



## Hall Effect Current Sensor S21S180D15JN

### Features:

- Closed Loop type
- Current or voltage output
- Conversion ratio  $K = 1:4000$
- Panel mounting with JST connector
- Aperture
- Insulated plastic case according to UL94V0

### Advantages:

- Excellent accuracy and linearity
- Low temperature drift
- Wide frequency bandwidth
- No insertion loss
- High Immunity to external interferences
- Optimised response time
- Current overload capability

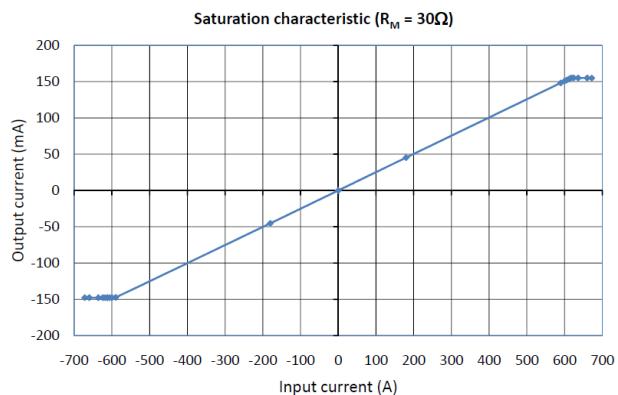
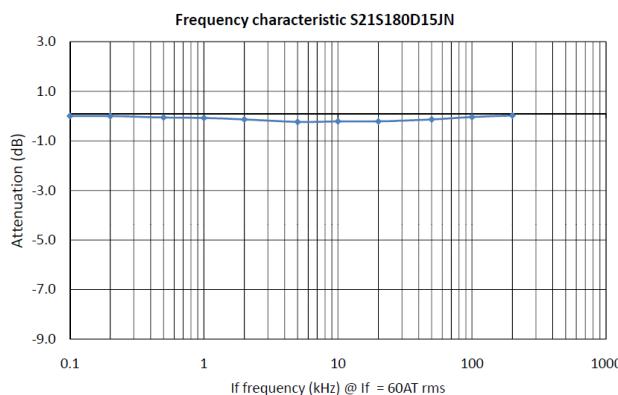
### Specifications

$T_A=25^\circ\text{C}$ ,  $V_{CC}=\pm 15\text{V}$

Parameters	Symbol	S21S180D15JN
Rated Current	$I_f$	180A
Maximum Current <sup>1</sup>	$I_{fmax}$	$\pm 540\text{A} @ T_A=25^\circ\text{C}$ $5\Omega \leq R_m \leq 30\Omega$ $\pm 540\text{A} @ T_A=80^\circ\text{C}$ $5\Omega \leq R_m \leq 20\Omega$
Measuring resistance $I_f = \pm A_{DC} @ 80^\circ\text{C}$	$R_m$	$0 - 68\Omega @ V_{CC} \pm 12\text{V}$ $0 - 100\Omega @ V_{CC} \pm 15\text{V}$
Conversion Ratio	$K$	1 : 4000
Output Current	$I_{OUT}$	$\pm 45\text{mA}$
Offset Current	$I_{OE}$	$\leq \pm 0.2\text{mA} @ I_f = 0\text{A}$
Output Current Accuracy	$X$	$I_{OUT} \pm 1\% \text{ (without } I_{OE})$
Output Linearity	$\epsilon_L$	$\leq \pm 0.3\% @ I_f$
Supply Voltage <sup>2</sup>	$V_{CC}$	$\pm 12\text{V} \pm 5\%$
Consumption Current	$I_{CC}$	$\leq \pm 16\text{mA} \text{ (Output Current is not included)}$
Response Time <sup>3</sup>	$t_r$	$\leq 1\mu\text{s} @ dI/dt = 100\text{A} / \mu\text{s}$
Output Temperature Characteristic	$TCl_{OUT}$	$\leq \pm 0.02\% / ^\circ\text{C} @ I_f$
Offset Temperature Characteristic	$TCl_{OE}$	$\leq \pm 0.01\text{mA} / ^\circ\text{C} @ I_f = 0\text{A}$
Hysteresis allowance	$I_{OH}$	$\leq 0.2\text{mA} (0\text{A} \Leftrightarrow I_f)$
Insulation Withstanding	$V_d$	AC 2500V, for 1 minute (sensing current 0.5mA), inside of aperture $\Leftrightarrow$ terminal
Insulation Resistance	$R_{IS}$	500M $\Omega$ (@ DC 500V) inside of aperture $\Leftrightarrow$ terminal
Frequency Bandwidth	$f$	DC .. 200 kHz
Secondary Coil Resistance	$R_s$	48 $\Omega$ @ 25 $^\circ\text{C}$ 60 $\Omega$ @ 80 $^\circ\text{C}$
Operating Temperature	$T_A$	$-30^\circ\text{C} \sim +80^\circ\text{C}$
Storage Temperature	$T_s$	$-40^\circ\text{C} \sim +85^\circ\text{C}$

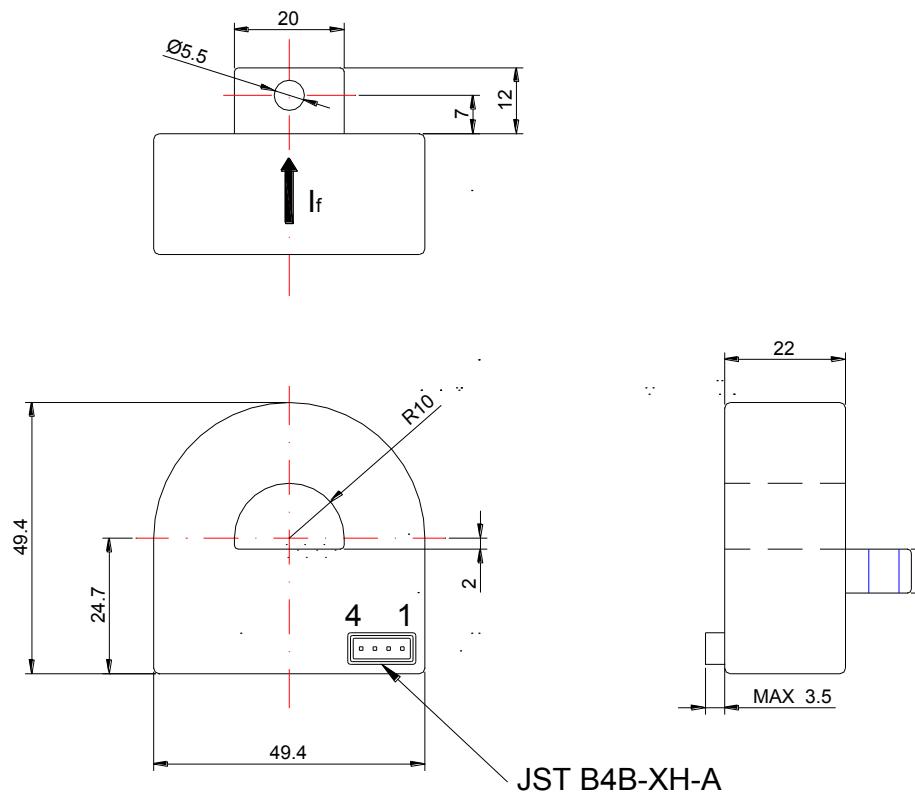
<sup>1</sup> @  $V_{CC}=\pm 15\text{V}$  for 10 Seconds — <sup>2</sup> Rated Current is restricted by  $V_{CC}$  — <sup>3</sup> Time between 10% input current full scale and 90% of sensor output full scale

### Electrical Performances



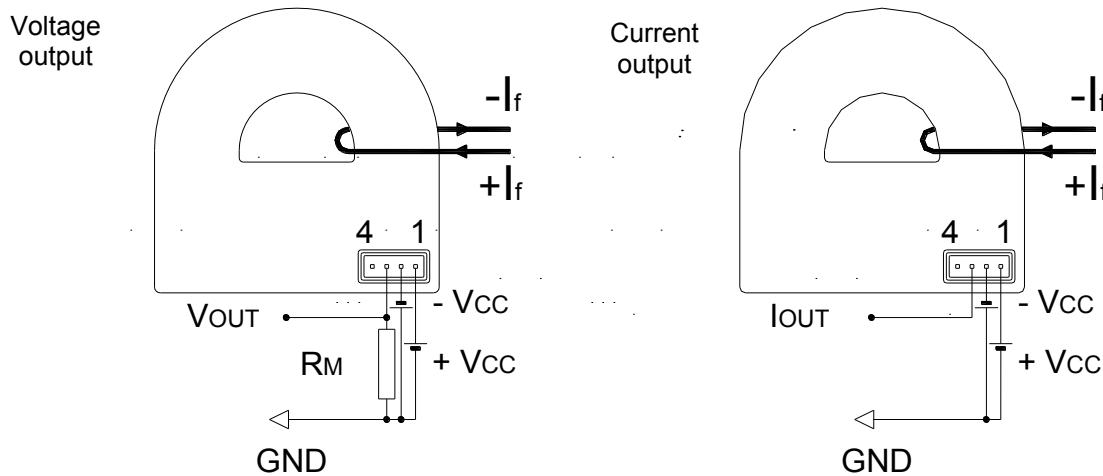
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## Mechanical dimensions in mm



Terminal function:  
 1. +V<sub>CC</sub>  
 2. -V<sub>CC</sub>  
 3. OUT  
 4. N.C.

## Electrical connection diagram



## Package & Weight Information

Weight	Pcs/box	Pcs/carton	Pcs/pallet
71g	25	100	1600



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