

Hall Effect Current Sensors S25P***D15Y Series



Features:

- Closed Loop type
- Current or voltage output
- Conversion ratio K = 1:2000
- Printed circuit board mounting
- 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

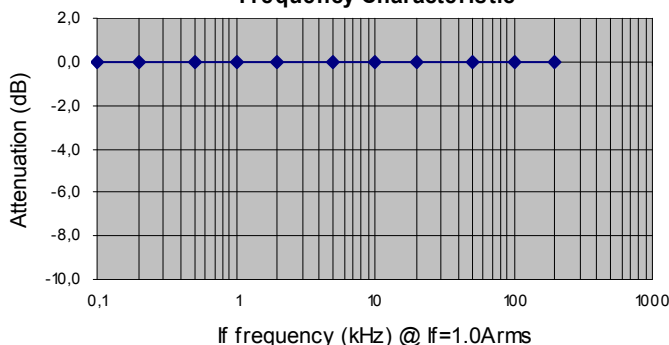
$T_A=25^{\circ}\text{C}$, $V_{CC}=\pm 15\text{V}$

Parameters	Symbol	S25P100D15Y	S25P150D15Y
Rated Current	I_f	100A	150A
Maximum Current ¹	I_{fmax}	$\pm 150\text{A}$ (@ $20\Omega \leq R_M \leq 25\Omega$)	$\pm 200\text{A}$ (@ $0\Omega \leq R_M \leq 40\Omega$)
Measuring resistance $I_f = \pm A_{DC}$ @ 85°C	R_M	$0\Omega \sim 42\Omega$ @ $V_{CC} = \pm 12\text{V}$ $20\Omega \sim 102\Omega$ @ $V_{CC} = \pm 15\text{V}$	$0\Omega \sim 15\Omega$ @ $V_{CC} = \pm 12\text{V}$ $0\Omega \sim 55\Omega$ @ $V_{CC} = \pm 15\text{V}$
Conversion Ratio	K	1 : 2000	
Output Current	I_{OUT}	$\pm 50\text{mA}$	$\pm 75\text{mA}$
Offset Current	I_{OE}	$\pm 0.1\text{mA}$ @ $I_f = 0\text{A}$	$\pm 0.2\text{mA}$ @ $I_f = 0\text{A}$
Output Current Accuracy	X	$I_{OUT} \pm 0.5\%$	
Output Linearity	ϵ_L	$\pm 0.15\%$ @ I_f	$\pm 0.25\%$ @ I_f
Supply Voltage ²	V_{CC}	$\pm 12\text{V} \sim \pm 15\text{V} \pm 5\%$	
Consumption Current	I_{CC}	$\pm 16\text{mA}$ (Output Current is not included)	
Response Time	t_r	$< 1.0\mu\text{s}$ @ $di/dt = I_f / \mu\text{s}$	
Output Temperature Characteristic	TCl_{OUT}	$\pm 0.01\% / ^{\circ}\text{C}$ @ I_f	
Offset Temperature Characteristic	TCl_{OE}	$< \pm 0.5\text{mA}$ max. @ $I_f = 0\text{A}$ ($-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$)	
Hysteresis allowance	I_{OH}	$\leq 0.3\text{mA}$ ($0\text{A} \Leftrightarrow I_f$)	
Insulation Withstanding	V_d	AC 3000V, for 1minute (sensing current 0.5mA), Primary \leftrightarrow Secondary	
Insulation Resistance	R_{IS}	$> 500\text{M}\Omega$ (@ DC 500V) Primary \leftrightarrow Secondary	
Frequency Bandwidth	f	DC .. 200 kHz	
Secondary Coil Resistance	R_S	120Ω @ $T_A = 70^{\circ}\text{C}$ 128Ω @ $T_A = 85^{\circ}\text{C}$	95Ω @ $T_A = 70^{\circ}\text{C}$ 105Ω @ $T_A = 85^{\circ}\text{C}$
Operating Temperature	T_A	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
Storage Temperature	T_S	$-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$	

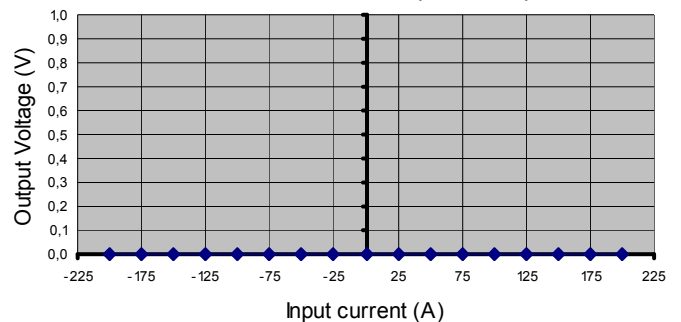
¹ @ $V_{CC}=\pm 15\text{V}$ for 10 Seconds — ² Rated Current is restricted by V_{CC}

Electrical Performance data not yet available

Frequency Characteristic

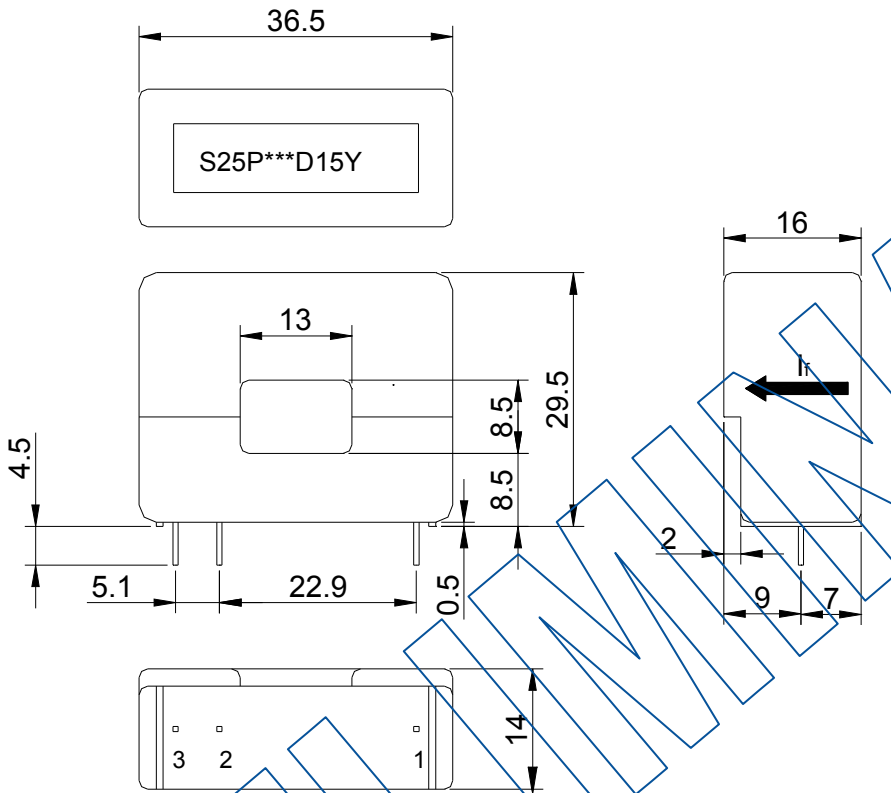


Saturation Characteristic ($R_M=???\Omega$)



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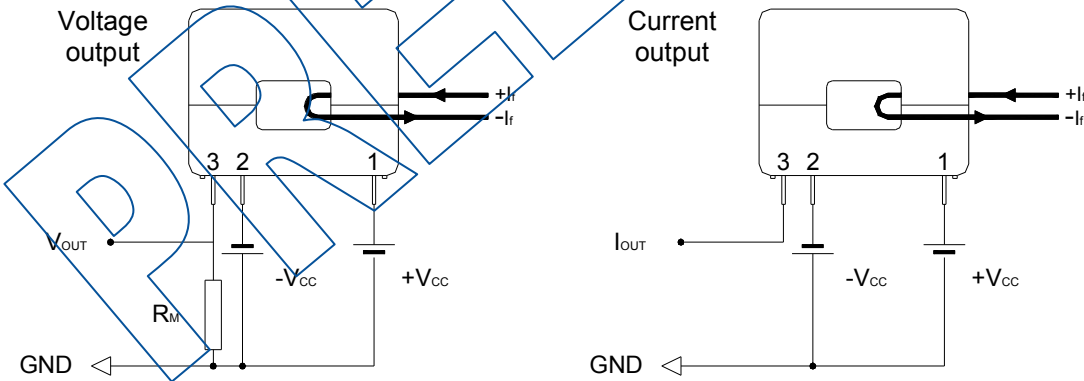
Mechanical dimensions in mm



Terminal function:

1. +V_{CC}
2. -V_{CC}
3. OUT

Electrical connection diagram



S25P100D15Y
 @ I_f = 100A & V_{CC} = ±15V_{DC}
 20Ω ≤ R_M ≤ 102Ω

S25P150D15Y
 @ I_f = 150A & V_{CC} = ±15V_{DC}
 0Ω ≤ R_M ≤ 55Ω

Package & Weight Information

Weight	Pcs/box	Pcs/carton	Pcs/pallet
26g	100	100	2400