



3W DIP Package DC-DC Regulated Converter

## SLC03 & DLC03 series



### ■ Features

- DIP16 package with industry standard pinout
- 2:1 wide input range
- Operating temperature range -40 ~ +85°C
- No minimum load required
- Comply to EN55032 radiated Class B without additional components
- High efficiency up to 82%
- Protections: Short circuit (Continuous) / Overload / Input under voltage
- 1.5KVDC I/O isolation
- 3 years warranty

### ■ Applications

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

### ■ Description

SLC03 and DLC03 series are 3W isolated and regulated module type DC-DC converter with DIP16 package. It features international standard pins, a high efficiency up to 82%, wide working temperature range -40~+85°C, 1.5KVDC I/P-O/P isolation voltage, the compliance to EN55032 radiated Class B without additional components, continuous-mode short circuit protection, etc. The models account for different input voltage, 9~18V, 18~36V and 36~75V 2:1 wide input range, and various output voltage, 5V/12V/15V for single output and  $\pm 5V/\pm 12V/\pm 15V$  for dual outputs, which are suitable for all kinds of systems, such as industrial control, telecommunication field, distributed power architecture, and so on.

### ■ Model Encoding

**SLC03A-12**

Output voltage (5/12/15Vdc,  $\pm 5/\pm 12/\pm 15$ Vdc)

Input voltage (A: 9~18Vdc, B: 18~36Vdc, C: 36~75Vdc)

Rated wattage

Series name { S: Single output  
D: Dual output



3W DIP Package DC-DC Regulated Converter

**SLC03 & DLC03 series**

| 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 |                   |                   |                      |                          |
| SLC03A-05             | 12V<br>(9 ~ 18V)         | 25mA          | 330mA     | 5V                | 600mA             | 79%                  | 1000μF                   |
| SLC03A-12             |                          | 15mA          | 320mA     | 12V               | 250mA             | 81%                  | 470μF                    |
| SLC03A-15             |                          | 15mA          | 309mA     | 15V               | 200mA             | 81%                  | 330μF                    |
| DLC03A-05             |                          | 30mA          | 325mA     | ±5V               | ±0 ~ 300mA        | 79%                  | * 220μF                  |
| DLC03A-12             |                          | 32mA          | 305mA     | ±12V              | ±0 ~ 125mA        | 82%                  | *220μF                   |
| DLC03A-15             |                          | 32mA          | 313mA     | ±15V              | ±0 ~ 100mA        | 81%                  | *220μF                   |
| SLC03B-05             | 24V<br>(18 ~ 36V)        | 10mA          | 154mA     | 5V                | 600mA             | 81%                  | 1000μF                   |
| SLC03B-12             |                          | 10mA          | 154mA     | 12V               | 250mA             | 82%                  | 470μF                    |
| SLC03B-15             |                          | 10mA          | 153mA     | 15V               | 200mA             | 82%                  | 330μF                    |
| DLC03B-05             |                          | 20mA          | 158mA     | ±5V               | ±0 ~ 300mA        | 79%                  | *220μF                   |
| DLC03B-12             |                          | 20mA          | 156mA     | ±12V              | ±0 ~ 125mA        | 81%                  | *220μF                   |
| DLC03B-15             |                          | 20mA          | 156mA     | ±15V              | ±0 ~ 100mA        | 80%                  | *220μF                   |
| SLC03C-05             | 48V<br>(36 ~ 75V)        | 7mA           | 77mA      | 5V                | 600mA             | 81%                  | 1000μF                   |
| SLC03C-12             |                          | 7mA           | 76mA      | 12V               | 250mA             | 82%                  | 470μF                    |
| SLC03C-15             |                          | 7mA           | 76mA      | 15V               | 200mA             | 82%                  | 330μF                    |
| DLC03C-05             |                          | 10mA          | 79mA      | ±5V               | ±0 ~ 300mA        | 80%                  | *220μF                   |
| DLC03C-12             |                          | 10mA          | 78mA      | ±12V              | ±0 ~ 125mA        | 80%                  | *220μF                   |
| DLC03C-15             |                          | 10mA          | 78mA      | ±15V              | ±0 ~ 100mA        | 80%                  | *220μF                   |

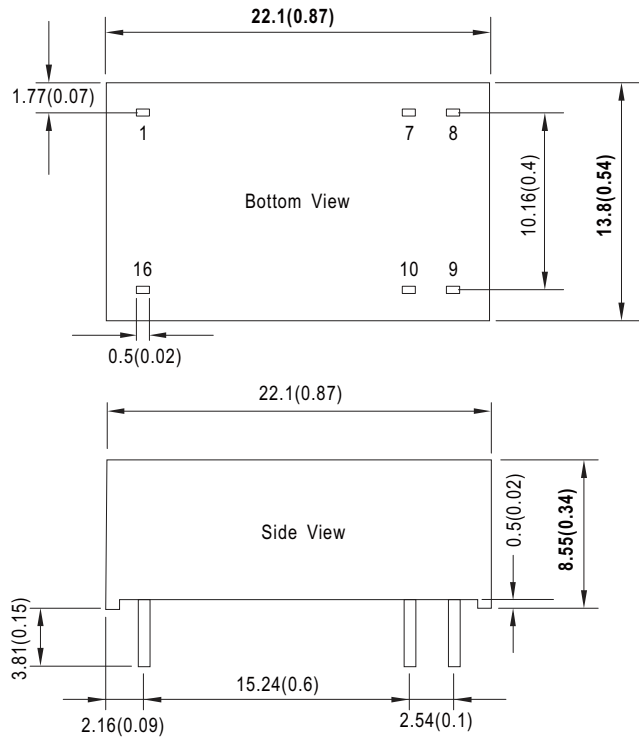
\* For each output



| SPECIFICATION             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                          |                                               |                            |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------|
| INPUT                     | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A: 9~18Vdc , B: 18~36Vdc , C: 18~75Vdc                                                                                   |                                               |                            |
|                           | SURGE VOLTAGE (100ms max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 12Vin models : 25Vdc ; 24Vin models : 50V ; 48Vin models : 100Vdc                                                        |                                               |                            |
|                           | FILTER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Internal capacitor                                                                                                       |                                               |                            |
|                           | PROTECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Fuse recommended. 12Vin models: 1A Slow-Blow Type, 24Vin models: 0.5A Slow-Blow Type, 48Vin models: 200mA Slow-Blow Type |                                               |                            |
|                           | INTERNAL POWER DISSIPATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1000mW                                                                                                                   |                                               |                            |
| OUTPUT                    | VOLTAGE ACCURACY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±2%                                                                                                                      |                                               |                            |
|                           | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3W                                                                                                                       |                                               |                            |
|                           | RIPPLE & NOISE   Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 50mVp-p                                                                                                                  |                                               |                            |
|                           | LINE REGULATION   Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±0.2%                                                                                                                    |                                               |                            |
|                           | LOAD REGULATION   Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±0.5%                                                                                                                    |                                               |                            |
|                           | SWITCHING FREQUENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 100KHz                                                                                                                   |                                               |                            |
| PROTECTION                | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Protection type : Continuous, automatic recovery                                                                         |                                               |                            |
|                           | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 150 ~ 250% rated output power                                                                                            |                                               |                            |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Protection type : Recovers automatically after fault condition is removed                                                |                                               |                            |
|                           | UNDER VOLTAGE LOCKOUT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Start-up voltage                                                                                                         | 12Vin: 8.8Vdc,   24Vin: 17Vdc,   48Vin: 34Vdc |                            |
| Shutdown voltage          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 12Vin: 7Vdc,    24Vin: 14Vdc,   48Vin: 30Vdc                                                                             |                                               |                            |
| ENVIRONMENT               | COOLING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Free-air convection                                                                                                      |                                               |                            |
|                           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -40 ~ +85℃ (Refer to "Derating Curve")                                                                                   |                                               |                            |
|                           | CASE TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | +100℃ max.                                                                                                               |                                               |                            |
|                           | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20% ~ 90% RH non-condensing                                                                                              |                                               |                            |
|                           | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -40 ~ +105℃, 10 ~ 95% RH non-condensing                                                                                  |                                               |                            |
|                           | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.03% / °C (0 ~ 80℃)                                                                                                     |                                               |                            |
|                           | SOLDERING TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1.5mm from case of 3 ~ 5sec./265℃ max.                                                                                   |                                               |                            |
|                           | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                  |                                               |                            |
| SAFETY & EMC<br>( Note.5) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EAC TP TC 004 approved                                                                                                   |                                               |                            |
|                           | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | I/P-O/P:1.5KVDC                                                                                                          |                                               |                            |
|                           | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH                                                                                |                                               |                            |
|                           | ISOLATION CAPACITANCE (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 80pF                                                                                                                     |                                               |                            |
|                           | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Parameter                                                                                                                | Standard                                      | Test Level / Note( Note.6) |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Conducted                                                                                                                | EN55032(CISPR32)                              | N/A                        |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Radiated                                                                                                                 | EN55032(CISPR32)                              | Class B                    |
|                           | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Parameter                                                                                                                | Standard                                      | Test Level / Note          |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ESD                                                                                                                      | EN61000-4-2                                   | Level 3, ±8KV air          |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Radiated Susceptibility                                                                                                  | EN61000-4-3                                   | Level 2, 3V/m              |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EFT/Burest                                                                                                               | EN61000-4-4                                   | Level 1, 0.5KV             |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Surge                                                                                                                    | EN61000-4-5                                   | Level 2, 0.5KV Line-Line   |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Conducted                                                                                                                | EN61000-4-6                                   | Level 2, 3V                |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Magnetic Field                                                                                                           | EN61000-4-8                                   | Level 1, 1A/m              |
| OTHERS                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MTBF                                                                                                                     | 300Khrs min. MIL-HDBK-217F(25℃)               |                            |
|                           | DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 22.1*13.8*8.55mm (0.87*0.54*0.34 inch)                                                                                   |                                               |                            |
|                           | CASE MATERIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Non-Conductive black plastic (UL 94V-0 rated)                                                                            |                                               |                            |
|                           | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4.5g                                                                                                                     |                                               |                            |
| NOTE                      | 1.All parameters are specified at normal input(A:12Vdc, B:24Vdc, C:48Vdc), 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 http://www.meanwell.com)<br>6.An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.<br>The filter capacitor Power Mate suggest: 220uF/100V. |                                                                                                                          |                                               |                            |

## Mechanical Specification

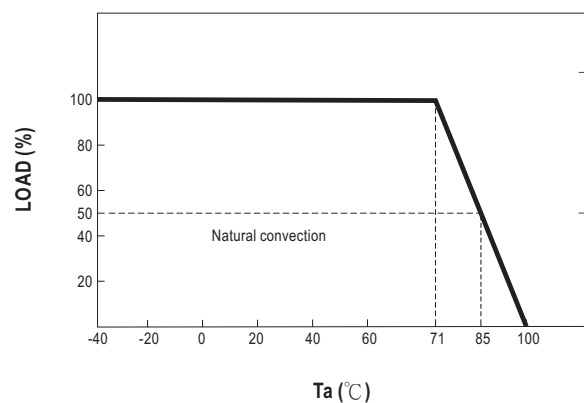
- All dimensions in mm(inch)
- Tolerance:  $x.xx \pm 0.5\text{mm}$  ( $x.xx \pm 0.02"$ )  
 $x.xx \pm 0.25\text{mm}$  ( $x.xxx \pm 0.01"$ )
- Pin size is 0.50x0.30mm (0.02" x 0.01")
- Pin is Tolerance:  $x.xx \pm 0.07\text{mm}$  ( $x.xxx \pm 0.03"$ )



## Plug Assignment

| Pin-Out |                          |                        |
|---------|--------------------------|------------------------|
| Pin No. | SLC03<br>(Single output) | DLC03<br>(Dual output) |
| 1       | -Vin                     | -Vin                   |
| 7       | N.C.                     | N.C.                   |
| 8       | N.C.                     | Common                 |
| 9       | +Vout                    | +Vout                  |
| 10      | -Vout                    | -Vout                  |
| 16      | +Vin                     | +Vin                   |

## Derating Curve



## Installation Manual

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