DATASHEET

DC/DC-Converter
TP350-Series
350Watt

- **Efficiency to 92%**
- **Safety meets EN60950-1**
- **Half-brick Package**
- **OCP/ OVP/ OTP**
- **continuous short circuit Protection**
- **Remote ON/OFF**

RoHS compliant

Model Number	Input Voltage	Output Voltage	Output Current	Input No Load	Current Full Load	% Eff.	Max capacitive Load
TP350-24S33	18 - 36 V	3.3 VDC	70A	140 mA	10.94 A	88	10 mF
TP350-24S05	18 - 36 V	5 VDC	70 A	260 mA	16.39 A	89	10 mF
TP350-24S12	18 - 36 V	12 VDC	29.2 A	250 mA	16.13 A	90	10 mF
TP350-24S24	18 - 36 V	24 VDC	14.6A	60 mA	16.40 A	89	10 mF
TP350-24S28	18 - 36 V	28 VDC	12.5 A	60 mA	16.11 A	90	7 mF(2)
TP350-48S33	36 - 75 V	3.3 VDC	70A	90 mA	5.41 A	89	10 mF
TP350-48S05	36 - 75 V	5 VDC	70 A	130 mA	8.01 A	91	10 mF
TP350-48S12	36 - 75 V	12 VDC	29.2 A	100 mA	7.89 A	92	10 mF
TP350-48S24	36 - 75 V	24 VDC	14.6A	60 mA	7.98 A	91	10 mF
TP350-48S28	36 - 75 V	28 VDC	12.5 A	60 mA	7.93 A	92	7 mF(2)

All Specifications are Typical at Nominal Line, Full load, and 25°C Unless Otherwise Noted /

NOTE:
1. Nominal Input Voltage 24, 48VDC
2. The output terminal of 28Vout models requireda minimum capacitor 100µF to maintain Specified regulation.

INPUT SPECIFICATIONS

INPUT VOLTAGE RANGE ..... 24V ..... 18V – 36V
48V ..... 36V – 75V

INPUT SURGE VOLTAGE (100ms max)..... 24V ..... 50VDC max
48V ..... 100VDC max

INPUT UNDER-VOLTAGE LOCKOUT.....24Vin power down ..... 16V typ
24Vin power up ..... 17V typ
48Vin power down ..... 33V typ
48Vin power up ..... 35V typ

Technische Änderungen vorbehalten / Technical changes reserved R1520a

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POSITIVE LOGIC REMOTE ON/OFF CONTROL
Logic Compatibility ..... Open Collector TTL, ref. to –Vin
Module ON ..... >+3.5 to 75VDC or Open Circuit
Module OFF..... <1.2 Vdc
INPUT FILTER..... PI Type

OUTPUT SPECIFICATIONS

Voltage Accuracy..... ±1.5% max
Transient Response: 25% step load change ..... < 500µs
Ripple and Noise, 20MHz BW ..... Vo = 3,3V & 5V..... max. 100mVpp.
Vo = 12V ..... max. 120mVpp.
Vo = 24V & 28V ..... max. 280mVpp.
Temperature Coefficient ..... ±0.03%/C max
Line Regulation (1) ..... ±0.2%.
Load Regulation(2) ..... ±0.2%.
External Trim Adj. Range (6)..... ±10%
Short Circuit Protection ..... continuous
Over Voltage Protection..... 115 – 140%
Current Limit .....105% - 140% Nominal Output
Start up time ..... 175ms typ

GENERAL SPECIFICATIONS

ISOLATION VOLTAGE.....Input/ Output ..... 1500VDC max.
Input/Case, Output/ Case ..... 1500VDC max.
ISOLATION RESISTANCE .....10 MOhm
ISOLATION CAPACITANCE .....2000pF typ.
SWITCHING FREQUENCY..... 3.3V & 5V ..... 300KHz typ.
12V & 24V & 28V ..... 330KHz typ.
OPERATING TEMPERATURE RANGE..... -40°C TO +100°C
THERMAL SHUT DOWN; CASE TEMPERATURE ..... 110°Cmax.
STORAGE TEMPERATURE RANGE.....-55°C TO +105°C
CASE MATERIAL ..... Aluminium Base Plate with Plastic Case
DIMENSIONS ..... 2,28×2,40×0.52 INCHES (57.9 × 61.0 × 13.2mm)

NOTE:

1. LINE REGULATION: Measured From High Line To Low Line
2. LOAD REGULATION: Measured From Full Load To Zero Load
3. Output ripple and noise is measured with 10µF tantalum and 1µF Ceramic capacitor across output
4. Suffix “N” to the model number with negative logic remote ON/OFF
   Modul ON < 1.2Vdc
   Modul OFF > 3.5Vdc to 75Vdc or Open Circuit
5. Suffix “C” to the model number with clear mounting insert (3.2mm DIA)
6. Trim up connect a resistor between the trim pin and + Sense
7. Trim down connect a resistor between the trim pin and – Sense
8. The input terminal recommend to parallel with 220µF for 48Vin and 470µF for 24Vin; ESR < 0.7 Ohm
   To reduce the input ripple voltage.

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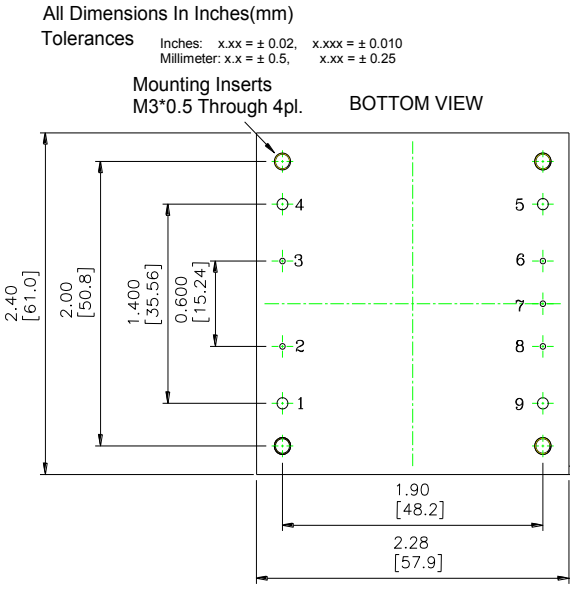
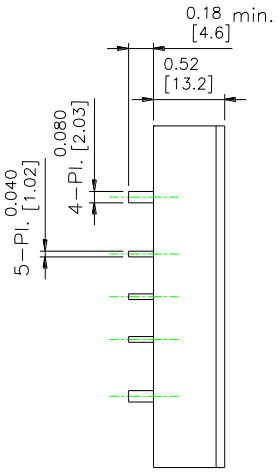
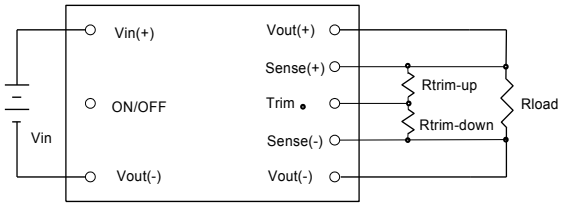
MECHANICAL SPECIFICATIONS





Pin	Function
1	+Vin
2	ON/OFF
3	CASE
4	-Vin
5	-Vout
6	-Sense
7	Trim
8	+Sense
9	+Vout

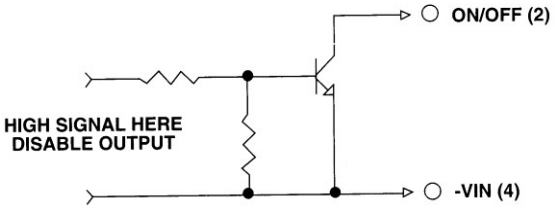
External Output TRIM



$R_{trim-down} = \left[\frac{511}{\Delta\%} - 10.22\right] k\Omega$	Example: reduction Vout -5% With Δ% = 5 →Rtrim = 92kΩ
$R_{trim-up} = \left[\frac{5.11 V_{out}(100+\Delta\%)}{1.225 \times \Delta\%} - \frac{511}{\Delta\%} - 10.22\right] k\Omega$	Example: Increasing Vout +5% With Δ% = 5 →Rtrim = 937kΩ

REMOTE ON/OFF CONTROL

Logic Compatibility	CMOS or Open collector TTL
Modul ON	>+3.5 to 75VDC or Open
Circuit	
Module OFF	<1.2 Vdc



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