

Features

- 300 Watt output power
- Half brick package
- 4:1 input voltage range
- Industry standard pin-out
- 3 KVDC isolation
- Operating temperature range -40°C to +100°C
- High efficiency up to 86.5%
- Design meet EN62368-1 standard

Isolated DC-DC converter

RS Stock No.: 2853160



RS PRO is the own brand of RS. The RS PRO Seal of Approval is your assurance of professional quality, a guarantee that every part is rigorously tested, inspected, and audited against demanding standards. Making RS PRO the Smart Choice for our customers.

Product Description

The DC-DC converter is specially designed for industrial control, electric power, railway solution, battery management system, automation power application, and datacom application.
OP temperature is from -40 °C to 100°C and 3000Vdc isolation.
No minimum load required.

General Specifications

Type	300W Isolated DC-DC converter
Regulated/Unregulated	Regulated
Efficiency * ¹	Typ. 86.5%
Applications	Industrial control, electric power, railway solution, battery management system, automation power application, and datacom application

Specifications

Output Voltage	12V dc
Input Voltage	9-36V dc Nom.24V dc
Output Current	25000mA
Input Curren @ no load	50mA
Input Voltage Range	Min. 9V dc/ Max. 36V dc
Input Surge Voltage	Max. 50V dc (1s max.)
Under Voltage Lockout	Typ. 7V dc (0%-100% load)
Start-up Voltage	Typ. 9V dc (0%-100% load)
Start-up Time	Max. 200ms (100% load at nominal Vin)
Remote ON/OFF	DC-DC on Open or $3V < V_r < 12V$
	DC-DC off Short or $0V < V_r < 1.2V$
Output Voltage Accuracy	Max. $\pm 1\%$
Capacitive Load * ²	Max. 8800 μ F
Operating Frequency	Typ. 250KHz
Ripple and Noise * ³	Max. 120mV pp
Transient Response Recovery Time	Typ. 500 μ s (75%-100% load)
MTBF	Min. 600000hours (25°C)
Line Regulation	Max. $\pm 0.2\%$ (LL-HL at 100% load)
Load Regulation	Max. $\pm 0.5\%$ (0%-100% load)
Minimum Load	0%
Voltage Adjustability	$\pm 10\%$ (0%~100% load at Vin range, Pout $\leq$ max rated power)
Isolation Voltage	Min. 3000V dc/ 1 min., Input to Output (DC Isolation cut-off current: 1mA)

Isolated DC-DC converter

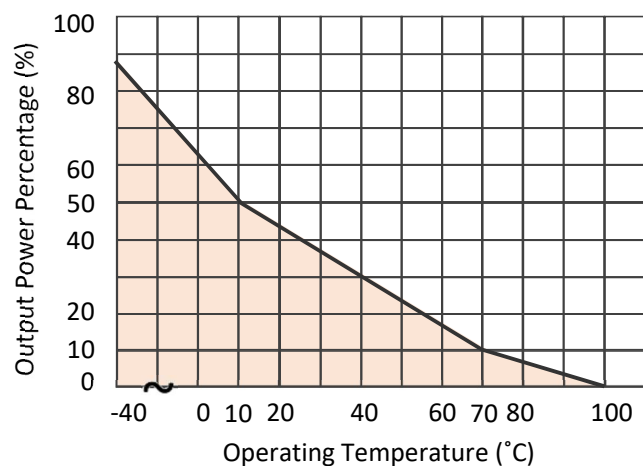


	Min. 2000V ac/ 1 min., Input to Output (AC Isolation cut-off current: 5mA)
	Min. 1600V dc/ 1 min., Input (Output) to case (DC Isolation cut-off current: 1mA)
	Min. 1000V ac/ 1 min., Input (Output) to case (AC Isolation cut-off current: 5mA)
Isolation Resistance	Min. 1000M Ω
Isolation Capacitance	Max. 4700pF
Short Circuit Protection	Continuous, automatic recovery
Over Load Protection	Typ. 150%
Over Voltage Protection	Min. 13.4V dc/ Max. 19.2V dc
Over Temperature Protection	Max. 110°C
Safety Approvals	Meet EN62368-1
Vibration	MIL-STD-202G
Certificate	RoHS / REACH / CE

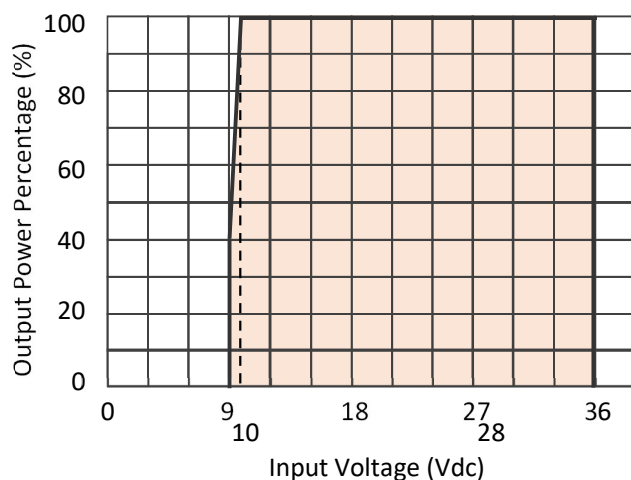
General Specifications

Operating Temperature	-40 to 100°C
Storage Temperature	-55 to 125°C
Relative Humidity	5 to 95%RH
Temperature Coefficient	0.005 %/°C
Baseplate Temperature	Max. 105°C

Derating

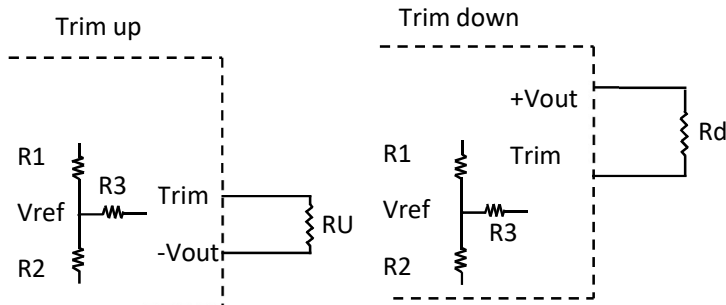


■ Derating curve for input voltage



External Output Trimming

Vref	R1	R2	R3
2.50V	38.0K Ω	10.0K Ω	68.0K Ω



Formula for trim resistor:

$$\text{UP: } R_u = \frac{aR_2}{R_2 - a} - R_3 \quad a = \frac{V_{ref}}{V_o' - V_{ref}} \cdot R_1$$

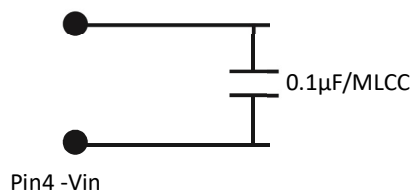
$$\text{DOWN: } R_d = \frac{bR_1}{R_1 - b} - R_3 \quad b = \frac{V_o' - V_{ref}}{V_{ref}} \cdot R_2$$

Note:

1. R_u , R_d is mean trim resistor, please check the formula.
2. a & b : user define parameter, no actual meanings.
3. V_o' is mean trim up/down voltage.

Remote ON/OFF control

Pin2 Remote ON/OFF



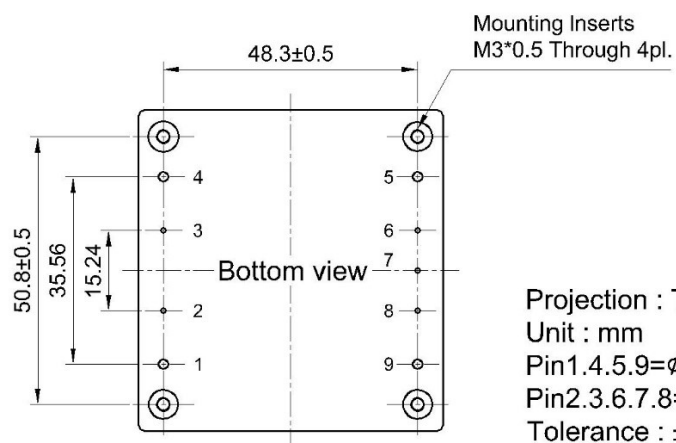
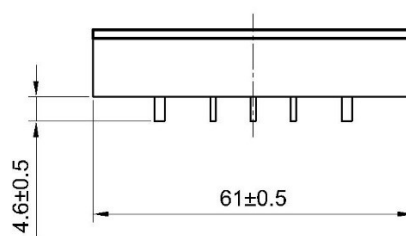
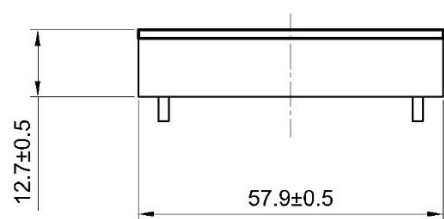
EMC Specifications

EMI	Class A/B with external circuit EN 55032
ESD	Criteria A EN 61000-4-2, Air $\pm$ 8kV; Contact $\pm$ 6kV
RS	Criteria A EN 61000-4-3, 10V/m
EFT ⁴	Criteria A EN 61000-4-4, $\pm$ 2kV
Surge ⁴	Criteria A EN 61000-4-5, $\pm$ 2kV
CS	Criteria A EN 61000-4-6, 10V/rms
PFMF	Criteria A EN 61000-4-8, 10A/m

Mechanical Specifications

Case Material	Aluminum Baseplate with Plastic Case
Potting Material	Silicone
Dimensions	57.90 x 61.00 x 12.70 mm
Weight	120g
Cooling	Natural convection

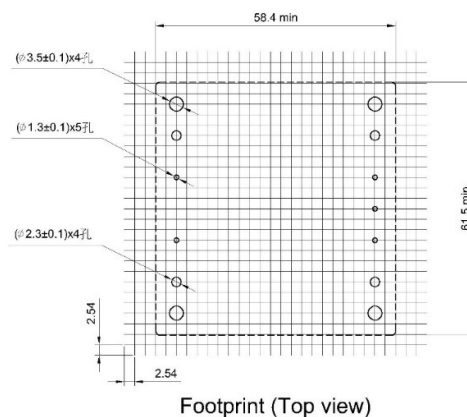
Dimension & Pinning

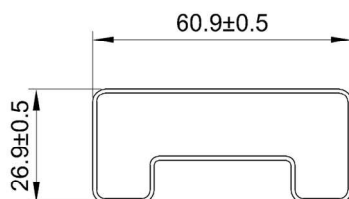


Pin	Pin-Out
1	+Vin
2	CTRL
3	Case
4	-Vin
5	-Vout
6	-Sense
7	Trim
8	+Sense
9	+Vout

Projection : Third angle projection
Unit : mm
Pin1.4.5.9=Ø2.0±0.1
Pin2.3.6.7.8=Ø1.0±0.1
Tolerance : ±0.25mm

■ Recommend Footprint



Package

UNIT:mm
1 Tube = 7 pcs
Length:520±2mm

1. ^{*1} The efficiency is test by nominal input and max. full load @25°C.
2. ^{*2} The capacitive load is tested by nominal input and constant resistive load.
3. ^{*3} Ripple & Noise measured with 20MHZ BW at nominal input voltage 0%~100% load with E-cap 47μF/100V +X7R MLCC 0.47μF/100V.
4. ^{*4} External input capacitor required 1000μF/100V.
5. All specifications valid at nominal input voltage, full load and 25°C after warm-up time unless otherwise stated.