

Hall Effect Current Sensors L01Z***S05 Series



Features:

- Open Loop type
- Printed circuit board mounting
- Unipolar power supply
- Aperture for cable or bus bar
- Insulated plastic case according to UL94V0

Advantage:

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

Specifications

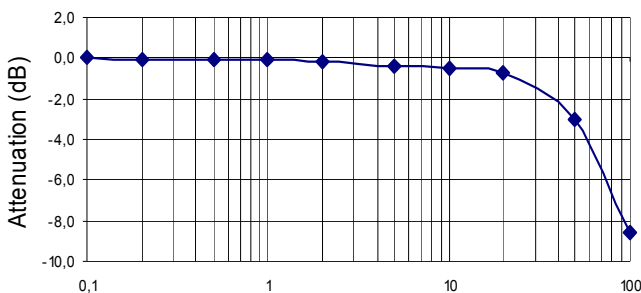
$T_A=25^{\circ}\text{C}$, $V_{CC}=+5\text{V}$, $R_L=10\text{k}\Omega$

Parameters	Symbol	L01Z050S05	L01Z100S05	L01Z150S05	L01Z200S05	L01Z300S05	L01Z400S05	L01Z500S05	L01Z600S05
Rated current	I_f	50AT	100AT	150AT	200AT	300AT	400AT	500AT	600AT
Maximum Current	I_{fmax}	$>I_f \times 1.25$							
Output Voltage	V_{OUT}	$V_{OE}+1.5\text{V}$ $\pm 0.045\text{V}$	$V_{OE}+1.5\text{V} \pm 0.035\text{V}$						
Offset Voltage ¹	V_{OE}	V_{REF} $\pm 0.035\text{V}$	$V_{REF} \pm 0.030\text{V}$						
Accuracy ²	X	$\pm 1\% @ I_f$							
Output Linearity ²	ϵ_L	$\pm 1\% @ I_f$							
Power Supply	V_{CC}	$5\text{V} \pm 2\%$							
Current Consumption	I_c	$< 15\text{mA}$							
Response Time	t_r	$< 5\mu\text{s} (@ di/dt = 10\text{A}/5\mu\text{s})$							
Output Temperature Characteristic ²	TCV_{OUT}	$< \pm 2\text{mV}/^{\circ}\text{C}$	$< \pm 1.5\text{mV}/^{\circ}\text{C}$						
Offset Temperature Characteristic	TCV_{OE}	$< \pm 2\text{mV}/^{\circ}\text{C}$	$< \pm 1.0\text{mV}/^{\circ}\text{C}$						
Hysteresis error	V_{OH}	$\leq 8\text{mV} (@ 0\text{A} \leftrightarrow I_f)$			$\leq 4\text{mV} (@ 0\text{A} \leftrightarrow I_f)$		$\leq 6\text{mV} (@ 0\text{A} \leftrightarrow I_f)$		
Withstand Voltage	V_d	AC2500V for 1minute (sensing current 0.5mA), inside of aperture \leftrightarrow terminal							
Insulation Resistance	R_{IS}	$> 500\text{M}\Omega$ (500V DC), inside of aperture \leftrightarrow terminal							
Frequency Bandwidth ³	f	DC .. 35kHz							
Operating Temperature	T_A	$-10^{\circ}\text{C} \sim +80^{\circ}\text{C}$							
Storage Temperature	T_s	$-15^{\circ}\text{C} \sim +85^{\circ}\text{C}$							

¹ $V_{REF} = V_{CC}/2$ (ratiometric) — ² Without offset — ³ Small signal only to avoid excessive heating of magnetic core

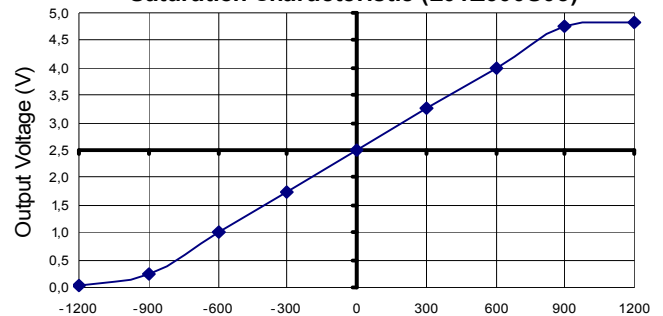
Electrical Performances

Frequency Characteristic (L01Z100S05)



If frequency (kHz) @ $I_f=6.0\text{Arms}$

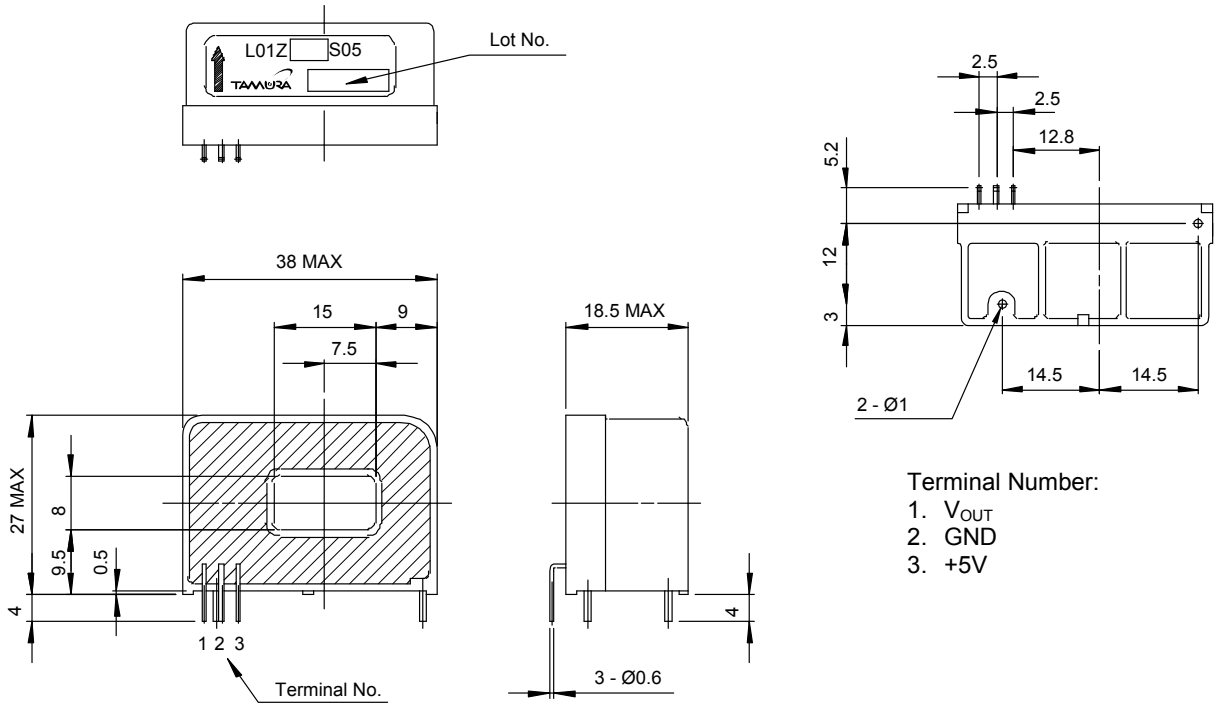
Saturation Characteristic (L01Z600S05)



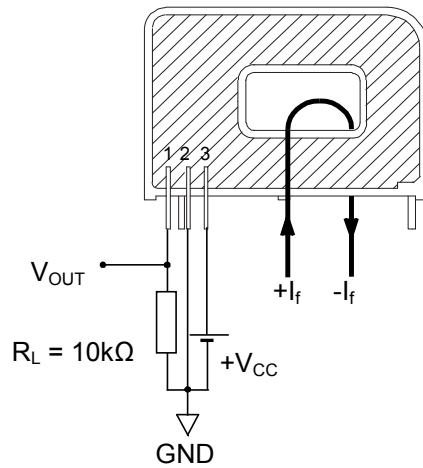
Input current (A)

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Mechanical dimensions in mm



Electrical connection diagram



Package & Weight Information

Weight	Pcs/box	Pcs/carton	Pcs/pallet
45g	50	200	9600