

SENSITRON
SEMICONDUCTOR

DATA SHEET 5290, REV –

**POSITIVE LOW DROPOUT
 1.5 AMP REGULATOR**

FEATURES:

- ISOLATED HERMETIC SURFACE MOUNT PACKAGE
- SIMILAR TO INDUSTRY TYPE LT1086M
- FIXED 3.3V, 5V, 12V OR ADJUSTABLE
- CUSTOM FIXED VOLTAGES AVAILABLE (*CONTACT FACTORY*)

MAXIMUM RATINGS

All ratings are at $T_A = 25^\circ\text{C}$ unless otherwise specified.

Parameter	Conditions	Limit	Units
Input to Output Voltage Differential		29	V
Lead Temperature	Soldering, 10 seconds	+300	$^\circ\text{C}$
Power Dissipation (P_D)		Internally Limited	
Maximum Thermal Resistance Junction to Case (θ_{JC})		3.5	$^\circ\text{C}/\text{W}$
Junction Temperature		-55 to +150	$^\circ\text{C}$
Storage Temperature Range		-65 to +150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Min	Max	Units
Reference Voltage (V_{REF}) SHD589170	$V_{IN} - V_{OUT} = 3.0\text{V}$, $I_{OUT} = 10\text{mA}$ $1.5\text{V} \leq V_{IN} - V_{OUT} \leq 15\text{V}$, $10\text{mA} \leq I_{OUT} \leq I_{FULL\ LOAD}$	1.238 1.225	1.262 1.270	V
Output Voltage (V_{OUT})				
SHD589171	$I_{OUT} = 0\text{mA}$, $V_{IN} = 8\text{V}$ $0\text{mA} \leq I_{OUT} \leq I_{FULL\ LOAD}$, $6.5\text{V} \leq V_{IN} \leq 20\text{V}$	4.950 4.900	5.050 5.100	V
SHD589172	$I_{OUT} = 0\text{mA}$, $V_{IN} = 15\text{V}$ $0\text{mA} \leq I_{OUT} \leq I_{FULL\ LOAD}$, $13.5\text{V} \leq V_{IN} \leq 25\text{V}$	11.880 11.760	12.120 12.240	V
SHD589173	$I_{OUT} = 0\text{mA}$, $V_{IN} = 18\text{V}$ $0\text{mA} \leq I_{OUT} \leq I_{FULL\ LOAD}$, $16.5\text{V} \leq V_{IN} \leq 28\text{V}$	14.850 14.700	15.150 15.300	V
SHD589174	$I_{OUT} = 0\text{mA}$, $V_{IN} = 5\text{V}$ $0\text{mA} \leq I_{OUT} \leq I_{FULL\ LOAD}$, $4.8\text{V} \leq V_{IN} \leq 15\text{V}$	3.270 3.235	3.330 3.365	V
Line Regulation (V_{RLINE}) SHD589170	$I_{OUT} = 10\text{mA}$, $1.5\text{V} \leq V_{IN} - V_{OUT} \leq 15\text{V}$	-	0.2 0.2	%
SHD589171	$I_{OUT} = 0\text{mA}$, $6.5\text{V} \leq V_{IN} \leq 20\text{V}$		10 10	mV
SHD589172	$I_{OUT} = 0\text{mA}$, $13.5\text{V} \leq V_{IN} \leq 25\text{V}$		25 25	mV
SHD589173	$I_{OUT} = 0\text{mA}$, $16.5\text{V} \leq V_{IN} \leq 28\text{V}$		30 30	mV
SHD589174	$I_{OUT} = 0\text{mA}$, $4.8\text{V} \leq V_{IN} \leq 15\text{V}$		6 6	mV

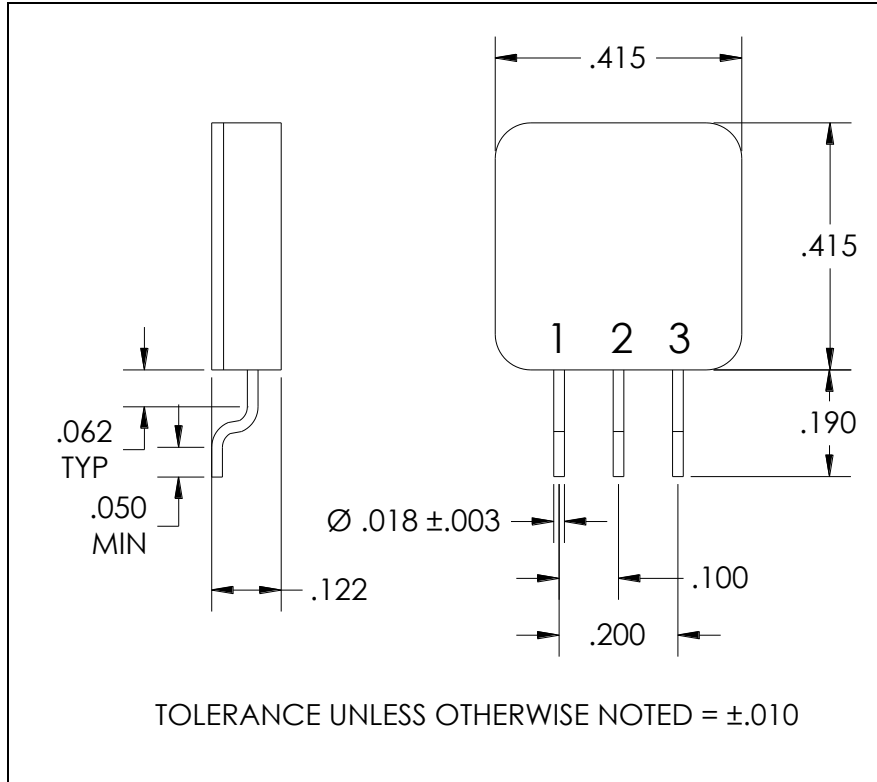
SENSITRON
SEMICONDUCTOR

DATA SHEET 5290, REV –

Load Regulation (V_{RLOAD}) SHD589170	$V_{IN} - V_{OUT} = 3.0V, 10mA \leq I_{OUT} \leq I_{FULL\ LOAD}$	-	1.2 1.8	%
SHD589171	$V_{IN} = 8V, 0\ mA \leq I_{OUT} \leq I_{FULL\ LOAD}$		60 90	mV
SHD589172	$V_{IN} = 15V, 0\ mA \leq I_{OUT} \leq I_{FULL\ LOAD}$		144 216	mV
SHD589173	$V_{IN} = 18V, 0\ mA \leq I_{OUT} \leq I_{FULL\ LOAD}$		180 270	mV
SHD589174	$V_{IN} = 5V, 0\ mA \leq I_{OUT} \leq I_{FULL\ LOAD}$	-	40 59	mV
Adjust Pin Current SHD589170		-	120	μA
Adjust Pin Current Change SHD589170	$10mA \leq I_{OUT} \leq I_{FULL\ LOAD}, 1.5V \leq V_{IN} - V_{OUT} \leq 25V$	-	5.0	μA
Minimum Load Current SHD589170	$V_{IN} - V_{OUT} = 25V$	-	10	mA
Quiescent Current SHD589171 SHD589172 SHD589173 SHD589174	$V_{IN} \leq 20V$ $V_{IN} \leq 25V$ $V_{IN} \leq 28V$ $V_{IN} \leq 18V$	-	10 10 10 10	mA mA mA mA
Current Limit SHD589170	$V_{IN} - V_{OUT} = 5.0V$ $V_{IN} - V_{OUT} = 25V$	1.5 0.05		A A
SHD589171	$V_{IN} - V_{OUT} = 10.0V$	1.5		A
SHD589172	$V_{IN} - V_{OUT} = 17.0V$	1.5		A
SHD589173	$V_{IN} - V_{OUT} = 20.0V$	1.5		A
SHD589174	$V_{IN} - V_{OUT} = 8.0V$	1.5		A
Ripple Rejection SHD589170	$f = 120Hz, C_{OUT} = 25\mu F (tant), I_{OUT} = 1.5A,$ $C_{ADJ} = 25\mu F, V_{IN} - V_{OUT} = 3.0V$	60	-	dB
SHD589171	$V_{IN} = 8.0V$	60	-	dB
SHD589172	$V_{IN} = 15.0V$	54	-	dB
SHD589173	$V_{IN} = 18.0V$	52	-	dB
SHD589174	$V_{IN} = 6.3V$	60	-	dB
Dropout Voltage	$I_{OUT} = 1.5A, \Delta V_{REF} = 1\%$	-	1.5	V
Long Term Stability	$T_A = +125^\circ C, t = 1,000hrs$	-	1.0	%

Parameters in boldface denote the specification applies over the full operating temperature range.

MECHANICAL DIMENSIONS: inches/mm



PINOUT TABLE

TYPE	PIN 1	PIN 2	PIN 3
1.5A Regulator, Adj	ADJUST	V _{OUT}	V _{IN}
1.5A Regulator, Fixed	V _{IN}	GND	V _{OUT}

Alternate pinouts, packages, and lead bends available. Contact factory.

DISCLAIMER:

1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).

2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.

3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.

4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.

5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.

6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.

7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.