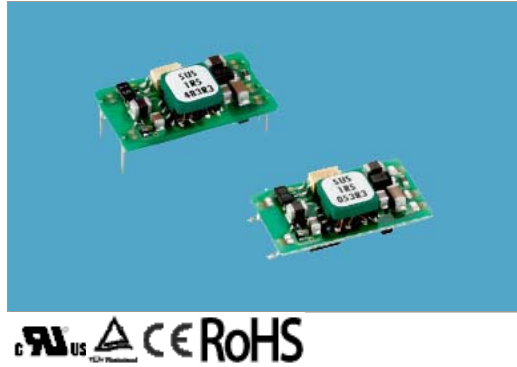


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## SUS1R5



### Features

- High reliability : not built-in aluminum and tantalum electrolytic capacitor
- SMD mounting type and through-hole mounting type
- High efficiency (synchronous rectifier circuit)
- Built-in Over Current Protection
- RoHS Compliant

### Safety Agency Approvals

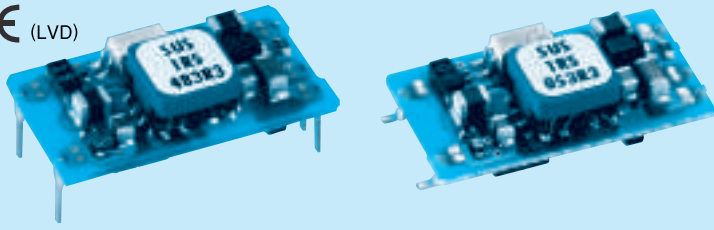
UL1950, C-UL, EN60950

### CE Markings

Low Voltage Directive

**5 year warranty(refer to Instruction Manual)**

| Model       | Input Voltage [V] | Output Wattage [W] | DC Output [V/A] |
|-------------|-------------------|--------------------|-----------------|
| SUS1R5053R3 | DC 4.5 - 9        | 1.32               | 3.3V<br>0.4A    |
| SUS1R50505  | DC 4.5 - 9        | 1.5                | 5V<br>0.3A      |
| SUS1R50512  | DC 4.5 - 9        | 1.56               | 12V<br>0.13A    |
| SUS1R50515  | DC 4.5 - 9        | 1.5                | 15V<br>0.1A     |
| SUS1R5123R3 | DC 9 - 18         | 1.32               | 3.3V<br>0.4A    |
| SUS1R51205  | DC 9 - 18         | 1.5                | 5V<br>0.3A      |
| SUS1R51212  | DC 9 - 18         | 1.56               | 12V<br>0.13A    |
| SUS1R51215  | DC 9 - 18         | 1.5                | 15V<br>0.1A     |
| SUS1R524R3  | DC 18 - 36        | 1.32               | 3.3V<br>0.4A    |
| SUS1R52405  | DC 18 - 36        | 1.5                | 5V<br>0.3A      |
| SUS1R52412  | DC 18 - 36        | 1.56               | 12V<br>0.13A    |
| SUS1R52415  | DC 18 - 36        | 1.5                | 15V<br>0.1A     |
| SUS1R5483R3 | DC 36 - 76        | 1.32               | 3.3V<br>0.4A    |
| SUS1R54805  | DC 36 - 76        | 1.5                | 5V<br>0.3A      |
| SUS1R54812  | DC 36 - 76        | 1.56               | 12V<br>0.13A    |
| SUS1R54815  | DC 36 - 76        | 1.5                | 15V<br>0.1A     |



- ① Series name  
 ② Single output  
 ③ Output wattage  
 ④ Input voltage  
 ⑤ Output voltage  
 ⑥ Mounting type  
   B : SMD  
   C : DIP  
 ⑦ Packing form  
   Blank: Plastic cover  
   P : Pallet (SMD type)

| MODEL                 | SUS1R5053R3   | SUS1R50505 | SUS1R50512 | SUS1R50515 | SUS1R5123R3 | SUS1R51205 | SUS1R51212 | SUS1R51215 |
|-----------------------|---------------|------------|------------|------------|-------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 1.32          | 1.5        | 1.56       | 1.5        | 1.32        | 1.5        | 1.56       | 1.5        |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3        | 5          | 12         | 15          | 3.3        | 5          | 12         |
|                       | CURRENT[A]    | 0.4        | 0.3        | 0.13       | 0.1         | 0.4        | 0.3        | 0.1        |

## SPECIFICATIONS

|        | MODEL                      | SUS1R5053R3                                          | SUS1R50505  | SUS1R50512    | SUS1R50515    | SUS1R5123R3 | SUS1R51205  | SUS1R51212    | SUS1R51215    |
|--------|----------------------------|------------------------------------------------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| INPUT  | VOLTAGE[V]                 | DC4.5 - 9                                            |             |               |               | DC9 - 18    |             |               |               |
|        | CURRENT[A] *2              | 0.377typ                                             | 0.405typ    | 0.422typ      | 0.405typ      | 0.153typ    | 0.164typ    | 0.171typ      | 0.164typ      |
|        | EFFICIENCY[%] *2           | 70typ                                                | 74typ       | 74typ         | 74typ         | 72typ       | 76typ       | 76typ         | 76typ         |
|        |                            |                                                      |             |               |               |             |             |               |               |
| OUTPUT | VOLTAGE[V]                 | 3.3                                                  | 5           | 12            | 15            | 3.3         | 5           | 12            | 15            |
|        | CURRENT[A]                 | 0.4                                                  | 0.3         | 0.13          | 0.1           | 0.4         | 0.3         | 0.13          | 0.1           |
|        | LINE REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max       | 20max       | 48max         | 60max         |
|        | LOAD REGULATION[mV]        | 40max                                                | 40max       | 100max        | 120max        | 40max       | 40max       | 100max        | 120max        |
|        | RIPPLE[mVp-p]              | -20 to +55°C *3                                      | 80max       | 80max         | 120max        | 120max      | 80max       | 80max         | 120max        |
|        |                            | -40 to -20°C *3                                      | 120max      | 120max        | 150max        | 150max      | 120max      | 150max        | 150max        |
|        | RIPPLE NOISE[mVp-p]        | -20 to +55°C *3                                      | 120max      | 120max        | 150max        | 150max      | 120max      | 150max        | 150max        |
|        |                            | -40 to -20°C *3                                      | 200max      | 200max        | 200max        | 200max      | 200max      | 200max        | 200max        |
|        | TEMPERATURE REGULATION[mV] | -20 to +55°C                                         | 50max       | 50max         | 150max        | 180max      | 50max       | 50max         | 150max        |
|        |                            | -40 to +55°C                                         | 80max       | 80max         | 240max        | 290max      | 80max       | 80max         | 240max        |
|        | DRIFT[mV] *4               | 20max                                                | 20max       | 48max         | 60max         | 20max       | 20max       | 48max         | 60max         |
|        | START-UP TIME[ms]          | 20max (Minimum input, Io=100%)                       |             |               |               |             |             |               |               |
|        | VOLTAGE ADJUSTMENT RANGE   | Fixed (TRM pin open) ±5% adjustable by external VR   |             |               |               |             |             |               |               |
|        | VOLTAGE SETTING[V] (±3%)   | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42 | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |
|        | OVERCURRENT PROTECTION     | Works over 105% of rating and recovers automatically |             |               |               |             |             |               |               |

 PROTECTION  
CIRCUIT AND  
OTHERS

| MODEL                 | SUS1R5243R3   | SUS1R52405 | SUS1R52412 | SUS1R52415 | SUS1R5483R3 | SUS1R54805 | SUS1R54812 | SUS1R54815 |
|-----------------------|---------------|------------|------------|------------|-------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 1.32          | 1.5        | 1.56       | 1.5        | 1.32        | 1.5        | 1.56       | 1.5        |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3        | 5          | 12         | 15          | 3.3        | 5          | 12         |
|                       | CURRENT[A]    | 0.4        | 0.3        | 0.13       | 0.1         | 0.4        | 0.3        | 0.1        |

## SPECIFICATIONS

|        | MODEL                      | SUS1R5243R3                                          | SUS1R52405  | SUS1R52412    | SUS1R52415    | SUS1R5483R3 | SUS1R54805  | SUS1R54812    | SUS1R54815    |
|--------|----------------------------|------------------------------------------------------|-------------|---------------|---------------|-------------|-------------|---------------|---------------|
| INPUT  | VOLTAGE[V]                 | DC18 - 36                                            |             |               |               | DC36 - 76   |             |               |               |
|        | CURRENT[A] *2              | 0.076typ                                             | 0.082typ    | 0.084typ      | 0.081typ      | 0.038typ    | 0.041typ    | 0.042typ      | 0.041typ      |
|        | EFFICIENCY[%] *2           | 72typ                                                | 76typ       | 77typ         | 77typ         | 72typ       | 76typ       | 77typ         | 77typ         |
|        |                            |                                                      |             |               |               |             |             |               |               |
| OUTPUT | VOLTAGE[V]                 | 3.3                                                  | 5           | 12            | 15            | 3.3         | 5           | 12            | 15            |
|        | CURRENT[A]                 | 0.4                                                  | 0.3         | 0.13          | 0.1           | 0.4         | 0.3         | 0.13          | 0.1           |
|        | LINE REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max       | 20max       | 48max         | 60max         |
|        | LOAD REGULATION[mV]        | 40max                                                | 40max       | 100max        | 120max        | 40max       | 40max       | 100max        | 120max        |
|        | RIPPLE[mVp-p]              | -20 to +55°C *3                                      | 80max       | 80max         | 120max        | 120max      | 80max       | 80max         | 120max        |
|        |                            | -40 to -20°C *3                                      | 120max      | 120max        | 150max        | 150max      | 120max      | 150max        | 150max        |
|        | RIPPLE NOISE[mVp-p]        | -20 to +55°C *3                                      | 120max      | 120max        | 150max        | 150max      | 120max      | 150max        | 150max        |
|        |                            | -40 to -20°C *3                                      | 200max      | 200max        | 200max        | 200max      | 200max      | 200max        | 200max        |
|        | TEMPERATURE REGULATION[mV] | -20 to +55°C                                         | 50max       | 50max         | 150max        | 180max      | 50max       | 50max         | 150max        |
|        |                            | -40 to +55°C                                         | 80max       | 80max         | 240max        | 290max      | 80max       | 80max         | 240max        |
|        | DRIFT[mV] *4               | 20max                                                | 20max       | 48max         | 60max         | 20max       | 20max       | 48max         | 60max         |
|        | START-UP TIME[ms]          | 20max (Minimum input, Io=100%)                       |             |               |               |             |             |               |               |
|        | VOLTAGE ADJUSTMENT RANGE   | Fixed (TRM pin open) ±5% adjustable by external VR   |             |               |               |             |             |               |               |
|        | VOLTAGE SETTING[V] (±3%)   | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42 | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |
|        | OVERCURRENT PROTECTION     | Works over 105% of rating and recovers automatically |             |               |               |             |             |               |               |

 PROTECTION  
CIRCUIT AND  
OTHERS

## GENERAL SPECIFICATIONS

|             |                                      |                                                                                              |
|-------------|--------------------------------------|----------------------------------------------------------------------------------------------|
| ISOLATION   | INPUT-OUTPUT                         | AC500V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20 $\pm$ 15°C)               |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85°C, 20 - 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max       |
|             | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100°C, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max                          |
|             | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis |
|             | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                           |
| SAFETY      | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                   |
| OTHERS      | CASE SIZE/WEIGHT                     | 21.4 X 6.5 X 12.2mm (W X H X D) / 2g max                                                     |
|             | COOLING METHOD                       | Convection/Forced air                                                                        |

\*1 SUW1R5xx12/SUW1R5xx15 is available as single output, +24V/+30V.

\*2 Rated input 5V, 12V, 24V or 48V DC Io=100%

\*3 Ripple and Ripple Noise is measured by using measuring board with capacitor with in 25mm from output pin terminals.

\*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.

\* Parallel operation with other model is not possible.

## External view

