

# Hall Effect Current Sensors L31S\*\*\*S05FS Series



## Features:

- Open Loop type
- Panel mounting
- Unipolar power supply
- Ferrite core
- Sulfur tolerant sensors (Resistors:Gold internal Electrodes)
- Insulated plastic case according to UL94V0
- UL Recognition

## Advantage:

- Excellent accuracy and linearity
- Wide nominal current range
- Low temperature drift
- Wide frequency bandwidth
- No insertion loss
- High Immunity To External Interference
- Optimised response time
- Current overload capability

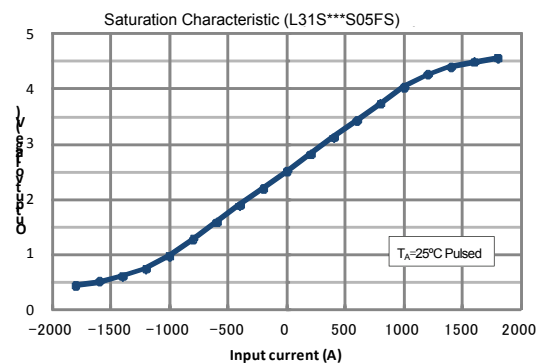
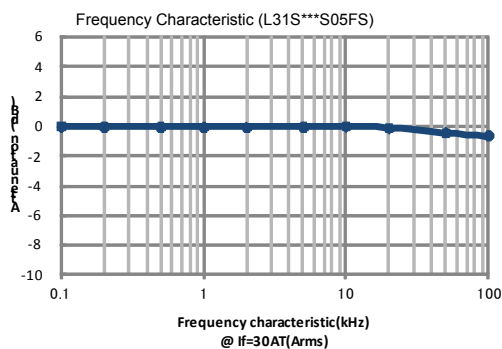
## Specifications

 $T_A=25^{\circ}\text{C}, V_{CC}=+5\text{V}, R_L=10\text{k}\Omega$ 

Parameters	Symbol	L31S050S05FS	L31S100S05FS	L31S200S05FS	L31S300S05FS	L31S400S05FS	L31S500S05FS	L31S600S05FS
Primary nominal current	$I_f$	50A	100A	200A	300A	400A	500A	600A
Saturation current	$I_{fmax}$	$\geq \pm 150\text{A}$	$\geq \pm 300\text{A}$	$\geq \pm 600\text{A}$	$\geq \pm 900\text{A}$	$\geq \pm 900\text{A}$	$\geq \pm 900\text{A}$	$\geq \pm 900\text{A}$
Rated output voltage	$V_o$	$V_{of}+0.625\text{V} \pm 0.015\text{V}$ (at $I_f$ )						
Offset voltage <sup>1</sup>	$V_{of}$	$V_{REF} \pm 0.025\text{V}$ (at $I_f = 0\text{A}$ )						
Reference voltage	$V_{REF}$	$2.5\text{V} \pm 0.020\text{V}$						
Output Linearity <sup>2</sup> (0A, 0.5 $I_f$ , $I_f$ )	$\epsilon_L$	$\leq \pm 0.5\%$ (at $I_f$ )						
Power supply voltage	$V_{CC}$	$+5\text{V} \pm 5\%$						
Consumption current	$I_{CC}$	$\leq 15\text{mA}$						
Response time <sup>3</sup>	$t_r$	$\leq 5\mu\text{s}$ (at $di/dt = 100\text{A} / \mu\text{s}$ )						
Thermal drift of gain <sup>4</sup>	$TcV_o$	$\leq \pm 1.5\text{mV}/^{\circ}\text{C}$						
Thermal drift of offset	$TcV_{of}$	$\leq \pm 1.0\text{mV}/^{\circ}\text{C}$ (at $I_f = 0\text{A}$ )			$\leq \pm 0.3\text{mV}/^{\circ}\text{C}$ (at $I_f = 0\text{A}$ )			
Thermal drift of reference	$TcV_{ref}$	$\leq \pm 0.012\% / ^{\circ}\text{C}$						
Hysteresis error (at $I_f=0\text{A} \rightarrow I_f \rightarrow 0\text{A}$ )	$V_{OH}$	$\leq 10\text{mV}$			$\leq 2.5\text{mV}$			
Insulation voltage	$V_d$	AC3300V for 1minute (sensing current 0.5mA), inside of through hole $\leftrightarrow$ terminal						
Insulation resistance	$R_{IS}$	$\geq 500\text{M}\Omega$ (at DC500V), inside of through hole $\leftrightarrow$ terminal						
Ambient operation temperature	$T_A$	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$						
Ambient storage temperature	$T_S$	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$						

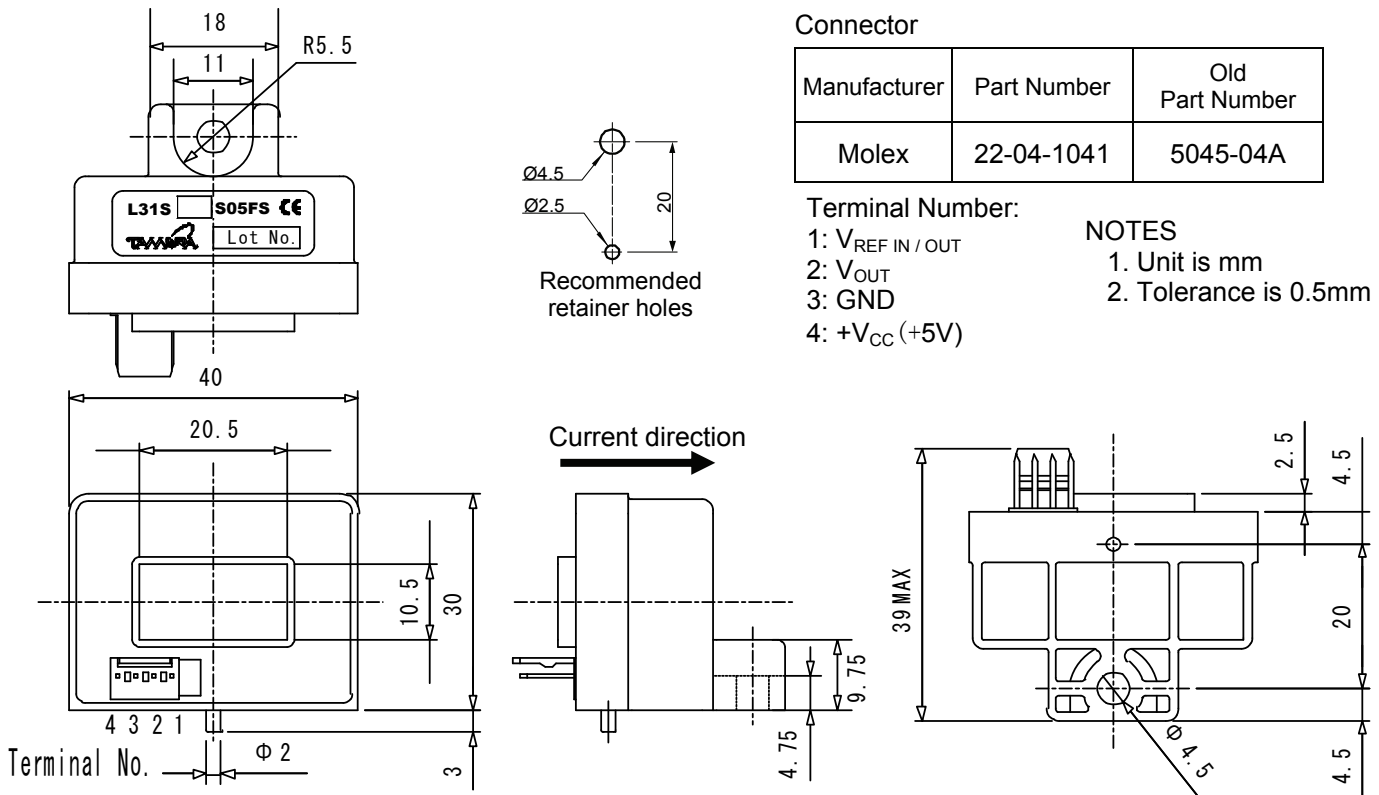
<sup>1</sup> After removal of core hysteresis — <sup>2</sup> Without offset — <sup>3</sup> Time between 10% input current full scale and 90% of sensor output full scale — <sup>4</sup> Without Thermal drift of offset

## Electrical Performances

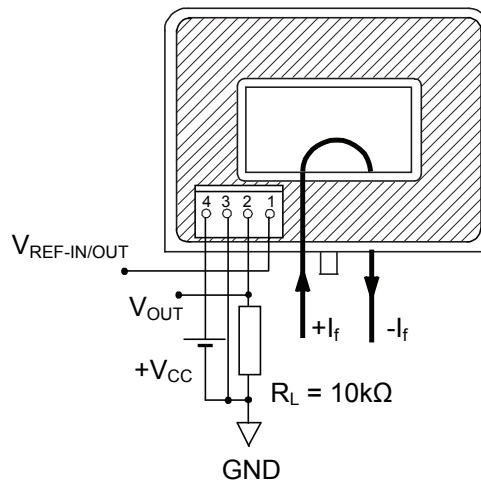


# Hall Effect Current Sensors L31S\*\*\*S05FS Series

## Mechanical dimensions in mm



## Electrical connection diagram



## 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.

## Package & Weight Information

Weight	Pcs/box	Pcs/carton	Pcs/pallet
37g	20	200	3600

