

# HS60(TB Type)

MAX. Power 60W Isolated Terminal Block Type AC-DC Converter

## HS60Series(TB Type) Isolated Terminal Block Type AC-DC Converter



### Features

- Power Saving Mode Operation
- Small, High Efficiency
- Isolated Input - Output
- Quasi-resonant operation and Current mode Control
- Low output Ripple & Noise
- Built-in over current protection circuit
- Short Circuit Protection
- Universal Input Voltage(Free Voltage)
- Built in EMI Filter
- Safety standard (IEC, EN 60950-1)
- AC-DC Converter : CB, CE approved
- Mold Base : Meets CB, CE standard
- RoHS compatible design
- 2 years warranty

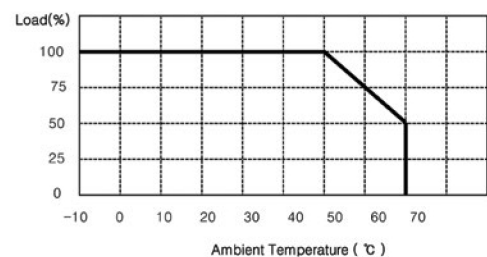
### Environment

- Operating Temperature : -10°C ~ 70°C
- Operating Humidity : 20% ~ 90% RH (Non condensing)
- Storage Temperature : -20°C ~ 75°C
- Cooling : Free-Air Convection
- MTBF : 3.0 x 10<sup>5</sup> hrs

### Applications

- Data and telecommunication
- Datacommunication electronic equipments
- FA control

### Derating Curve



\* Operating Temperature Range : From -10°C to 70°C

### General Specifications

|                       |                          |  |
|-----------------------|--------------------------|--|
| Input                 | Power Saving             | 5V, 12V, 15V, 24V : Less than 0.3W (@ Input : 230Vac, Output : No Load)<br>48V : Less than 0.5W (@ Input : 230Vac, Output : No Load)     |
|                       | Voltage Range            | AC90V ~ 264V OR DC120V ~ 370V  |
|                       | Frequency                | 44 ~ 440Hz(50Hz, 60Hz Typ.)  |
|                       | Current                  | 1.40Amax   |
|                       | Efficiency               | 84% ~ 90%  |
|                       | Inrush Current           | 30Amax.(110Vac), 60Amax.(220Vac)@Cold start  |
| Output                | Leakage Current          | 0.2mAmax.(110Vac), 0.35mAmax.(220Vac)  |
|                       | Output Voltage           | 5V, 12V, 15V, 24V, 48V   |
|                       | Line Regulation          | ± 1.0%   |
|                       | Load Regulation          | ± 1.0%   |
|                       | Output Voltage Accuracy  | ± 2.0%   |
| Protection Circuit    | Ripple & Noise           | 1%(Peak to Peak) Max.  |
|                       | Over Current Protection  | Works at over 105% of rating and recovers automatically  |
|                       | Over Voltage Protection  | Works at over 105% ~ 140% of rating, re-power on to recover<br>When the OVP triggers, the output voltage is clamped 60% ~ 80% of rating. |
| Electrically Isolated | Short circuit Protection | 1minute, recovers automatically  |
|                       | Input - Output           | AC3kV, 1minute / DC500V, 100MΩ min   |
|                       | Input - FRG              | AC2kV, 1minute / DC500V, 100MΩ min   |
|                       | Output - FRG             | AC0.5kV, 1minute / DC500V, 70MΩ min  |

### HS60 Series(TB Type) Ordering Information (Single Output)

| MODEL                        | HS60-05TB  | HS60-12TB | HS60-15TB | HS60-24TB | HS60-48TB      |      |
|------------------------------|--|-----------|-----------|-----------|----------------|------|
| Input Voltage (V)            | AC90V ~ 264V, 44Hz ~ 440Hz or DC120V ~ 370V        |           |           |           |                |      |
| Power Saving                 | less than 0.3W (@Input : 230Vac, Output : No Load) |           |           |           | less than 0.5W |      |
| Output                       | Vout (V)   | 5         | 12        | 15        | 24             | 48   |
|                              | Iout (A)   | 10        | 5         | 4         | 2.5            | 1.25 |
| Maximum Power (W)            | 50   | 60        | 60        | 60        | 60             |      |
| Ripple & Noise (mVp-p)       | 100  | 120       | 150       | 200       | 300            |      |
| Efficiency Typ. (220Vac) [%] | 84   | 89        | 90        | 90        | 89             |      |

### Pin assignments



| Top View |

| Pin No. | Single     | Dual       |
|---------|------------|------------|
| 1       | AC input L | AC input L |
| 2       | AC input N | AC input N |
| 3       | FRG        | FRG        |
| 4       | +Vout      | +Vout      |
| 5       | +Vout      | Com        |
| 6       | -Vout      | Com        |
| 7       | -Vout      | -Vout      |

### Outline Dimensions : <Unit : mm (inch)>

