



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# Current Transducer LA 50-S

$I_{PN} = 50 \text{ A}$

For the electronic measurement of currents : DC, AC, pulsed..., with a galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).



0640

## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	50	A
$I_p$	Primary current, measuring range	0 .. $\pm 70$	A
$R_M$	Measuring resistance	$R_{Mmin}$ $R_{Mmax}$	
	with $\pm 15 \text{ V}$	@ $\pm 50 \text{ A}_{max}$	50 100 $\Omega$
		@ $\pm 70 \text{ A}_{max}$	50 70 $\Omega$
$I_{SN}$	Secondary nominal r.m.s. current	50	mA
$K_N$	Conversion ratio	1 : 1000	
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 15$	V
$I_C$	Current consumption	$10 + I_s$	mA
$V_d$	R.m.s. voltage for AC isolation test, 50 Hz, 1 min	3	kV

## Features

- Closed loop (compensated) current transducer using the Hall effect
- Insulated plastic case recognized according to UL 94-V0.

## Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

## Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	$\pm 0.5$	%
$\epsilon_L$	Linearity error	$< 0.1$	%
$I_o$	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Max
$I_{OT}$	Thermal drift of $I_o$ - $10^\circ\text{C} \dots + 70^\circ\text{C}$	$\pm 0.3$	$\pm 0.6$ mA
$t_r$	Response time <sup>1)</sup> @ 90 % of $I_{PN}$	$< 1$	$\mu\text{s}$
$di/dt$	di/dt accurately followed	$> 50$	A/ $\mu\text{s}$
$f$	Frequency bandwidth (- 1 dB)	DC .. 150	kHz

## Applications

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

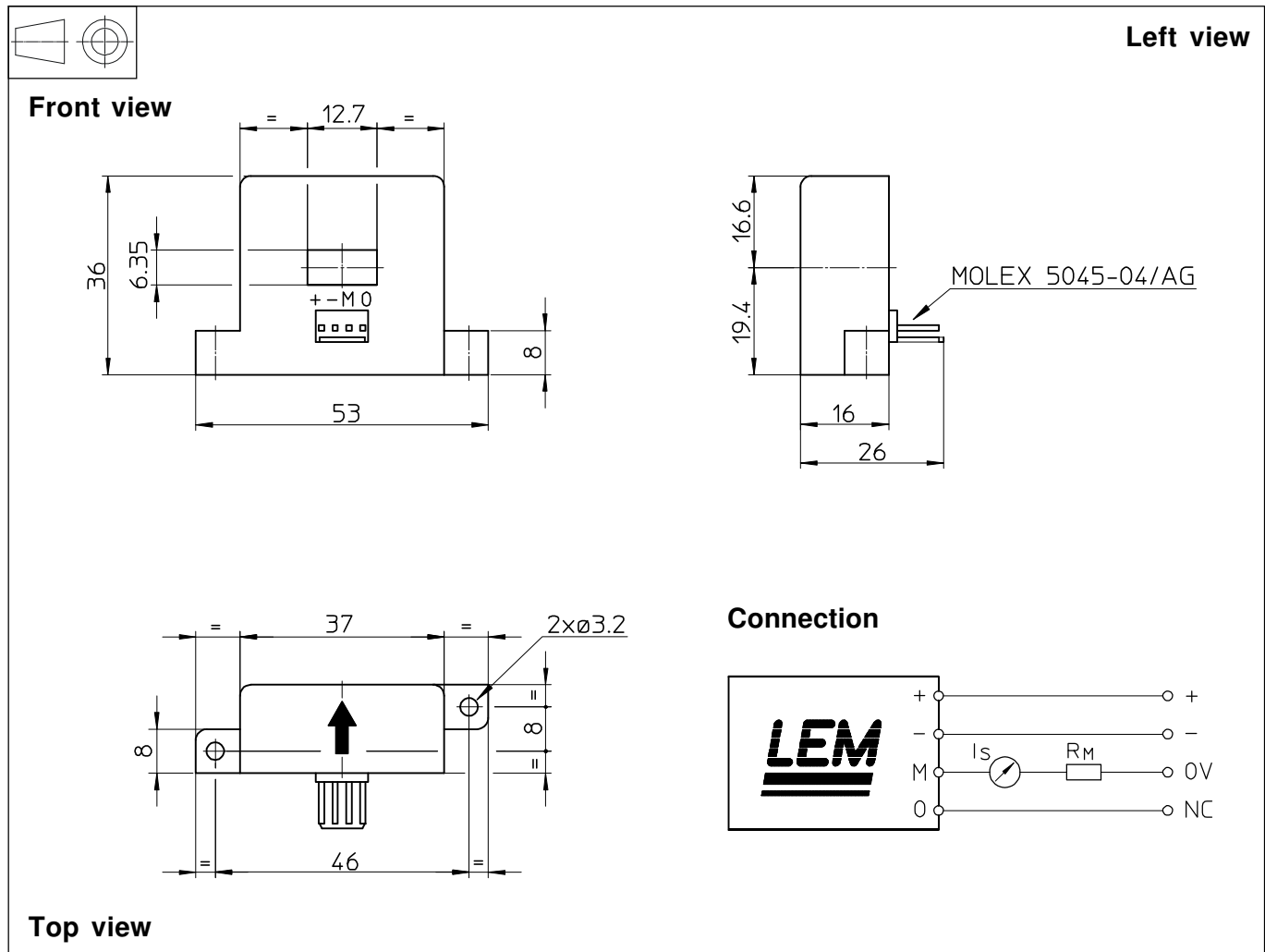
## General data

$T_A$	Ambient operating temperature	- 10 .. + 70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 25 .. + 85	$^\circ\text{C}$
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	90	$\Omega$
$m$	Mass	45	g
	Standards	EN 50178 : 1997	

Note: <sup>1)</sup> With a di/dt of 50 A/ $\mu\text{s}$ .

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## Dimensions LA 50-S (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.2$  mm
- Transducer fastening 2 holes  $\varnothing 3.2$  mm  
2 M3 steel screws  
Recommended fastening torque 1.1 Nm or 0.81 Lb.-Ft.
- Primary through-hole 12.7 x 6.35 mm
- Connection of secondary Molex 5045-04/AG

### Remarks

- $I_S$  is positive when  $I_p$  flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 100°C.
- Dynamic performances (di/dt and response time) are best with a single bar completely filling the primary hole.
- In order to achieve the best magnetic coupling, the primary windings have to be wound over the top edge of the device.
- To measure nominal currents of less than 50 A, the optimum accuracy is obtained by having several primary turns (nominal current x number of turns < 50 At).