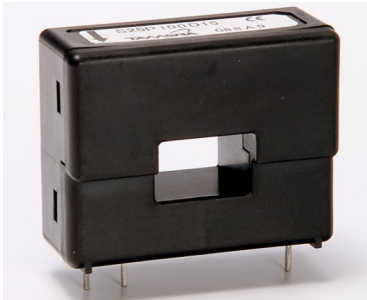


# Hall Effect Current Sensors S25P\*\*\*D15Y Series



## Features:

- Closed Loop type
- Current or voltage output
- Conversion ratio  $K_N = 1:2000$
- 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

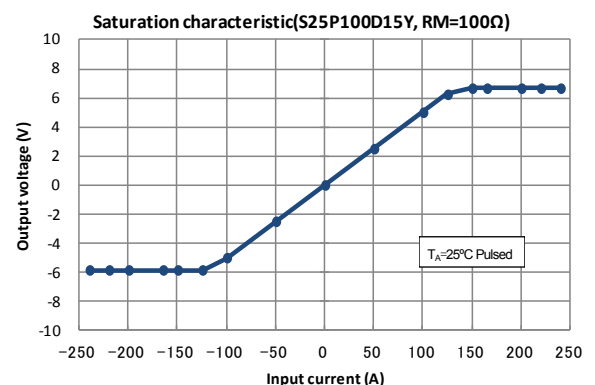
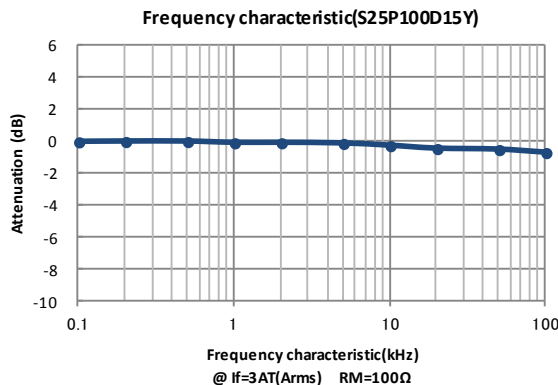
 $T_A=25^{\circ}\text{C}, V_{CC}=\pm 15\text{V}$ 

## Specifications

Parameters	Symbol	S25P100D15Y	S25P150D15Y
Primary nominal current	$I_f$	100A	150A
Maximum current <sup>1</sup> (at 85°C)	$I_{fmax}$	$\pm 150\text{A}$ (at $20\Omega \leq R_M \leq 25\Omega$ )	$\pm 200\text{A}$ ((at $0\Omega \leq R_M \leq 40\Omega$ ))
Measuring resistance ( $I_f = \pm A_{DC}$ at 85°C)	$R_M$	0Ω ~ 42Ω (at $V_{CC} = \pm 12\text{V}$ ) 20Ω ~ 102Ω (at $V_{CC} = \pm 15\text{V}$ )	0Ω ~ 15Ω (at $V_{CC} = \pm 12\text{V}$ ) 0Ω ~ 55Ω (at $V_{CC} = \pm 15\text{V}$ )
Conversion Ratio	$K_N$	1 : 2000	
Rated output current	$I_o$	50mA	75mA
Output current accuracy <sup>2</sup> (at $I_f$ )	$X$	$I_o \pm 0.5\%$	
Offset current <sup>3</sup> (at $I_f=0\text{A}$ )	$I_{of}$	$\leq \pm 0.1\text{mA}$	$\leq \pm 0.2\text{mA}$
Output linearity <sup>2</sup> (0A~ $I_f$ )	$\epsilon_L$	$\leq \pm 0.15\%$ (at $I_f$ )	$\leq \pm 0.25\%$ (at $I_f$ )
Power supply voltage <sup>1</sup>	$V_{CC}$	$\pm 12\text{V}.. \pm 15\text{V} \pm 5\%$	
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	$R_s$	120Ω (at $T_A = 70^{\circ}\text{C}$ ) 128Ω (at $T_A = 85^{\circ}\text{C}$ )	95Ω (at $T_A = 70^{\circ}\text{C}$ ) 85Ω (at $T_A = 85^{\circ}\text{C}$ )
Ambient operation temperature	$T_A$	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
Ambient storage temperature	$T_s$	$-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$	

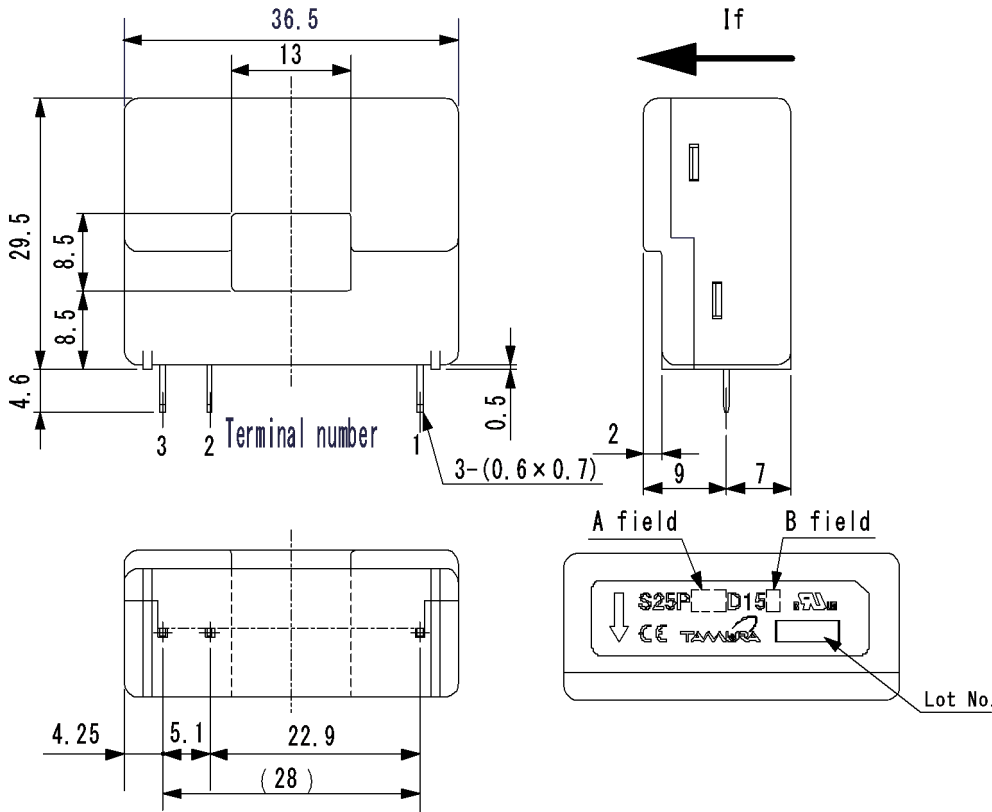
<sup>1</sup> Maximum current is restricted by  $V_{CC}$  — <sup>2</sup> Without offset current — <sup>3</sup> After removal of core hysteresis — <sup>4</sup> Time between 90% input current full scale and 90% of sensor output full scale — <sup>5</sup> Without Thermal drift of offset current — <sup>6</sup> At Small signal

## Electrical Performances



# Hall Effect Current Sensors S25P\*\*\*D15Y Series

## Mechanical dimensions



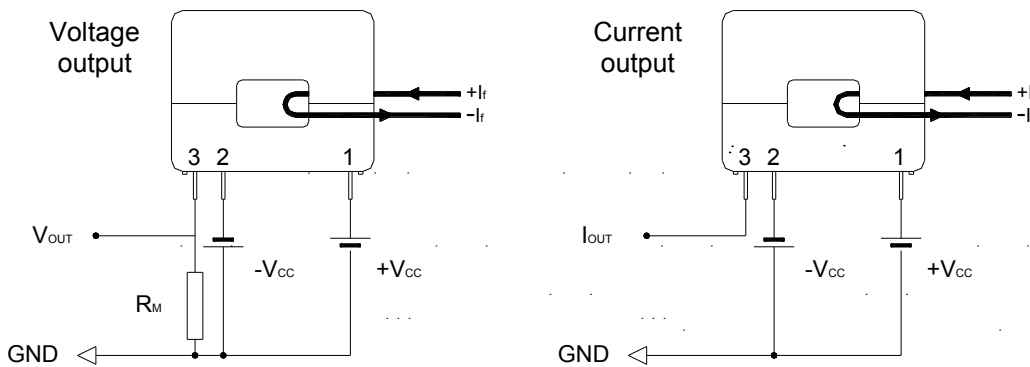
- NOTES
1. Unit is mm
  2. Tolerance is 0.5mm

- 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



S25P100D15Y  
At  $I_f = 100A$  &  $V_{CC} = \pm 15V_{DC}$   
 $20\Omega \leq R_M \leq 102\Omega$

S25P150D15Y  
At  $I_f = 150A$  &  $V_{CC} = \pm 15V_{DC}$   
 $0\Omega \leq R_M \leq 55\Omega$

## 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



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