

Hall Effect Current Sensors S22P***S05M2 Series



Features:

- Closed Loop type
- Voltage output
- Unipolar power supply
- Configurable integrated primary
- Printed circuit board mounting
- UL recognised - plastic case material UL94V0
- Improved dv/dt Immunity

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

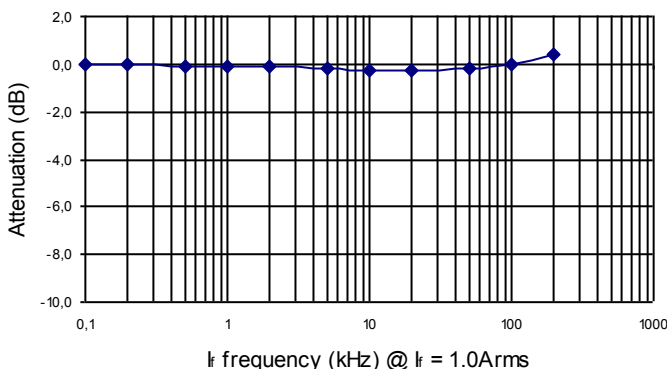
$T_A=25^{\circ}\text{C}$, $V_{CC}=+5\text{V}$, $R_L=10\text{k}\Omega$

Parameters	Symbol	S22P006S05M2	S22P015S05M2	S22P025S05M2
Rated Current	I_f	6A	15A	25A
Saturation Current	I_{fmax}	$\pm 18\text{A}$	$\pm 45\text{A}$	$\pm 75\text{A}$
Output Voltage	V_{OUT}	$V_{OE} \pm 0.625\text{V} @ I_f$		
Offset Voltage @ $I_f=0$	V_{OE}	$2.5\text{V} \pm 50\text{mV}$	$2.5\text{V} \pm 20\text{mV}$	$2.5\text{V} \pm 15\text{mV}$
Output Voltage Accuracy	X	$0.625\text{V} \pm 10\text{mV} @ I_f$		
Output Linearity	ϵ_L	$\pm 0.2\% @ I_f$		
Supply Voltage	V_{CC}	$+5\text{V} \pm 5\%$		
Current Consumption	I_{CC}	Typ. $12.5\text{mA} (I_f=0) + 37.5\text{mA} (I_f=\text{max})$		
Response Time ¹	t_r	$\leq 1.0\mu\text{s} @ di/dt = I_f / \mu\text{s}$		
Output Temperature Characteristic	TCV_{OUT}	$< \pm 0.05\text{mV}/^{\circ}\text{C}$		
Offset Temperature Characteristic	TCV_{OE}	$-10^{\circ}\text{C} \sim 25^{\circ}\text{C} : \pm 1.6\text{mV}/^{\circ}\text{C}$ $25^{\circ}\text{C} \sim 85^{\circ}\text{C} : \pm 0.8\text{mV}/^{\circ}\text{C}$	$-10^{\circ}\text{C} \sim 25^{\circ}\text{C} : \pm 0.6\text{mV}/^{\circ}\text{C}$ $25^{\circ}\text{C} \sim 85^{\circ}\text{C} : \pm 0.3\text{mV}/^{\circ}\text{C}$	$-10^{\circ}\text{C} \sim 25^{\circ}\text{C} : \pm 0.4\text{mV}/^{\circ}\text{C}$ $25^{\circ}\text{C} \sim 85^{\circ}\text{C} : \pm 0.2\text{mV}/^{\circ}\text{C}$
Hysteresis allowance	V_{OH}	$\leq 0.5\text{mV} (0\text{A} \leftrightarrow I_f)$		
Insulation Withstanding	V_d	AC 3kV for 1minute (Sensing current 0.5mA) Primary \leftrightarrow Secondary		
Insulation Resistance	R_{IS}	$> 500\text{M}\Omega (@ \text{DC}500\text{V})$ Primary \leftrightarrow Secondary		
Frequency Bandwidth	f	DC ... 200 kHz		
Operating Temperature	T_A	$-10^{\circ}\text{C} \sim +85^{\circ}\text{C}$		
Storage Temperature	T_s	$-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$		

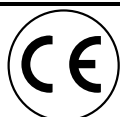
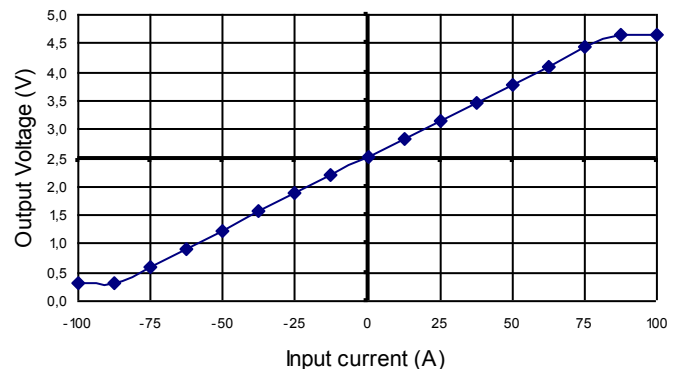
¹ Time between 10% input current full scale and 90% of sensor output full scale

Electrical Performances

Frequency Characteristic



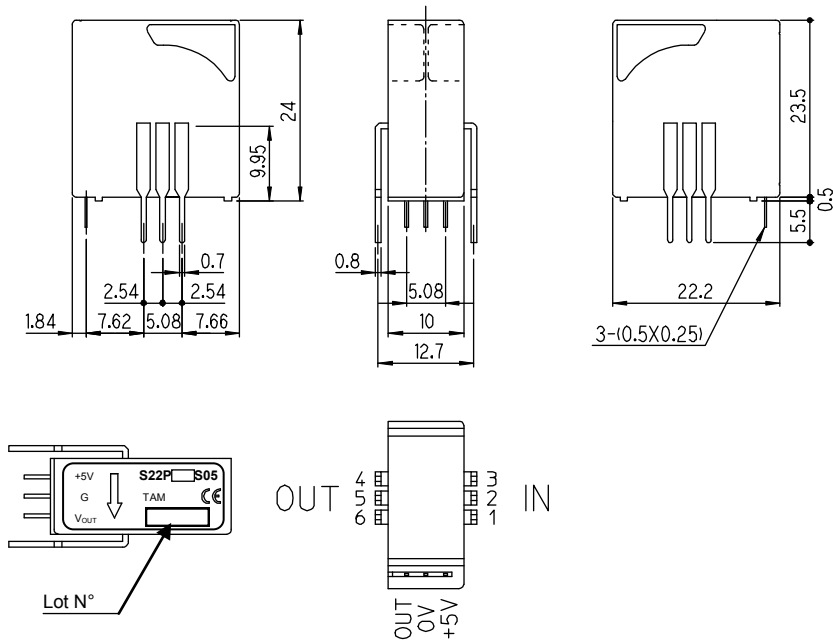
Saturation Characteristic



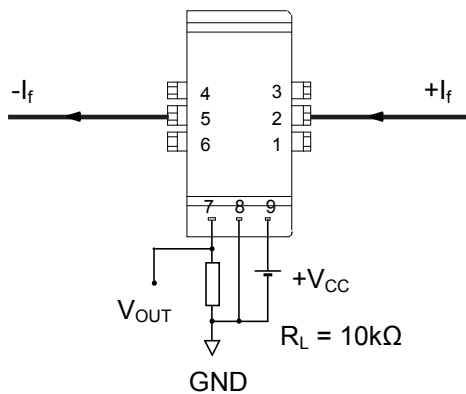
Tamura reserve the right to modify its products in order to improve them without prior notice

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Mechanical dimensions in mm



Electrical connection diagram



Connection diagram

+I_f / 3	
+I_f / 2	
+I_f	

Package & Weight Information

Weight	Pcs/box	Pcs/carton	Pcs/pallet
8g	100	400	9600

Mouser Electronics

Authorized Distributor

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Tamura:

[S22P025S05M2](#) [S22P015S05M2](#)