

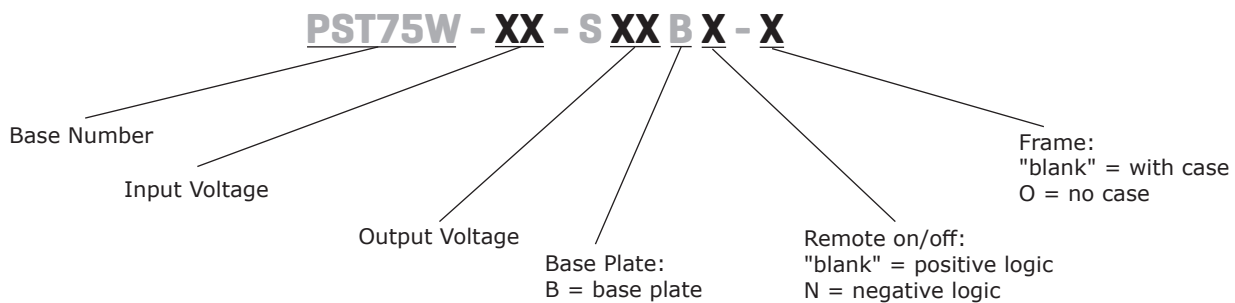
**SERIES: PST75W | DESCRIPTION: DC-DC CONVERTER**
**FEATURES**

- 75 W isolated output
- certified to IEC/EN 62368, reinforced insulation
- meets EN 50155 and EN 45545-2
- 8:1 input range, 9.5 ~ 75 Vdc
- built-in EMI filter and baseplate
- wide operating temperature range (-40 ~ 105 °C)
- remote on/off
- short circuit, over current, over voltage, over temperature, & UVLO protections



| MODEL          | input voltage range | output voltage | output current max | output power max | ripple and noise <sup>1</sup> max | efficiency typ |
|----------------|---------------------|----------------|--------------------|------------------|-----------------------------------|----------------|
|                | (Vdc)               | (Vdc)          | (A)                | (W)              | (mVp-p)                           | (%)            |
| PST75W-36-S12B | 9.5~75              | 12             | 6.25               | 75               | 150                               | 90             |
| PST75W-36-S15B | 9.5~75              | 15             | 5                  | 75               | 150                               | 90             |
| PST75W-36-S24B | 9.5~75              | 24             | 3.12               | 75               | 240                               | 90             |
| PST75W-36-S28B | 9.5~75              | 28             | 2.67               | 75               | 240                               | 90             |
| PST75W-36-S48B | 9.5~75              | 48             | 1.56               | 75               | 480                               | 90             |

Note: 1. Ripple and noise are measured peak to peak at full load, 5 ~20 MHz BW with 1µF ceramic capacitor, full load.  
 2. All specifications are measured at Ta=25°C, nominal input voltage and full output load unless otherwise specified.

**PART NUMBER KEY**


## INPUT

| parameter                          | conditions/description                   | min   | typ      | max | units   |     |
|------------------------------------|--|---|----------|-----|---------|-----|
| operating input voltage            |  | 9.5   | 36       | 75  | Vdc     |     |
| under voltage shutdown             | turn-on voltage threshold, at full load  | 8.4   | 8.8      | 9.3 | Vdc     |     |
|                                    | turn-off voltage threshold, at full load | 7.5   | 7.9      | 8.4 | Vdc     |     |
| hysteresis voltage shutdown        | at full load                             |   | 0.9      |     | Vdc     |     |
| maximum input current              | at full load, 9.5 Vdc input voltage      |   | 7.5      |     | A       |     |
| input current (no load/full load)  | Vin=36V, Io=0A                           |   |          |     |         |     |
|                                    | 12 Vdc output models                     |   | 10/2,315 |     | mA      |     |
|                                    | 15 Vdc output models                     |   | 10/2,315 |     | mA      |     |
|                                    | 24 & 48 Vdc output models                |   | 12/2,311 |     | mA      |     |
|                                    | 28 Vdc output models                     |   | 12/2,307 |     | mA      |     |
| remote on/off                      | positive logic                           | models ON: $V_{remote}$ at $I_{remote} = 0.0\mu A$ ,<br>Pin open = on   | 4.0      |     | 75      | Vdc |
|                                    |  | models OFF: $V_{remote}$ at $I_{remote} = 1.0mA$                        | 0        |     | 1.0     | Vdc |
|                                    | negative logic                           | models ON: $V_{remote}$ at $I_{remote} = 1.0mA$                         | 0        |     | 1.0     | Vdc |
|                                    |  | models OFF: $V_{remote}$ at $I_{remote} = 0.0\mu A$ ,<br>Pin open = off | 4.0      |     | 75      | Vdc |
| remote on/off current <sup>3</sup> | $I_{remote}$ at $V_{remote} = 0V$        |   | 0.3      | 1   | mA      |     |
| leakage current <sup>3</sup>       | logic high, $V_{remote} = 15V$           |   |          | 30  | $\mu A$ |     |
| off converter current              |  |   | 5        | 10  | mA      |     |

Note: 3. For positive and negative logic.

## OUTPUT

| parameter                                | conditions/description   | min | typ     | max        | units   |
|--|--|-----|---------|------------|---------|
| maximum capacitive load                  | 12 Vdc output models   |     |         | 14,000     | $\mu F$ |
|  | 15 Vdc output models   |     |         | 10,000     | $\mu F$ |
|  | 24 Vdc output models   |     |         | 3,900      | $\mu F$ |
|  | 28 Vdc output models   |     |         | 3,200      | $\mu F$ |
|  | 48 Vdc output models   |     |         | 1,100      | $\mu F$ |
| line regulation                          | measured from high line to low line  |     |         | $\pm 0.2$  | %       |
| load regulation                          | measured from full load to zero load   |     |         | $\pm 0.2$  | %       |
| voltage accuracy                         | at full load, 36 Vdc input voltage, 25°C                                     |     | $\pm 1$ |            | %       |
| switching frequency                      |  | 180 | 200     | 220        | kHz     |
| transient response                       | 75 ~ 100% step load change   |     |         | 250        | $\mu s$ |
| temperature coefficient                  | 40 ~ 105°C   |     |         | $\pm 0.02$ | %/°C    |
| remote on/off start-up time <sup>4</sup> | $V_{remote}$ to 10% $V_{o\_set}$ , remote on                                 |     | 20      |            | ms      |
| input start-up time <sup>4</sup>         | $V_{in\_min}$ to 10% $V_{o\_set}$ , power up                                 |     | 20      |            | ms      |
| rise time                                | 10% $V_{o\_set}$ to 90% $V_{o\_set}$   |     | 10      |            | ms      |
| voltage trim range                       | $P_o \leq \text{max rated power}$ , $I_o \leq I_{o\_max}$                    | -20 |         | 15         | %       |
| remote sense range                       | $P_o \leq \text{max rated power}$ , $I_o \leq I_{o\_max}$ % of nominal $V_o$ |     |         | 15         | %       |

Note: 4. At full constant resistive load.

## PROTECTIONS

| parameter                                | conditions/description              | min | typ | max | units |
|--|-------------------------------------|-----|-----|-----|-------|
| over current protection                  | auto recovery, hiccup               | 110 | 150 | 210 | %     |
| over voltage protection                  | limited voltage, % of nominal $V_o$ | 117 | 125 | 140 | %     |
| short circuit protection                 | auto recovery, continuous           |     |     |     |       |
| over temperature protection <sup>5</sup> | shutdown                            |     | 110 |     | °C    |
|  | restart threshold                   |     | 100 |     | °C    |

Note: 5. Temperature at the center part of base plate, non-latching.

**SAFETY AND COMPLIANCE**

| parameter             | conditions/description  | min     | typ     | max            | units      |
|-----------------------|---|---------|---------|----------------|------------|
| isolation voltage     | input to output, for 1 minute   |         |         | 3,000<br>4,200 | Vac<br>Vdc |
|                       | input to case (base plate), for 1 minute  |         |         | 2,100<br>3,000 | Vac<br>Vdc |
|                       | output to case (base plate), for 1 minute                                       |         |         | 1,500<br>2,100 | Vac<br>Vdc |
| isolation resistance  | input to output   | 100     |         |                | MΩ         |
| isolation capacitance | input to output   |         | 15,000  |                | pF         |
|                       | input to case (base plate)  |         | 16,000  |                | pF         |
|                       | output to case (base plate)   |         | 23,000  |                | pF         |
| safety approvals      | certified to 62368-1: EN, IEC<br>designed to meet 62368-1: UL                   |         |         |                |            |
| conducted emissions   | EN 55032 and EN 50155 compliant, class A  |         |         |                |            |
| radiated emissions    | EN 55032 and EN 50155 compliant, class A  |         |         |                |            |
| ESD                   | EN 61000-4-2 Level 3: Air ±8kV, Contact ±6kV, perf. criteria A                  |         |         |                |            |
| radiated immunity     | EN 61000-4-3 Level 3: 80~1000MHz, 20V/m, perf. criteria A                       |         |         |                |            |
| surge                 | EN 61000-4-5 Level 4: Line to earth, ±4kV, Line to line, ±2kV, perf. criteria A |         |         |                |            |
| conducted immunity    | EN 61000-4-6 Level 3: 0.15~80MHz, 10V, perf. criteria A                         |         |         |                |            |
| MTBF                  | as per MIL-HDBK-217F, 25°C  |         |         |                |            |
|                       | 12 Vdc output models  |         | 526,000 |                | hours      |
|                       | 15 Vdc output models  |         | 585,000 |                | hours      |
|                       | 24 Vdc output models  |         | 577,000 |                | hours      |
|                       | 28 Vdc output models  |         | 568,000 |                | hours      |
| 48 Vdc output models  |   | 594,000 |         | hours          |            |
| RoHS                  | yes   |         |         |                |            |

**ENVIRONMENTAL**

| parameter             | conditions/description | min | typ   | max | units |
|-----------------------|------------------------|-----|-------|-----|-------|
| operating temperature | see derating curve     | -40 |       | 105 | °C    |
| storage temperature   |                        | -40 |       | 105 | °C    |
| humidity              | non condensing         | -   |       | 95  | %     |
| operating altitude    |                        |     | 5,000 |     | m     |

## MECHANICAL

| parameter           | conditions/description                                    | min | typ | max | units |
|---------------------|---|-----|-----|-----|-------|
| base plate material | aluminum  |     |     |     |       |
| potting material    | UL 94V-0 (DC Module)                                      |     |     |     |       |
| dimensions          | without case: 4.60 x 2.40 x 1.46 [116.8 x 61.0 x 37.0 mm] |     |     |     | inch  |
|                     | with case: 4.60 x 2.49 x 1.46 [116.8 x 63.4 x 37.0 mm]    |     |     |     | inch  |
| weight              | without case  |     | 215 |     | g     |
|                     | with case   |     | 250 |     | g     |

## MECHANICAL DRAWING

units: inch[mm]

general tolerance: inches: x.xx = ±0.02, x.xxx = ±0.010

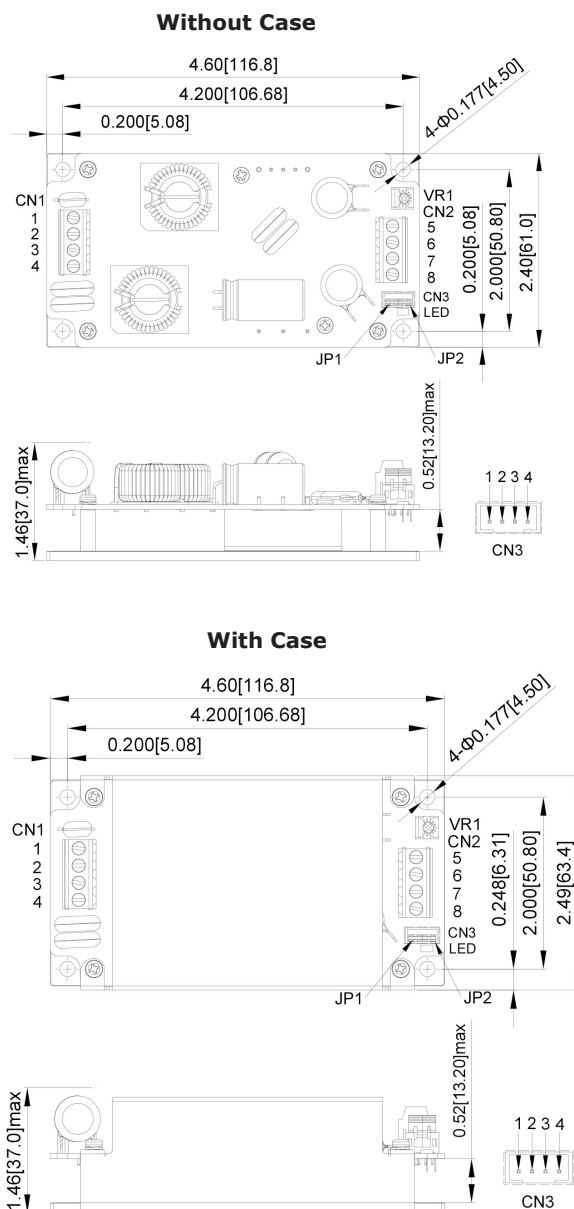
milimeters: x.x = ±0.5, x.xx = ±0.25

| PIN CONNECTIONS CN1 & CN2 |          |
|---------------------------|----------|
| PIN                       | FUNCTION |
| 1                         | +Vin     |
| 2                         | -Vin     |
| 3                         | remote   |
| 4                         | case     |
| 5                         | +Vout    |
| 6                         | +Vout    |
| 7                         | -Vout    |
| 8                         | -Vout    |

| PIN CONNECTIONS CN3 |          |
|---------------------|----------|
| PIN                 | FUNCTION |
| 1                   | -Vout    |
| 2                   | -sense   |
| 3                   | +sense   |
| 4                   | +Vout    |

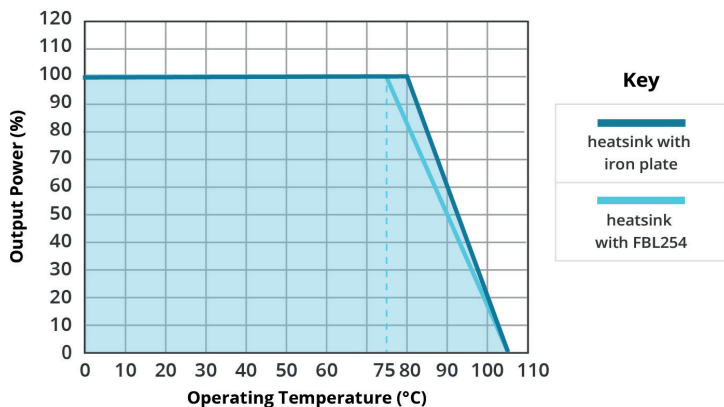
\* JP1: Short PIN1 & PIN2

\* JP2: Short PIN3 & PIN4

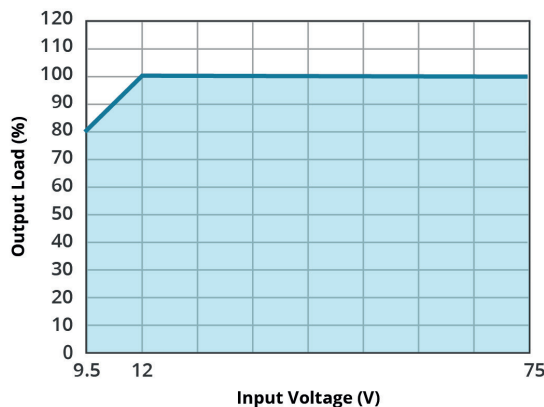


## DERATING CURVES

**TEMPERATURE DERATING CURVE**  
with heatsink ( $V_{in} = 36V$ )

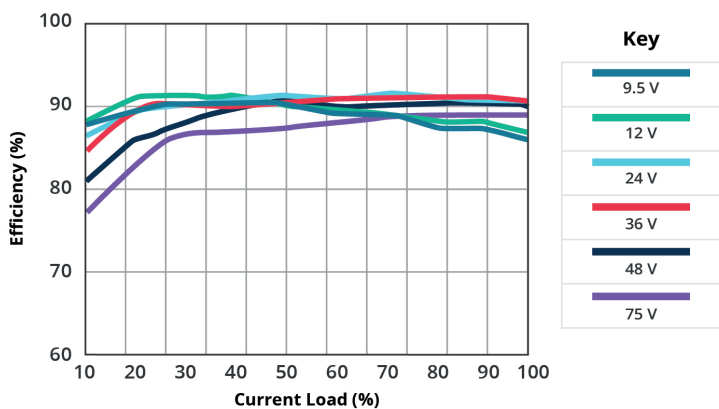


**INPUT VOLTAGE DERATING CURVE**  
with heatsink ( $V_{in} = 36V$ )

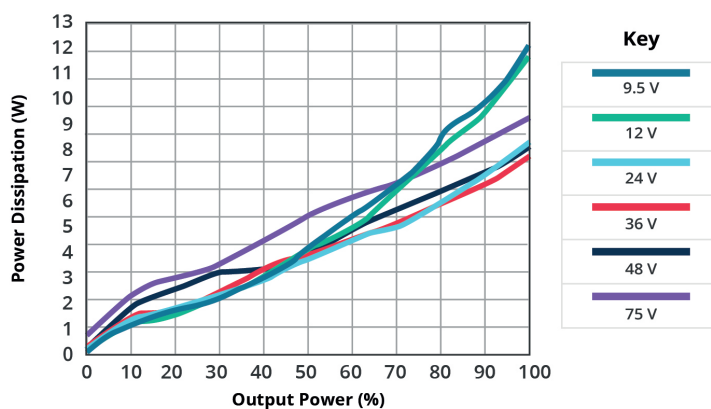


## EFFICIENCY CURVES

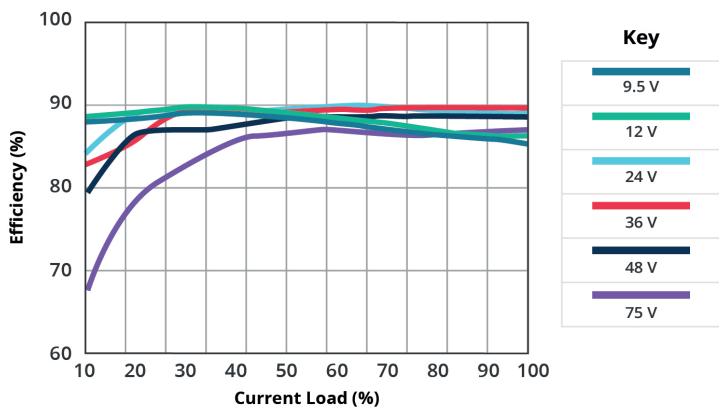
**EFFICIENCY VS INPUT CURRENT**  
PST75W-36-S12B (at 25°C)



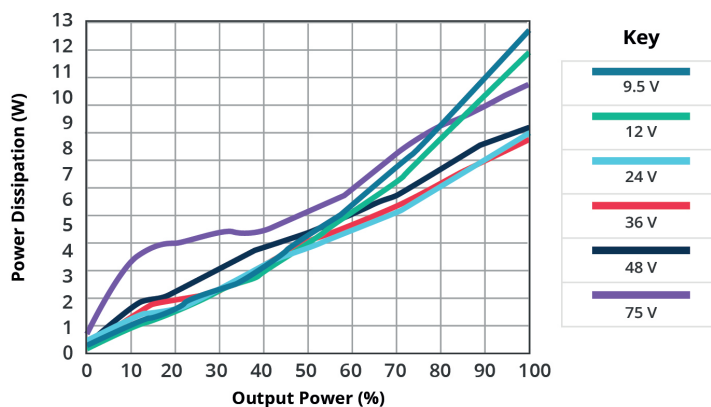
**POWER DISSIPATION VS OUTPUT POWER**  
PST75W-36-S12B (at 25°C)



**EFFICIENCY VS INPUT CURRENT**  
PST75W-36-S15B (at 25°C)

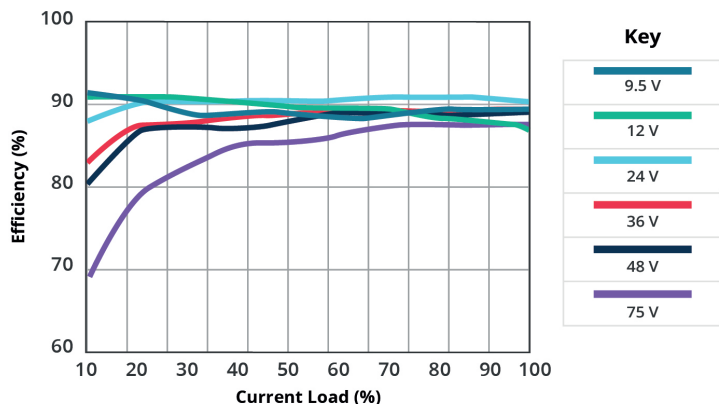


**POWER DISSIPATION VS OUTPUT POWER**  
PST75W-36-S15B (at 25°C)

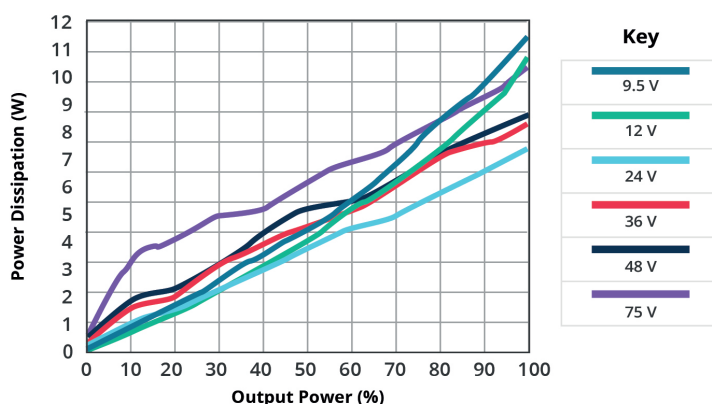


## EFFICIENCY CURVES (CONTINUED)

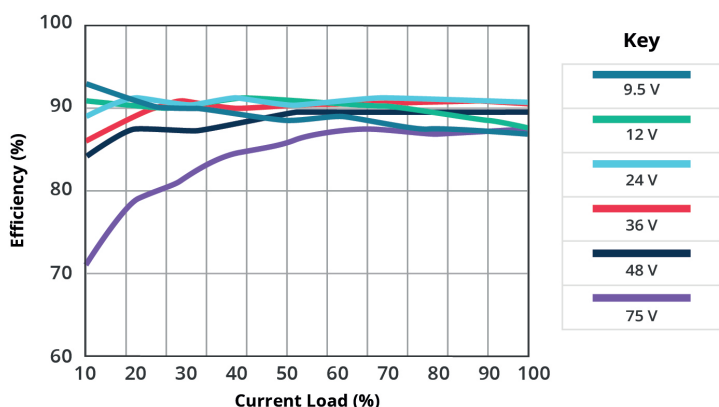
**EFFICIENCY VS INPUT CURRENT**  
PST75W-36-S24B (at 25°C)



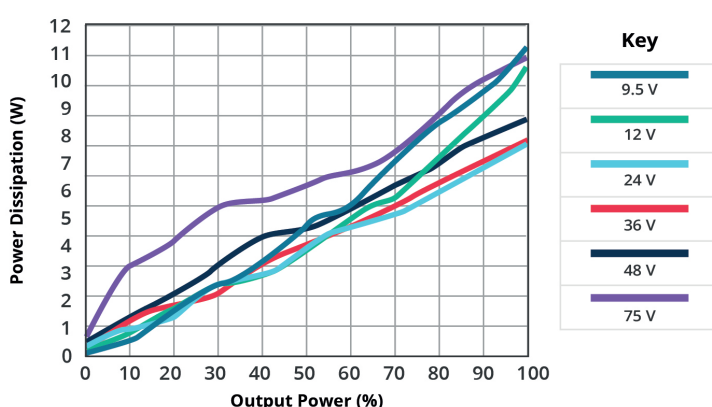
**POWER DISSIPATION VS OUTPUT POWER**  
PST75W-36-S24B (at 25°C)



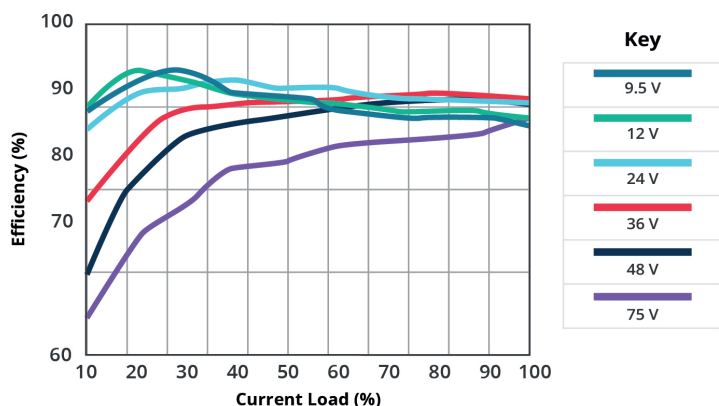
**EFFICIENCY VS INPUT CURRENT**  
PST75W-36-S28B (at 25°C)



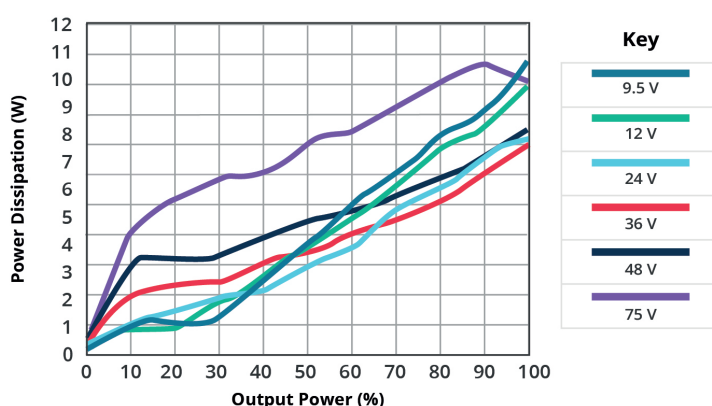
**POWER DISSIPATION VS OUTPUT POWER**  
PST75W-36-S28B (at 25°C)



**EFFICIENCY VS INPUT CURRENT**  
PST75W-36-S48B (at 25°C)



**POWER DISSIPATION VS OUTPUT POWER**  
PST75W-36-S48B (at 25°C)



## REVISION HISTORY

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| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 01/24/2024 |

The revision history provided is for informational purposes only and is believed to be accurate.



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