

# Hall Effect Current Sensor S29S1T0D24Z



## Features:

- Closed Loop type
- Current or voltage output
- Conversion ratio K = 1:5000
- Panel mounting with Molex 5566-04A-210.
- Large Aperture
- Insulated plastic case according to UL94V0

## Advantages:

- Excellent accuracy and linearity
- Very low temperature drift
- No insertion loss
- High Immunity to external interferences
- Optimised response time
- Wide supply voltage range

## Specifications

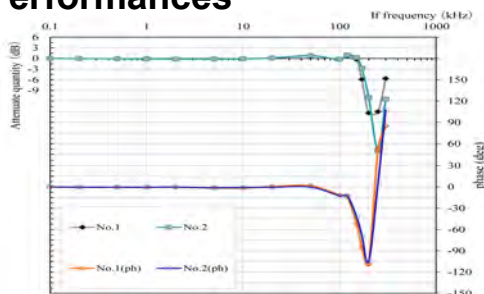
$T_A=25^{\circ}\text{C}$ ,  $V_{CC}=\pm 24\text{V}$

Parameters	Symbol	S29S1T0D24Z		
Rated Current	$I_f$	1000A		
Maximum Current	$I_{fmax}$	$\pm 2100\text{A}$ (see below)		
$I_f = \pm A_{DC}$ Measuring resistance @ 85°C	$R_M$	$\pm 15\text{V}$	70°C	1000A : 0Ω ~ 21Ω 1200A : 0Ω ~ 9Ω 1300A : 0Ω ~ 5Ω
			85°C	1000A : 0Ω ~ 18Ω 1200A : 0Ω ~ 7Ω
		$\pm 24\text{V}$	70°C	1000A : 0Ω ~ 60.5Ω 1800A : 0Ω ~ 14Ω 2100A : 0Ω ~ 4Ω
			85°C	1000A : 10Ω ~ 58.5Ω 1800A : 10Ω ~ 12Ω
Conversion Ratio	$K$	1 : 5000		
Output Current	$I_{OUT}$	$\pm 200\text{mA}$		
Offset Current	$I_{OE}$	$\leq \pm 0.4\text{mA}$ @ $I_f = 0\text{A}^1$		
Output Current Accuracy	$X$	$I_{OUT} \pm 0.4\%$ (without $I_{of}$ )		
Output Linearity	$\epsilon_L$	$\leq \pm 0.1\%$ @ $I_f$		
Supply Voltage	$V_{CC}$	$\pm 15\text{V} \sim \pm 24\text{V}$ ( $\pm 5\%$ )		
Consumption Current	$I_{CC}$	$\pm 35\text{mA}$ (Output Current is not included)		
Response Time <sup>2</sup>	$t_r$	$< 1.0\mu\text{s}$ @ $di/dt = 100\text{A} / \mu\text{s}$		
Output Temperature Characteristic	$TCI_{OUT}$	$< \pm 0.01\%$ / °C @ $I_f$ (without $TCI_{OE}$ )		
Offset Temperature Characteristic	$TCI_{OE}$	$\leq \pm 0.8\text{mA}$ max @ $I_f = 0\text{A}$		
Hysteresis allowance	$I_{OH}$	$\leq 0.2\text{mA}$ ( $0\text{A} \leftrightarrow 3 \times I_f$ )		
Insulation Withstanding	$V_d$	AC 4000V, for 1minute (sensing current 0.5mA), inside of aperture $\leftrightarrow$ terminals		
Insulation Resistance	$R_{IS}$	$> 500\text{M}\Omega$ (@ DC 500V) inside of aperture $\leftrightarrow$ terminals		
Frequency Bandwidth	$f$	DC .. 100 kHz		
Secondary Coil Resistance	$R_S$	48Ω @ $T_A = 70^{\circ}\text{C}$ 50Ω @ $T_A = 85^{\circ}\text{C}$		
Operating Temperature	$T_A$	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$		
Storage Temperature	$T_S$	$-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$		

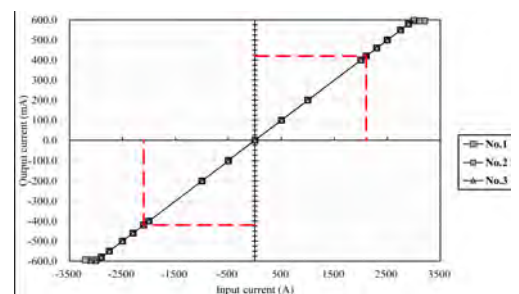
<sup>1</sup> Offset current value is after removal of core hysteresis — <sup>2</sup> Time between 90% input current full scale and 90% of sensor output full scale

## Electrical Performances

Frequency Characteristics

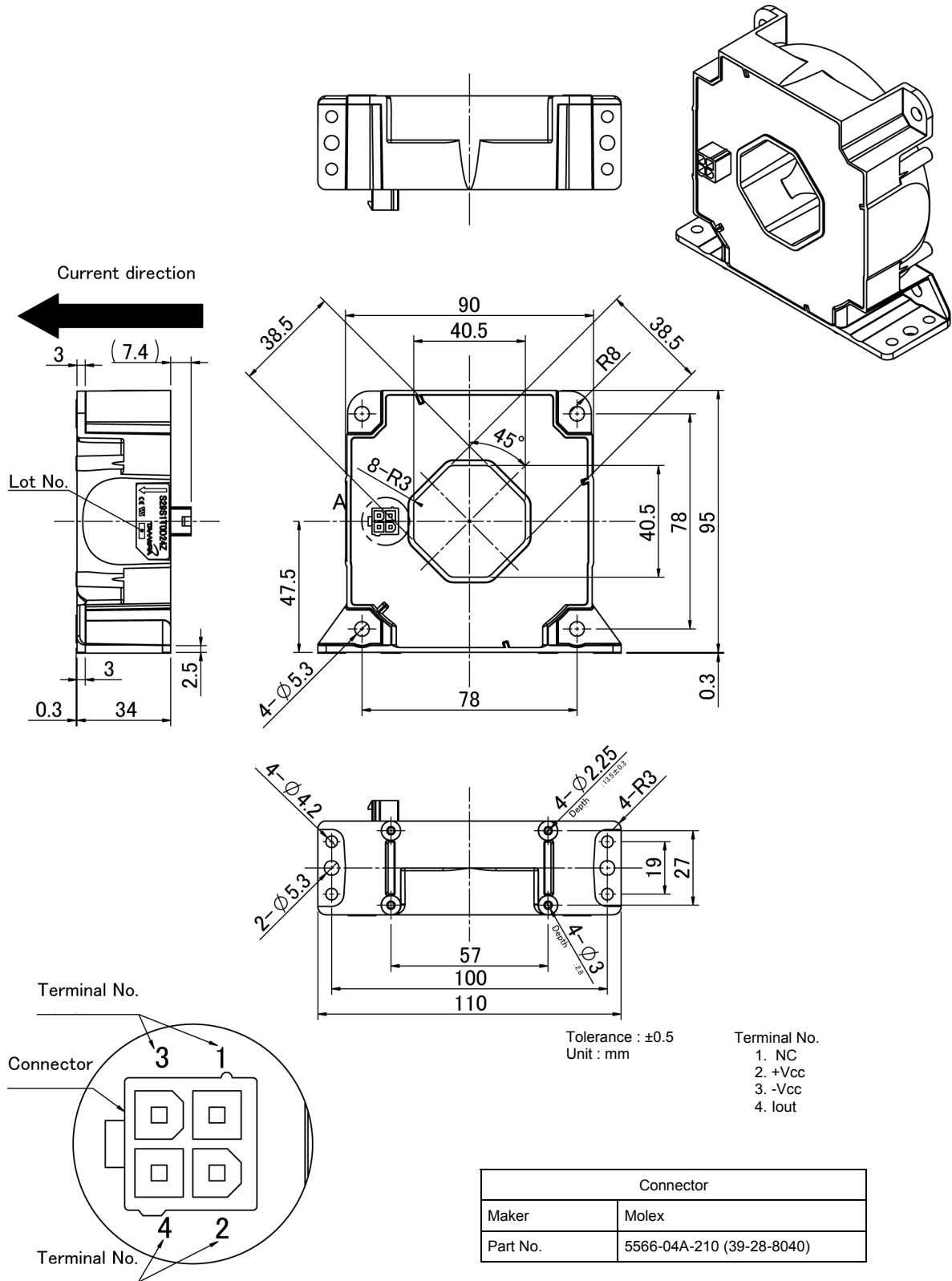


Saturation Characteristics



# Hall Effect Current Sensor S29S1T0D24Z

## Mechanical dimensions in mm



Plating of terminal : Sn

Weight : 560g

\*Unless specified, tolerance shall be ±0.5mm

# Mouser Electronics

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Tamura:

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