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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# Hall Effect Current Sensor S27S300D15Y

**Features:**
- Closed Loop type
- Current or voltage output
- Conversion ratio K = 1:2000
- Panel mounting with Molex Minifit connector
- Large aperture
- Insulated plastic case according to UL94V0

**Advantages:**
- Excellent accuracy and linearity
- Low temperature drift
- Wide frequency bandwidth
- No insertion loss
- High Immunity to external interferences
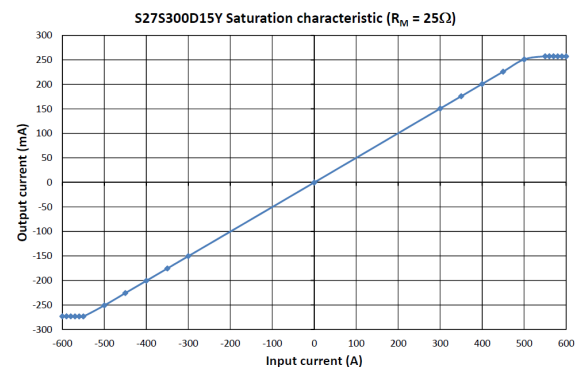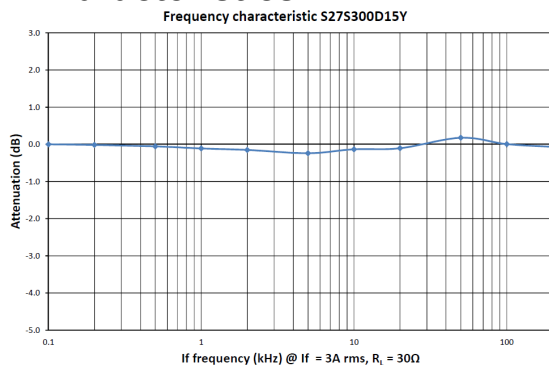- Optimised response time
- Current overload capability

## Specifications

$T_A$=25ºC, $V_{CC}$=±15V

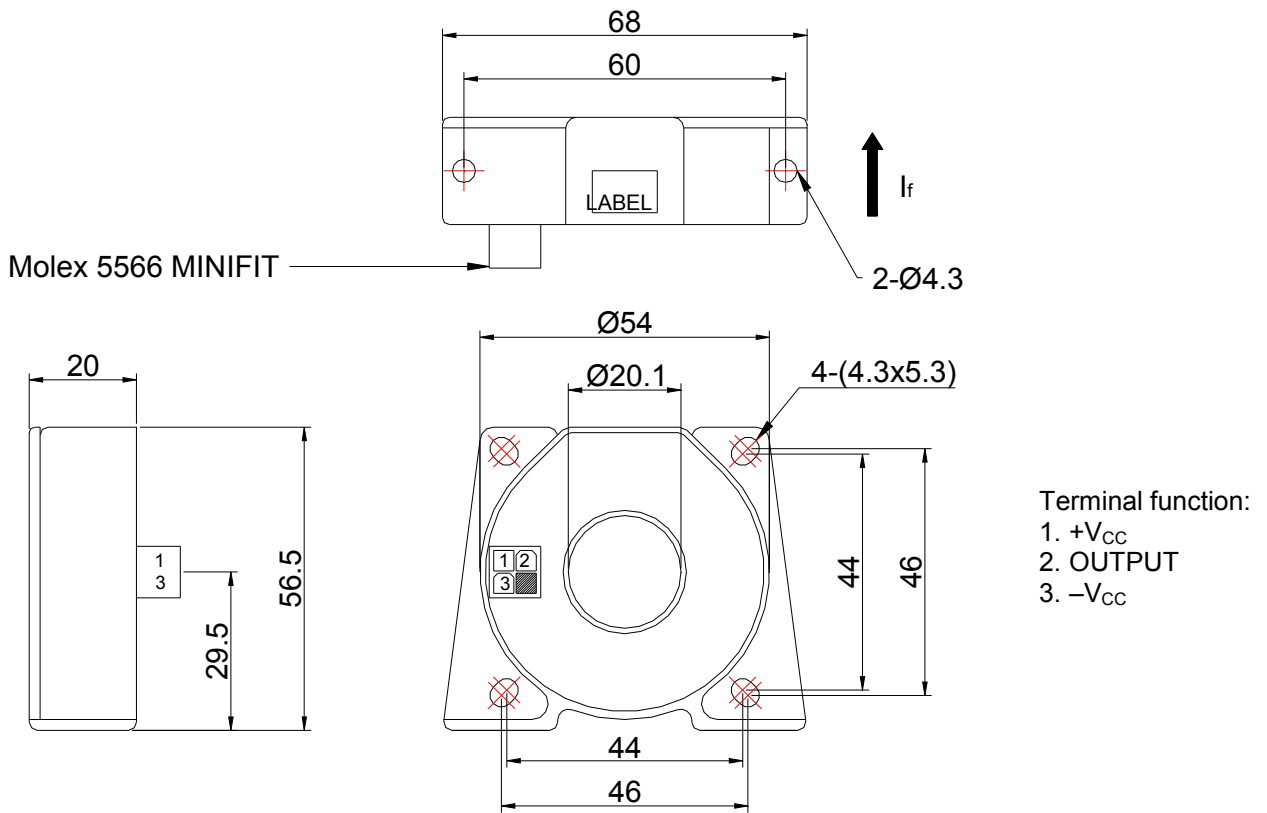| Parameters | Symbol | S27S300D15Y | | |
|---|---|---|---|---|
| Rated Current | $I_f$ | 300AT | | |
| Maximum Current[1] | $I_{fmax}$ | ± 500A (@ $R_M$ ≤ 5Ω) | | |
| If = ± $A_{DC}$<br><br>Measuring resistance @ 85°C | $R_M$ | ±12V | 300A : 0Ω ~ 39Ω<br>500A : 0Ω ~ 12Ω | |
| | | ±15V | 300A : 0Ω ~ 58Ω<br>500A : 0Ω ~ 22Ω | |
| | | ±20V | 300A : 15Ω ~ 93Ω<br>500A : 15Ω ~ 45Ω | |
| Conversion Ratio | K | 1 : 2000 | | |
| Output Current | $I_{OUT}$ | ± 150mA | | |
| Offset Current | $I_{OE}$ | ± 0.2mA @ $I_f$ = 0A | | |
| Output Current Accuracy | X | $I_{OUT}$ ± 0.4% | | |
| Output Linearity | $\varepsilon_L$ | ± 0.1% @ $I_f$ | | |
| Supply Voltage[2] | $V_{CC}$ | ± 12V ~ ± 20V | | |
| Consumption Current | $I_{CC}$ | ± 20mA (Output Current is not included) | | |
| Response Time[3] | $t_r$ | < 1.0µs @ di/dt = 100A / µs | | |
| Output Temperature Characteristic | $TCI_{OUT}$ | ± 0.01 % / ºC @ $I_f$ | | |
| Offset Temperature Characteristic[4] | $TCI_{OE}$ | < ± 0.5mA max. @ $I_f$ = 0A (-40ºC ~ +85ºC) | | |
| Hysteresis allowance | $I_{OH}$ | ≤ 0.08mA (0A ⇔ 3 x $I_f$) | | |
| Insulation Withstanding | $V_d$ | AC 4000V, for 1minute (sensing current 0.5mA), inside of aperture ⇔ terminals | | |
| Insulation Resistance | $R_{IS}$ | > 500MΩ (@ DC 500V) inside of aperture ⇔ terminals | | |
| Frequency Bandwidth | f | DC .. 100 kHz | | |
| Secondary Coil Resistance | $R_S$ | 25Ω @ $T_A$ = 70ºC<br>28Ω @ $T_A$ = 85ºC | | |
| Operating Temperature | $T_A$ | – 40ºC ~ +85ºC | | |
| Storage Temperature | $T_S$ | – 40ºC ~ +90ºC | | |

[1] @ $V_{CC}$=±15V for 10 Seconds — [2] Rated Current is restricted by $V_{CC}$ — [3] Time between 10% input current full scale and 90% of sensor output full scale — [4] < ± 0.3mA max. @ $I_f$ = 0A (-10ºC ~ +70ºC)

## Electrical Characteristics



Frequency characteristic S27S300D15Y



S27S300D15Y Saturation characteristic ($R_M$ = 25Ω)

## Mechanical dimensions in mm

68

60

LABEL

$I_f$

Molex 5566 MINIFIT

2-Ø4.3

20

56.5

29.5

1
3

Ø54

Ø20.1

4-(4.3x5.3)

1 2
3

44

46

44

46

Terminal function:
1. $+V_{CC}$
2. OUTPUT
3. $-V_{CC}$

## Electrical connection diagram

**Voltage output**

$+V_{CC}$

$R_M$

$-V_{CC}$

1 2
3

$-I_f$

$+I_f$

GND

$V_{OUT}$

**Current output**

$I_{OUT}$

$+V_{CC}$

$-V_{CC}$

1 2
3

$-I_f$

$+I_f$

GND
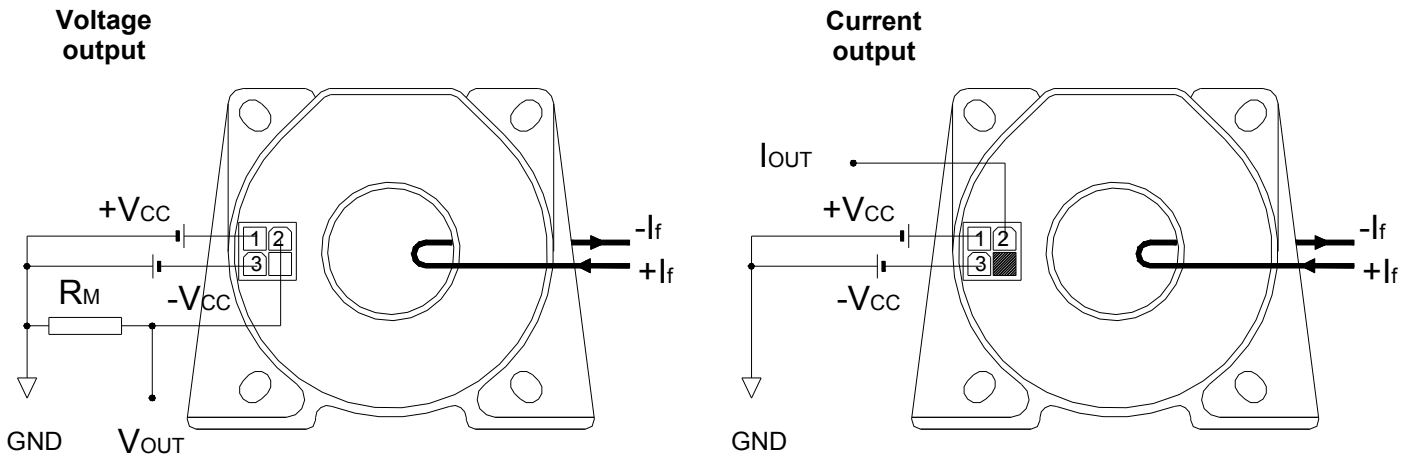
## Package & Weight Information

| Weight | Pcs/box | Pcs/carton | Pcs/pallet |
|--------|---------|------------|------------|
|        |         |            |            |