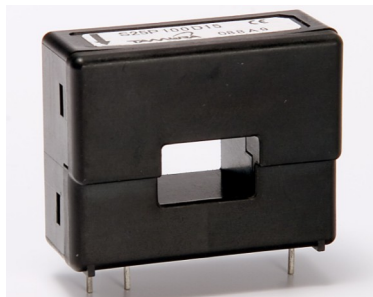


# Hall Effect Current Sensor S25P100D15X



## Features:

- Closed Loop type
- Current or voltage output
- Conversion ratio  $K_N = 1:1000$
- Printed circuit board mounting
- Aperture
- Insulated plastic case according to UL94V0
- UL Recognition

## 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

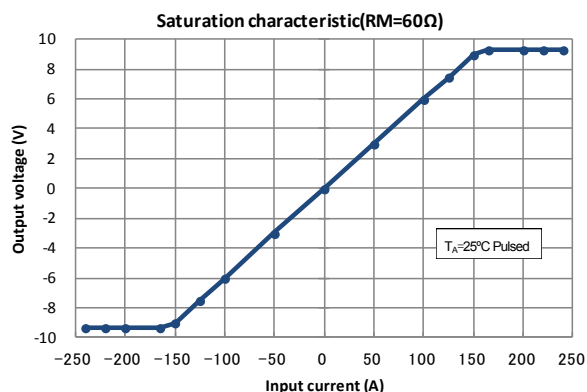
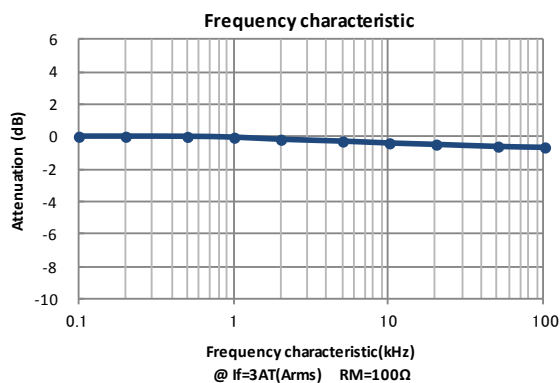
## Specifications

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

Parameters	Symbol	S25P100D15X
Primary nominal current	$I_f$	100A
Maximum current <sup>1</sup> (at $85^\circ\text{C}$ )	$I_{fmax}$	$\pm 160\text{A}$ (at $40\Omega \leq R_M \leq 50\Omega$ )
Measuring resistance ( $I_f = \pm A_{DC}$ at $85^\circ\text{C}$ )	$R_M$	$10\Omega \sim 65\Omega$ (at $V_{CC} = \pm 12\text{V}$ ) / $40\Omega \sim 95\Omega$ (at $V_{CC} = \pm 15\text{V}$ )
Conversion Ratio	$K_N$	1 : 1000
Rated output current	$I_o$	100mA
Output current accuracy <sup>2</sup> (at $I_f$ )	$X$	$I_o \pm 0.5\%$
Offset current <sup>3</sup> (at $I_f=0\text{A}$ )	$I_{of}$	$\leq \pm 0.2\text{mA}$
Output linearity <sup>2</sup> ( $0\text{A} \sim I_f$ )	$\epsilon_L$	$\leq \pm 0.15\%$ (at $I_f$ )
Power supply voltage <sup>1</sup>	$V_{CC}$	$\pm 12\text{V} \sim \pm 15\text{V} \pm 5\%$
Consumption current	$I_{CC}$	$\leq \pm 16\text{mA}$ (Output current is not included)
Response time <sup>4</sup>	$t_r$	$\leq 1.0\mu\text{s}$ (at $di/dt = 100\text{A} / \mu\text{s}$ )
Thermal drift of gain <sup>5</sup>	$T_{clo}$	$\leq \pm 0.01\% / ^\circ\text{C}$
Thermal drift of offset current	$T_{clof}$	$\leq \pm 0.5\text{mA}$ (at $T_A = -40^\circ\text{C} \leftrightarrow +85^\circ\text{C}$ )
Hysteresis error	$I_{OH}$	$\leq 0.3\text{mA}$ (at $I_f=0\text{A} \rightarrow I_f \rightarrow 0\text{A}$ )
Insulation voltage	$V_d$	AC 3000V, for 1minute (sensing current 0.5mA), inside of through hole $\leftrightarrow$ terminal
Insulation resistance	$R_{IS}$	$\geq 500\text{M}\Omega$ (at DC 500V), inside of through hole $\leftrightarrow$ terminal
Secondary coil resistance	$R_S$	$25\Omega$ (at $T_A = 70^\circ\text{C}$ ) / $28\Omega$ (at $T_A = 85^\circ\text{C}$ )
Ambient operation temperature	$T_A$	$-40^\circ\text{C} \sim +85^\circ\text{C}$
Ambient storage temperature	$T_S$	$-40^\circ\text{C} \sim +90^\circ\text{C}$

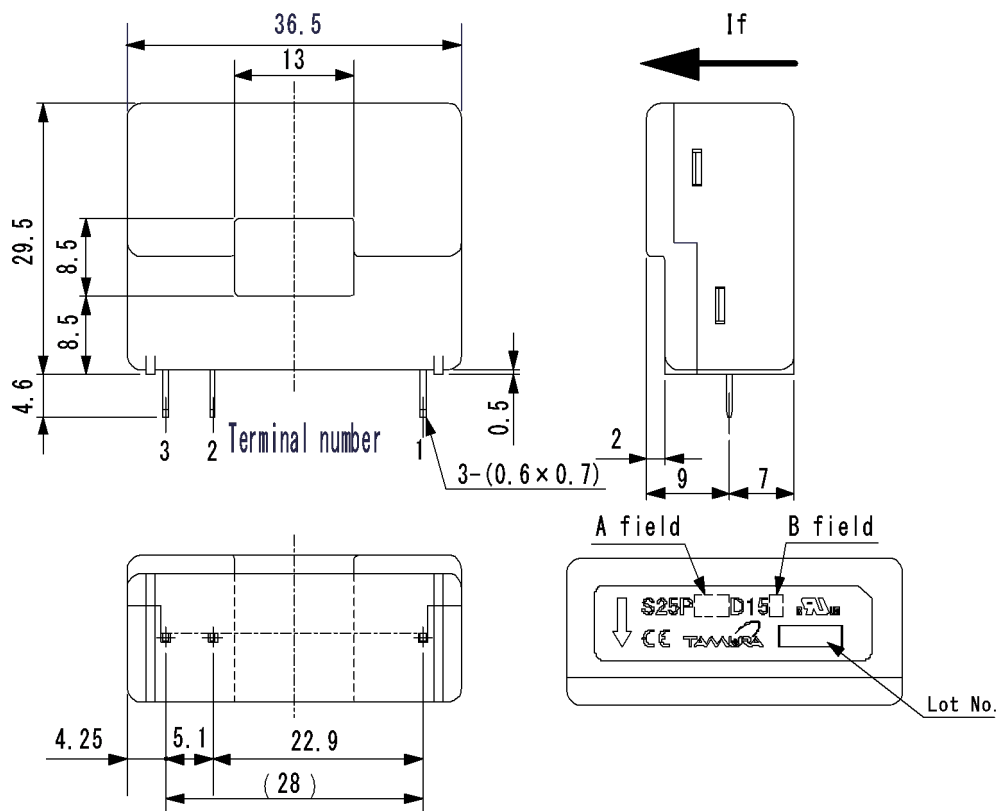
<sup>1</sup> Maximum current is restricted by  $V_{CC}$ . — <sup>2</sup> Without offset current — <sup>3</sup> After removal of core hysteresis — <sup>4</sup> Time between 90% input current full scale and 90% of sensor output full scale — <sup>5</sup> Without Thermal drift of offset current

## Electrical Performances



# Hall Effect Current Sensor S25P100D15X

## Mechanical dimensions



### NOTES

1. Unit is mm
2. Tolerance is 0.5mm

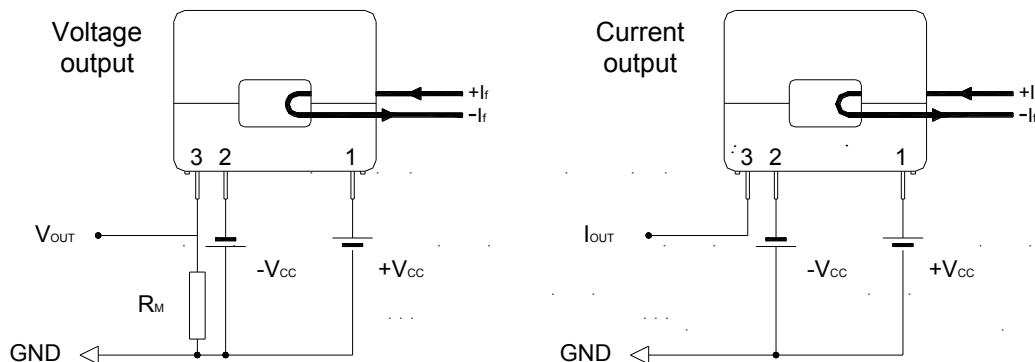
### Terminal number:

1. +Vcc(+15V)
2. -Vcc(-15V)
3. I<sub>OUT</sub>

A field display		B field display	
Current	A field	Coil turn	B field
50A	050	1000T	X
100A	100	2000T	Y
150A	150		

50A is 1000T only  
150A is 2000T only

## Electrical connection diagram



S25P100D15X

At  $I_f = 100A$  &  $V_{CC} = \pm 15V_{DC}$   
 $40\Omega \leq R_M \leq 95\Omega$

## UL Standard

UL 508 , CSA C22.2 No.14 (UL FILE No.E243511)

- For use in Pollution Degree 2 Environment.
- Maximum Surrounding air temperature rating, 85°C.

## CAUTION

Do not wrap the primary conductor around the core part of the product to increase measured current.

## Package & Weight Information

Weight	Pcs/box	Pcs/carton	Pcs/pallet
20g	100	300	7200

# Mouser Electronics

Authorized Distributor

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Tamura:

S25P100D15X