Internal

Features

- 40 Watt output power
- 2x1” 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%
- EN62368-1/ IEC62368-1/ EN55032 approval

Isolated DC-DC converter

RS Stock No.: 2853144

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.

Isolated DC-DC converter

Product Description

The DC-DC converter is specially designed for industrial control system, electric power instrumentation, telecommunications, battery management control, railway application.
OP temperature is full load from -40 ℃ to 60℃ and 1600Vdc isolation.
No minimum load required.

General Specifications

Type	40W Isolated DC-DC converter
Regulated/Unregulated	Regulated
Efficiency *1	Typ. 90%
Applications	Industrial control system, electric power instrumentation, telecommunications, battery management control, railway application.

Specifications

Output Voltage	±12 V dc
Input Voltage	18-75V dc Nom.48V dc
Output Current	±1666 mA
Input Curren @ no load	15mA
Input Voltage Range	Min. 18V dc/ Max. 75V dc
Input Surge Voltage	Max. 100V dc
Under Voltage Lockout	Typ. 16V dc (0%-100% load)
Start-up Voltage	Max. 18V dc (0%-100% load)
Start-up Time	Max. 40mS (100% load at nominal Vin)
Remote ON/OFF	DC-DC on Open or 3V < Vr < 12V
	DC-DC off Short or 0V < Vr < 1.2V
Output Voltage Accuracy	Typ. ±1%
Capacitive Load *2	Max. ±2600μF
Operating Frequency	Typ. 250KHz (100% load at nominal Vin)
Ripple and Noise[*3]	Max. 125mV pp
Transient Response Recovery Time	Typ. 500 μ s (75%-100% load step change)
MTBF *4	Min. 779000hours (25°C)
Line Regulation	Typ. ±0.5% (LL-HL at 100% load)
Load Regulation	Typ. ±1% (0%-100% load)
Cross Regulation	Typ. ±5% (25%-100% load)
Minimum Load	0%
Voltage Adjustability	±10%
Isolation Voltage	Min. 1600V dc/ 1 min., Input to Output

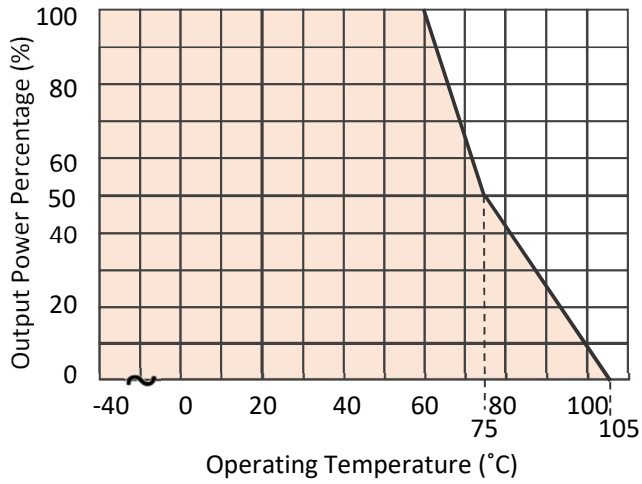
Isolation Resistance	Min. 1000M Ω
Isolation Capacitance	Typ. 1500pF
Short Circuit Protection	Continuous, automatic recovery
Over Load Protection	Typ. 175%
Over Voltage Protection	Min. 112/ Max. 160 % of Vout
Over Temperature Protection	Typ. 115°C
Safety Approvals	EN62368-1/ IEC62368-1/ EN55032
Vibration	MIL-STD-202G
Certificate	RoHS / REACH / CE

General Specifications

Operating Temperature *4	-40 to 105°C
Storage Temperature	-55 to 125°C
Relative Humidity	5 to 95%RH
Temperature Coefficient	±0.005 %/°C
Max. Case Temperature	Max. 110°C

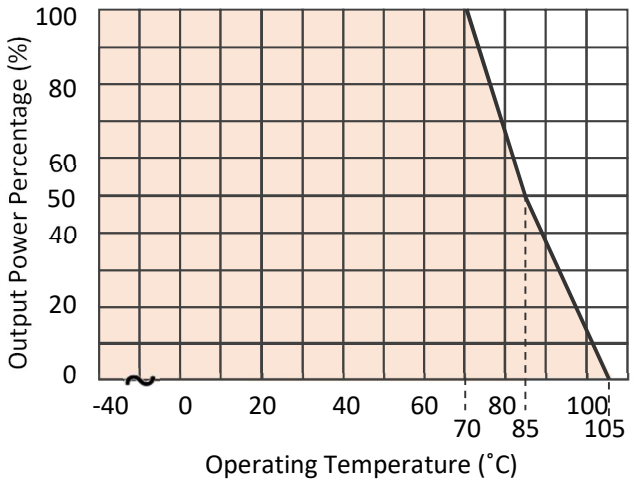
Derating

■ Without test board



The derating curve was measured at nominal Vin in chamber with nature convection.

■ With test board



The derating curve was measured with nominal line. Mounted test board (90 x 80 mm and each power pin with 43 x 40 mm, 2Oz double layer)

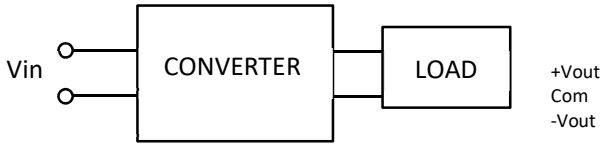
External Output Trimming

Vref	R1	R2	R3
2.50V	12.62K Ω	3.3K Ω	22.0K Ω

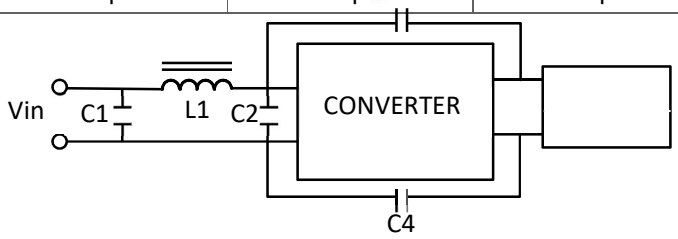
EMC Compliance Circuit

■ EN55032 CLASS A

■ EN55032 CLASS B



C1	L1	C2	C3	C4
4.7μF	3.3μH	4.7μF	2200pF	2200pF



EMC Specifications

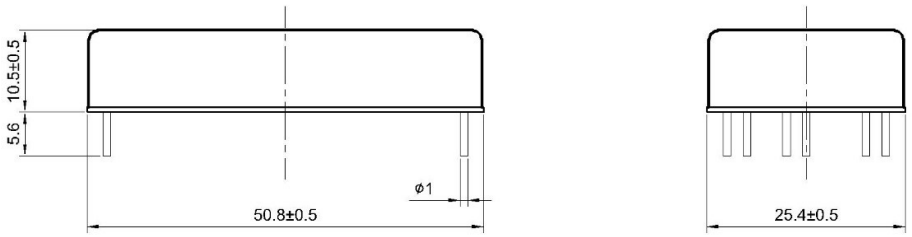
EMI *5	CLASS A/ B EN 55032
ESD	Criteria A EN 61000-4-2, Air±8kV; Contact±6kV
EFT *6	Criteria A EN 61000-4-4, ±2kV
Surge *6	Criteria A EN 61000-4-5, ±2kV

CS	Criteria A EN 61000-4-6, 10V/rms
PFMF	Criteria A EN 61000-4-8, 10A/m

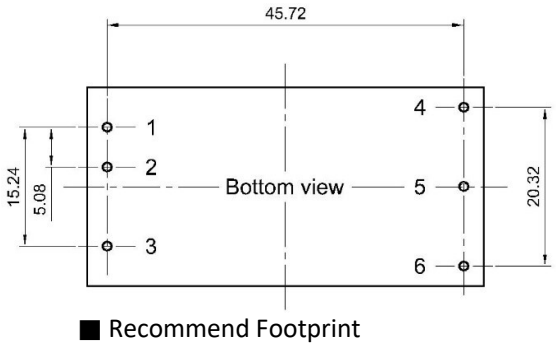
Mechanical Specifications

Case Material	Metal case
Potting Material	Silicone
Dimensions	50.80 x 25.40 x 10.50 mm
Weight	37.6g

Dimension & Pinning

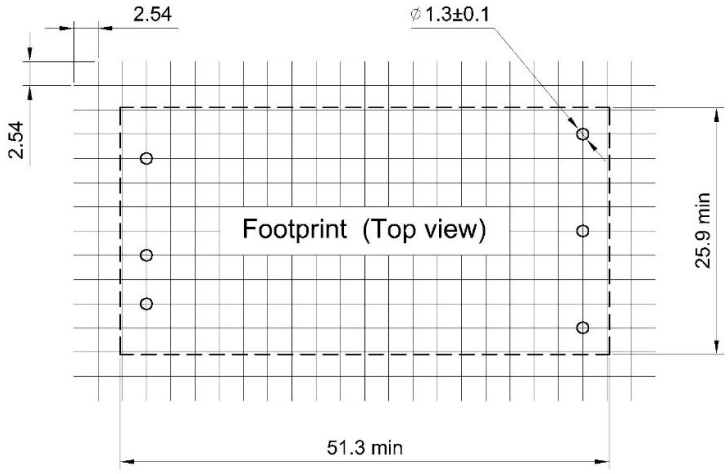


Pin	Pin-Out
1	+Vin
2	-Vin
3	Ctrl
4	+Vout
5	COM
6	-Vout

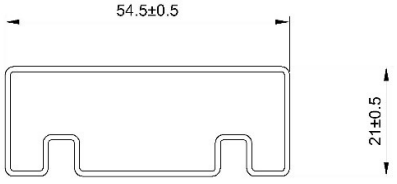


■ Recommend Footprint

Unit : mm
PIN Tol : ±0.1
Tolerance : ±0.35



Package



UNIT:mm
1 Tube = 18 pcs
Length:520±2mm

1. *1 The efficiency is test by nominal input and full load at 25˚C.
2. *2 The capacitive load is test by minimum input and constant resistive load.
3. *3 Ripple& noise: Measured with 20MHz bandwidth and 1μF ceramic capacitor.
4. *4 MTBF is test by MIL-HDBK-217F @Ta=25 ºC, Full load, GB.
5. *5 The EMI need external filter circuit for class A/B. (See the application note)
6. *6 External input capacitor required 680μF/100 V.
7. All specifications valid at nominal input voltage, full load and 25˚C after warm-up time unless otherwise stated.