TBC-LAS5 Series Closed Loop Mode Hall Effect Current Sensor

The TBC-LAS5 series current sensor is a closed loop device based on the principle of the hall effect and null balance method. The output from the current sensor is the balancing current which is a perfect image of the primary current reduced by the number of secondary turns at any time. This current can be expressed as a voltage by passing it through a resister. It provides accurate electronic measurement of DC, AC or pulsed currents.

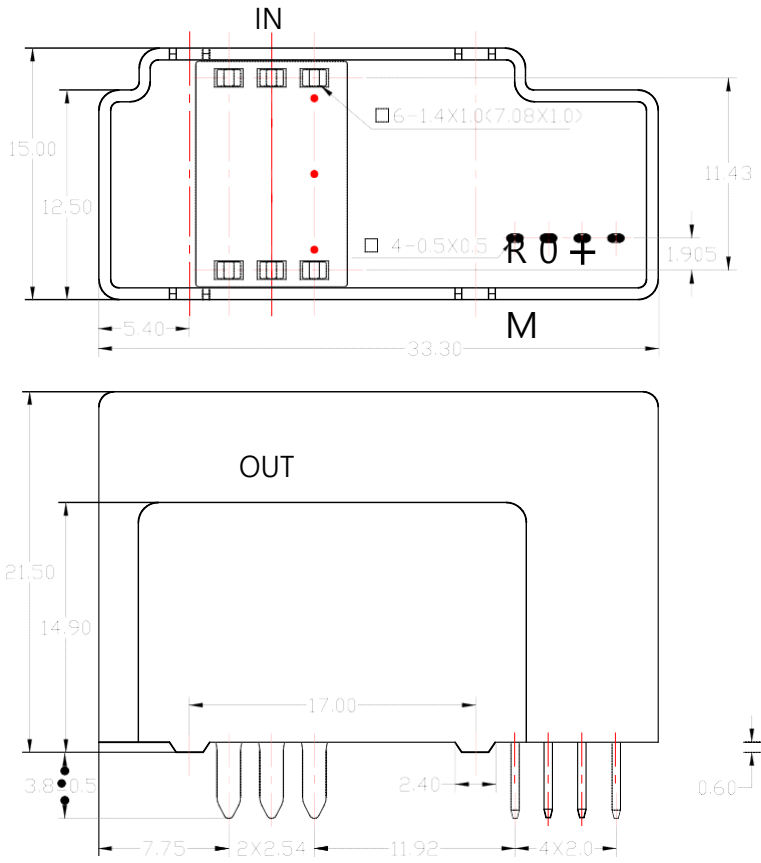
Electrical data(Ta=25℃±5℃)

Type / Parameter	TBC50LAS5	TBC100LAS5	Unit
Rated input (Ipn)	±50	±100	A
Measure range (Ip)	±160	±250	A
Rated output	0.625±0.5%	0.625±0.5%	V
Turns ratio (Np/Ns)	1:1200	1:1200	T
Secondary coil resister	@ +85℃ 25	@ +85℃ 15	Ω
Internal resister	3.75±0.1%,25PPm//℃	1.875±0.1%,25PPm//℃	Ω
Supply voltage	+5±5%		V
Power consumption	20+IpX(Np/Ns)		mA
Reference voltage	+2.5±0.4%(output)		V
Vref external range	2.0-2.8(Input)		V
Vref internal resistor	200		V
Zero voltage	@ Is=0 +2.5±0.4%		V
Zero voltage drift	≤±0.1		mV/℃
Linearity	@ Ip=0-±Ipn ≤0.1		%FS
Response time	@100A/μS,10%-90% < 0.5		μs
Galvanic isolation	@ 50AC,1min 5.0		KV
di/dt accurately followed	> 100		A/μs
Band-width	@-3dB DC-200		KHz

Applications

- Variable speed drives
- Welding machine
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Electrochemical
- Switched Mode Power Supplies (SMPS)

Mechanical dimension(for reference only)



Secondary Pins

R: 2.5V(OUTPUT) 0: 0V

+: +5V

M: Output

Remarks :

1. All dimensions are in mm.
2. General tolerance ±1mm

Pin connections

Turns	Rated current Ipn(A)	Measure range Ip(A)	Rated voltage Vsn(V)	Secondary turns	Primary resistance (mΩ)	Primary inductance (uH)
1	50(100)	160(300)	0.625	1200	0.08	0.007

Directions for use

1. When the current will be measured goes through a sensor ,the voltage will be measured at the output end. (Note: The false wiring may result in the damage of the sensor).
2. Custom design in the different rated input current and the output voltage available.

Standards

UL94-V0.

EN60947-1:2004

IEC60950-1:2001

EN50178:1998

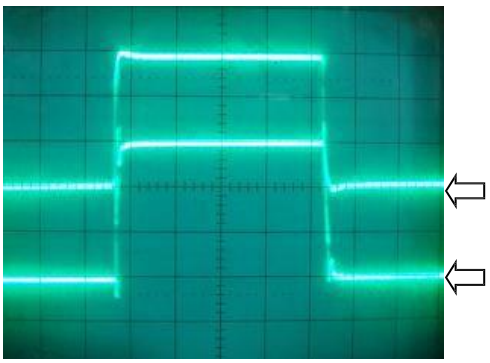
SJ 20790-2000

General data

	Value	Unit	Symbol
Operating temperature	-40 to +85	ºC	TA
Storage temperature	-40 to +125	ºC	TS
Mass(approx)	17	g	M

Characteristics chart

Pulse current signal response characteristic



Effects of impulse noise