<br>G.W. | Max. Q'TY/<br>Carton(PCS) | One Carton<br>G.W. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------|---------------------------|--------------------|
| <p>Unit : mm</p>  <p>TUBE PATTERN</p> <p>CARTON<br/>L545 x W145 x H155</p> | 33                       | 0.075Kg          | 1584                      | 4Kg                |

## ■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>