

## Features

- 30 Watt output power
- 1x1" package
- 4:1 input voltage range
- Industry standard pin-out
- 1.6 KVDC isolation
- Operating temperature range -40°C to +105°C
- High efficiency up to 90%
- UL62368-1/ EN62368-1/ IEC62368-1 approval

## Isolated DC-DC converter

RS Stock No.: 2853153



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 industry control application, stand by power application, telecom/ datacom application, save space solution.  
OP temperature is full load from -40 °C to 65°C and 1600Vdc isolation.  
No minimum load required.

## General Specifications

Type	30W Isolated DC-DC converter
Regulated/Unregulated	Regulated
Efficiency *1	Typ. 90%
Applications	Industry control application, stand by power application, telecom/ datacom application, save space solution.

## Specifications

Output Voltage	12V dc
Input Voltage	9-36V dc Nom.24V dc
Output Current	2500 mA
Input Curren @ no load	10mA
Input Voltage Range	Min. 9V dc/ Max. 36V dc
Input Surge Voltage	Max. 50V dc (0.1s max.)
Under Voltage Lockout	Typ. 7.5V dc (0%-100% load)
Start-up Voltage	Typ. 9V dc (0%-100% load)
Start-up Time	Typ. 30mS (Constant resistive load, nominal input)
Remote ON/OFF	DC-DC on Open or $3.5V < V_r < 15V$
	DC-DC off Short or $0V < V_r < 1.2V$
	2mA Input current (remote off mode)
Output Voltage Accuracy	Max. $\pm 1\%$
Capacitive Load *2	Max. 1200 $\mu$ F
Operating Frequency	Typ. 400KHz
Ripple and Noise *3	Max. 75mV pp
Transient Response Recovery Time	Typ. 250 $\mu$ s (25% load step change)
MTBF	Min. 560000hours (25°C)
Line Regulation	$\pm 0.2\%$ (LL-HL at 100% load)
Load Regulation	$\pm 0.2\%$ (0%-100% load)
Cross Regulation	$\pm 5\%$ (25%-100% load)
Minimum Load	0%
Voltage Adjustability	Max. 10% (0%-100% load at Vin range)

# Isolated DC-DC converter

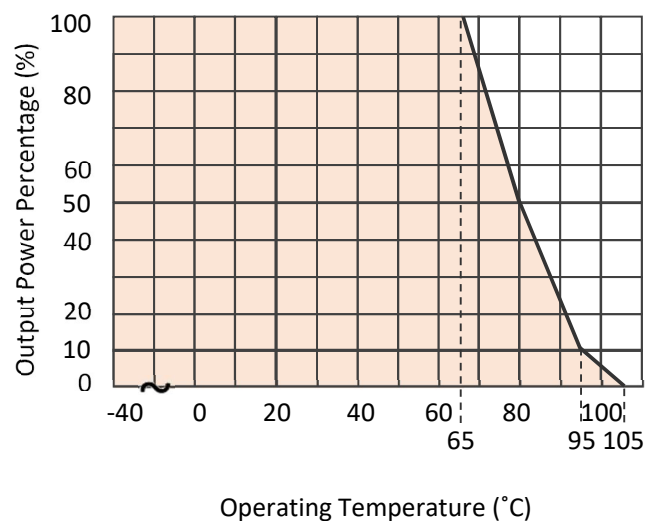


<b>Isolation Voltage</b>	Min. 1600V dc/ 1 min., Input to Output
<b>Isolation Resistance</b>	Min. 1000M $\Omega$
<b>Isolation Capacitance</b>	Max. 2400pF
<b>Short Circuit Protection</b>	Continuous, automatic recovery
<b>Over Load Protection</b>	Typ. 170%
<b>Over Voltage Protection</b>	Typ. 15V dc
<b>Over Temperature Protection</b>	Typ. 115°C
<b>Safety Approvals</b>	UL62368-1/ EN62368-1/ IEC62368-1
<b>Vibration</b>	MIL-STD-202G
<b>Certificate</b>	RoHS / REACH / CE

## General Specifications

<b>Operating Temperature <sup>*4</sup></b>	-40 to 105°C
<b>Storage Temperature</b>	-55 to 125°C
<b>Relative Humidity</b>	5 to 95%RH
<b>Max. Case Temperature</b>	Max. 110°C

## Derating

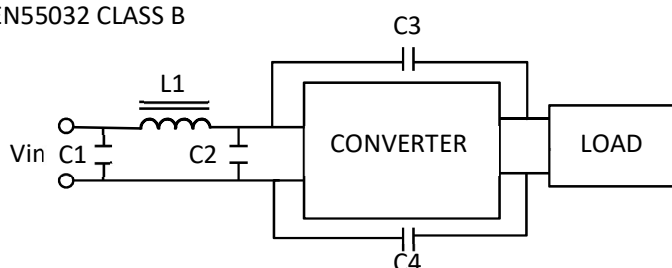


### External Output Trimming

Vref	R1	R2	R3
2.50V	38.0K $\Omega$	10.0K $\Omega$	48.7K $\Omega$

### EMC Compliance Circuit

■ EN55032 CLASS B



C1	L1	C2	C3	C4
4.7 $\mu$ F	10 $\mu$ H	4.7 $\mu$ F	2200pF	2200pF

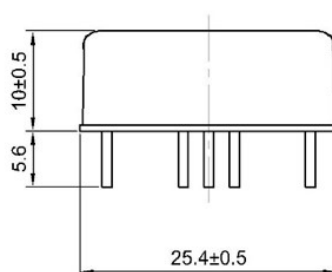
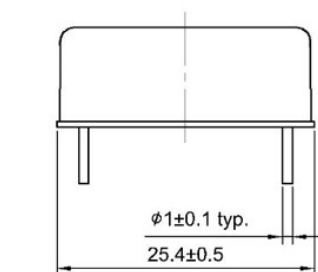
### EMC Specifications

EMI <sup>*5</sup>	CLASS A/ B EN 55032
ESD	Criteria A EN 61000-4-2, Air $\pm$ 8kV; Contact $\pm$ 6kV
RS <sup>*6</sup>	Criteria A EN 61000-4-3
EFT <sup>*6</sup>	Criteria A EN 61000-4-4, $\pm$ 2kV
Surge <sup>*6</sup>	Criteria A EN 61000-4-5, $\pm$ 2kV
CS <sup>*6</sup>	Criteria A EN 61000-4-6
PFMF	Criteria A EN 61000-4-8

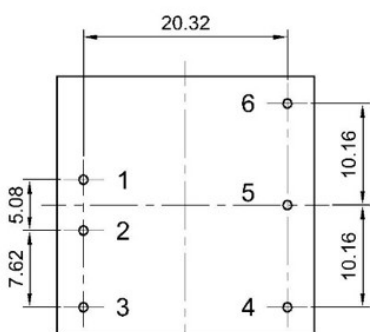
### Mechanical Specifications

Case Material	Nickel plated metal with FR-4 base
Potting Material	Silicone
Dimensions	25.40 x 25.40 x 10.00 mm
Weight	17g
Cooling	Free air convection

## Dimension & Pinning



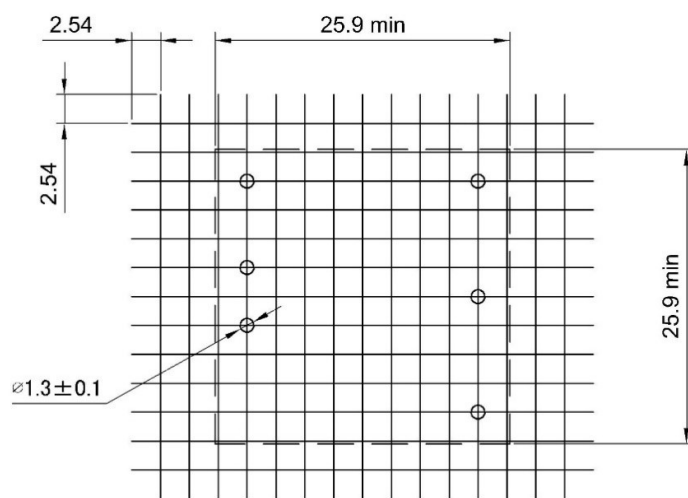
Pin	Pin-Out
1	+Vin
2	-Vin
3	CTRL
4	-Vout
5	Trim
6	+Vout



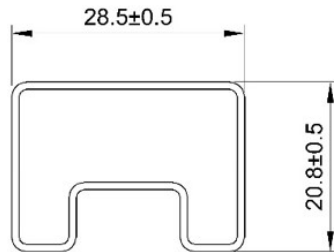
Bottom view

Tolerance :  $\pm 0.25\text{mm}$ 

### Recommend Footprint



Footprint (Top view)

**Package**

UNIT:mm  
1 Tube = 8 pcs  
Length:  $260 \pm 2$  mm

1. <sup>\*1</sup>The efficiency is test by nominal input and full load at 25°C.
2. <sup>\*2</sup>The capacitive load is test by minimum input and constant resistive load.
3. <sup>\*3</sup>Ripple & noise: 20MHz BW at Vin range 0%-100% load (contact MLCC 22  $\mu$  F). Light load ripple & noise is no more than 150mVp-p.
4. <sup>\*4</sup>Derating measured with nominal line. Mounted test board (80 x 40 mm, 3Oz double layer).
5. <sup>\*5</sup>EMI class A without external circuit, and class B suggestion circuit, please check suggestion circuit.
6. <sup>\*6</sup>Test with E-CAP 680 $\mu$ F/100V at input terminal.
7. All specifications valid at nominal input voltage, full load and 25°C after warm-up time unless otherwise stated.