L08P***D15 series data sheet

『Representative data :L08P100D15』

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(drawing up on '01.08.01)

《Output voltage linearity》 『Hysteresis width』

RL＝10kΩ Vcc＝±15V

Detected current If (A)	Output voltage Vout(V) NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
0	−0.002	0.011	0.006	0.003	0.003	
25	0.998	1.019	1.010	1.009	1.005	
50	2.001	2.020	2.016	2.011	2.009	
75	3.003	3.027	3.022	3.015	3.012	
100	4.006	4.034	4.030	4.020	4.019	rated current

【considering offset voltage】

Detected current If (A)	Output voltage Vout(V) NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
0	0.000	0.000	0.000	0.000	0.000	revise zero
25	1.000	1.008	1.004	1.006	1.002	↓
50	2.003	2.009	2.010	2.008	2.006	↓
75	3.005	3.016	3.016	3.012	3.009	↓
100	4.008	4.023	4.024	4.017	4.016	↓

【revosing output voltage.】(converting detected current into primary value.)

Detected current If (A)	Output voltage after converting Vout(V) NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
25	4.000	4.032	4.016	4.024	4.008	four times
50	4.006	4.018	4.020	4.016	4.012	double
75	4.006	4.020	4.020	4.015	4.011	3/4 time
100	4.008	4.023	4.024	4.017	4.016	rated current

Avarage A	4.005	4.023	4.020	4.018	4.012

【calculating allowance percentage.】

1. We take average 4point ; rated current, three fourths of rated current, half of rated current, one fourth of rated current.
2. Linearity error parcentage on each point is given by following equation.

$$\varepsilon = (Vout - A) / A \times 100(\%)$$

● 《Output voltage linearity》 【standard value】 less than ±1%

Detected current If (A)	linearity error percentage (%) NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
25	−0.123	0.215	−0.102	0.149	−0.093	
50	0.027	−0.133	−0.002	−0.050	0.006	
75	0.019	−0.075	0.006	−0.075	−0.019	
100	0.077	−0.008	0.097	−0.025	0.106	

● 『Hysteresis width』 【standard value】 less than 20mV

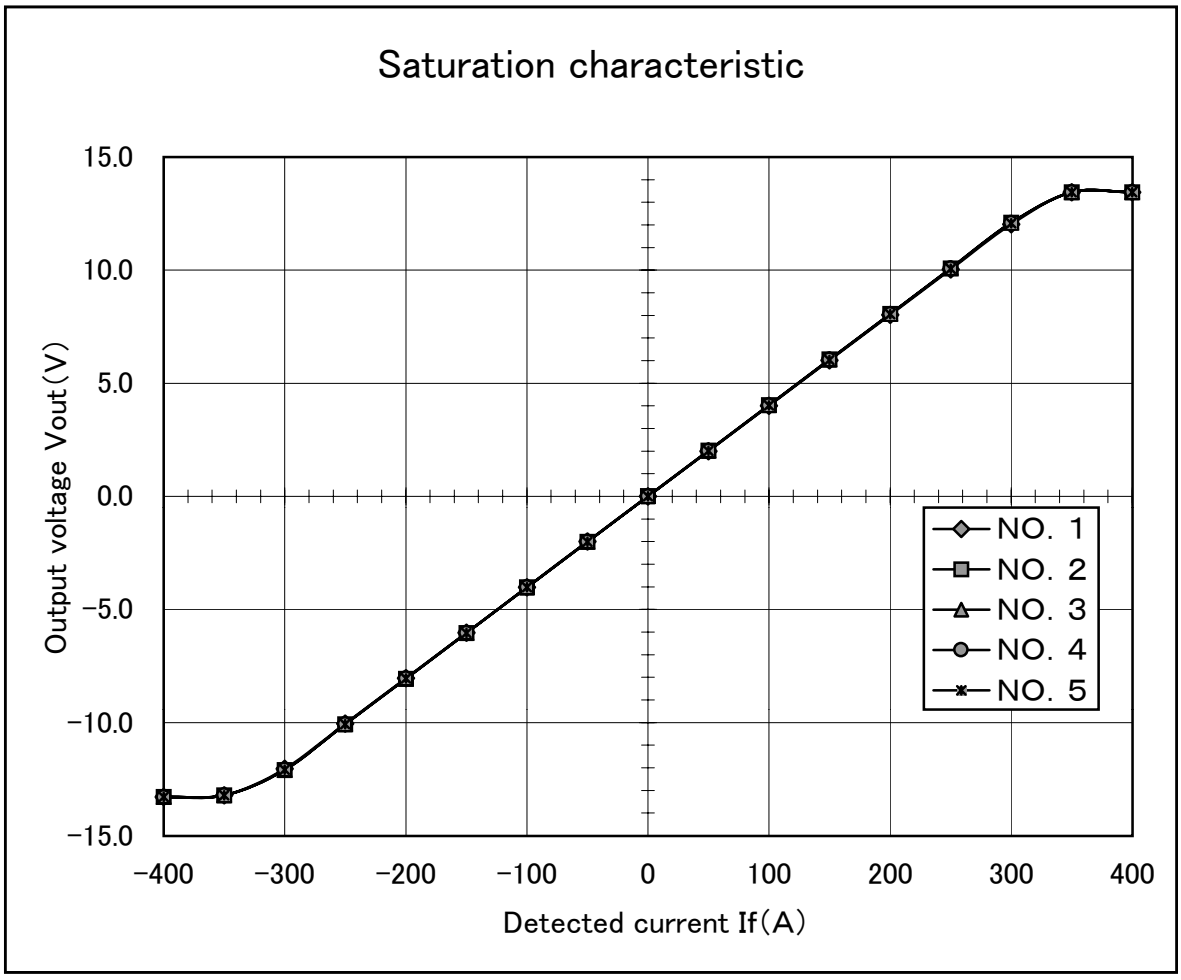
	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
＋If(A)→0(A)	0.006	0.016	0.010	0.009	0.008	Output voltage
−If(A)→0(A)	0.000	0.011	0.005	0.003	0.002	Output voltage
Hysteresis width	0.006	0.005	0.005	0.006	0.006	

《Saturation characteristic》

RL＝10kΩ Vcc＝±15V

Detected current If(A)	Output voltage Vout(V)					Remarks
	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	
400	13.444	13.443	13.445	13.445	13.444	
350	13.445	13.444	13.446	13.446	13.444	
300	12.034	12.092	12.099	12.084	12.077	
250	10.033	10.082	10.085	10.069	10.062	
200	8.025	8.068	8.065	8.053	8.046	
150	6.015	6.050	6.047	6.038	6.033	
100	4.006	4.034	4.030	4.020	4.019	rated current
50	2.001	2.020	2.016	2.011	2.009	
0	−0.002	0.011	0.006	0.003	0.003	
−50	−2.001	−2.003	−2.008	−2.011	−2.009	
−100	−4.012	−4.019	−4.027	−4.025	−4.021	
−150	−6.023	−6.044	−6.044	−6.040	−6.038	
−200	−8.032	−8.062	−8.062	−8.057	−8.053	
−250	−10.041	−10.081	−10.081	−10.075	−10.069	
−300	−12.036	−12.092	−12.092	−12.087	−12.081	
−350	−13.220	−13.222	−13.222	−13.224	−13.223	
−400	−13.293	−13.293	−13.293	−13.295	−13.294	

【standard value】more than 300A

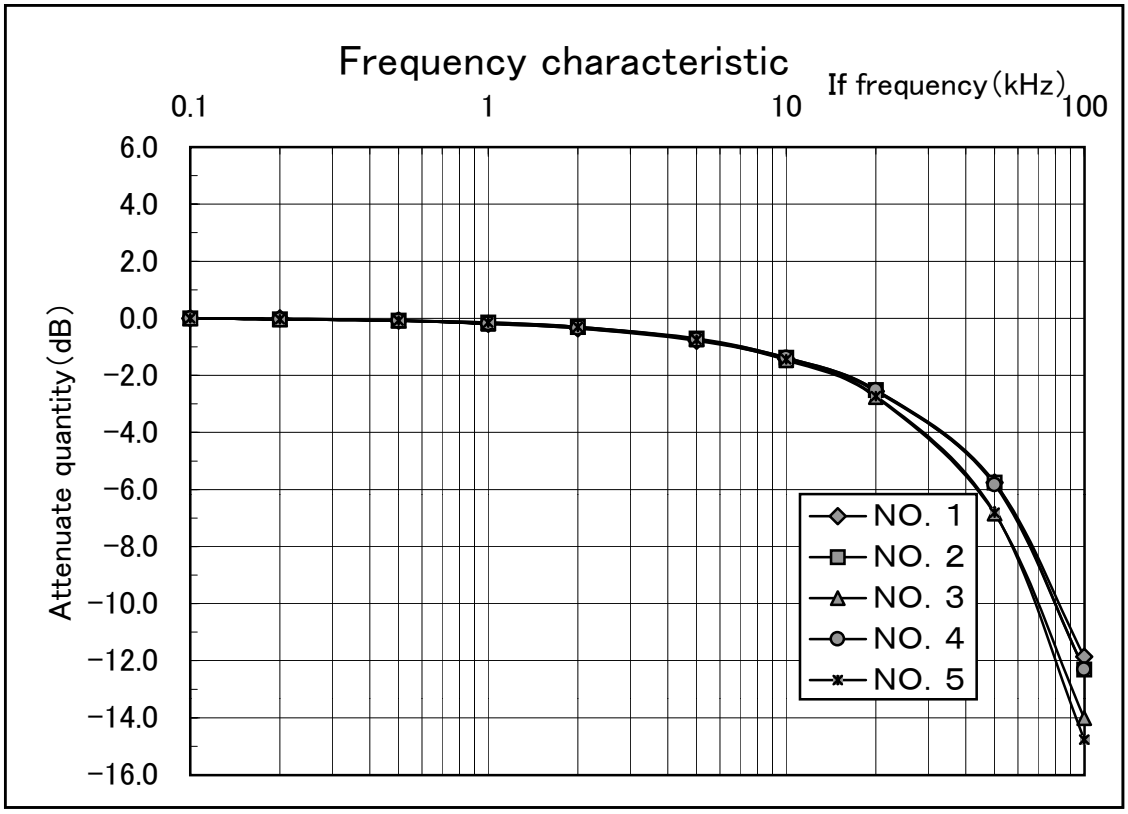


《Frequency characteristic》

Detected If＝6．00(Arms)　Vcc＝±15V　RL＝10kΩ

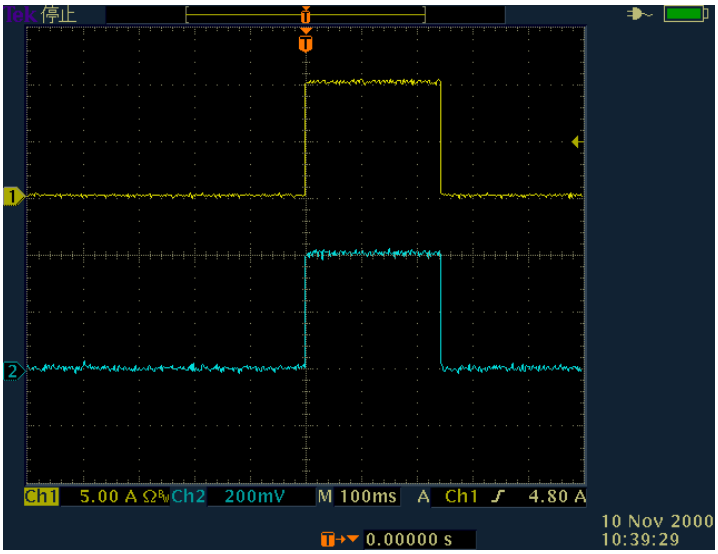
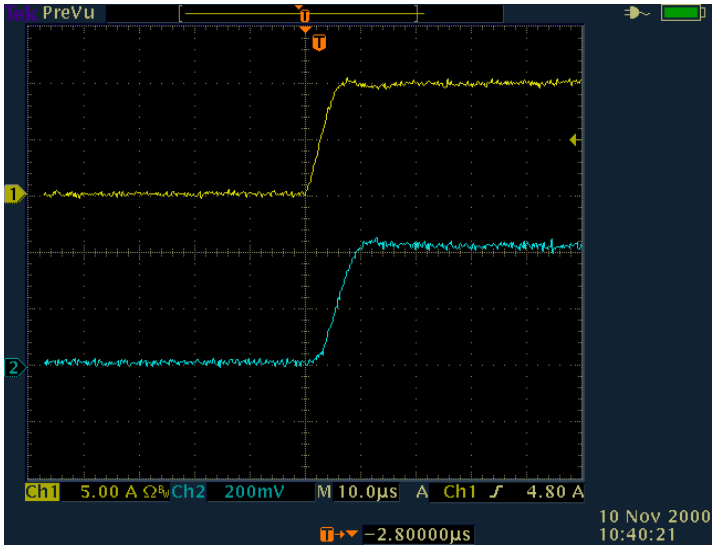
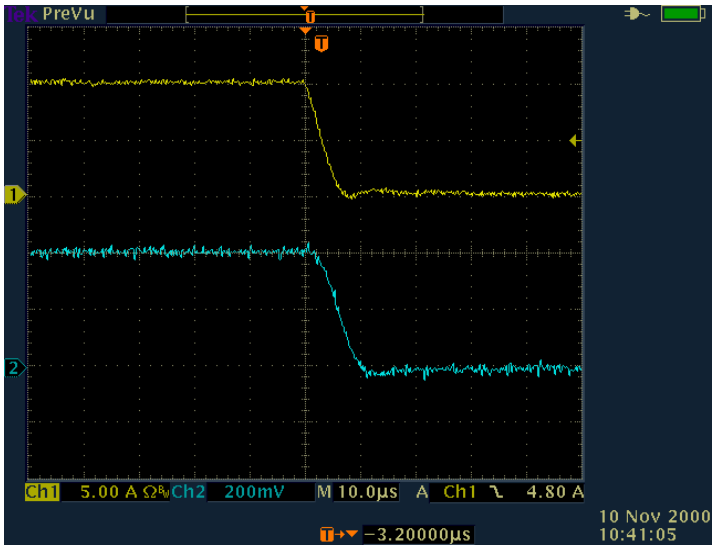
If frequency(kHz)	Output Voltage Vout(V) NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
0.1	0.231	0.231	0.231	0.231	0.230	
0.2	0.231	0.230	0.230	0.230	0.229	
0.5	0.229	0.229	0.229	0.229	0.228	
1	0.226	0.227	0.226	0.226	0.226	
2	0.222	0.223	0.223	0.222	0.222	
5	0.211	0.213	0.212	0.212	0.211	
10	0.196	0.197	0.195	0.197	0.195	
20	0.172	0.173	0.168	0.173	0.168	
50	0.119	0.119	0.105	0.118	0.105	
100	0.059	0.056	0.046	0.056	0.042	

If frequency(kHz)	Output voltage attenuate quantity (dB) NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
0.1	0.000	0.000	0.000	0.000	0.000	
0.2	0.000	−0.038	−0.038	−0.038	−0.038	
0.5	−0.076	−0.076	−0.076	−0.076	−0.076	
1	−0.190	−0.152	−0.190	−0.190	−0.152	
2	−0.345	−0.306	−0.306	−0.345	−0.307	
5	−0.787	−0.705	−0.746	−0.746	−0.749	
10	−1.427	−1.383	−1.472	−1.383	−1.434	
20	−2.562	−2.511	−2.766	−2.511	−2.728	
50	−5.761	−5.761	−6.848	−5.835	−6.811	
100	−11.855	−12.308	−14.017	−12.308	−14.770	



CONDITION 【Standard value】less than 10 μ s, but delay time is 70% for input wave form:10A/5 μ s

Response wave form

TEST POINT	OSCILLOSCOPE SETTING	WAVE FORM
No. 1－1	Vert. 5A /div 200mV/div /div /div Horiz. 100ms/div Notes wave form 1: input wave form wave form 2: output wave form	
No. 1－2	Vert. 5A /div 200mV/div /div /div Horiz. 10 μ s/div Notes	
No. 1－3	Vert. 5A /div 200mV/div /div. /div. Horiz. 10 μ s/div Notes	

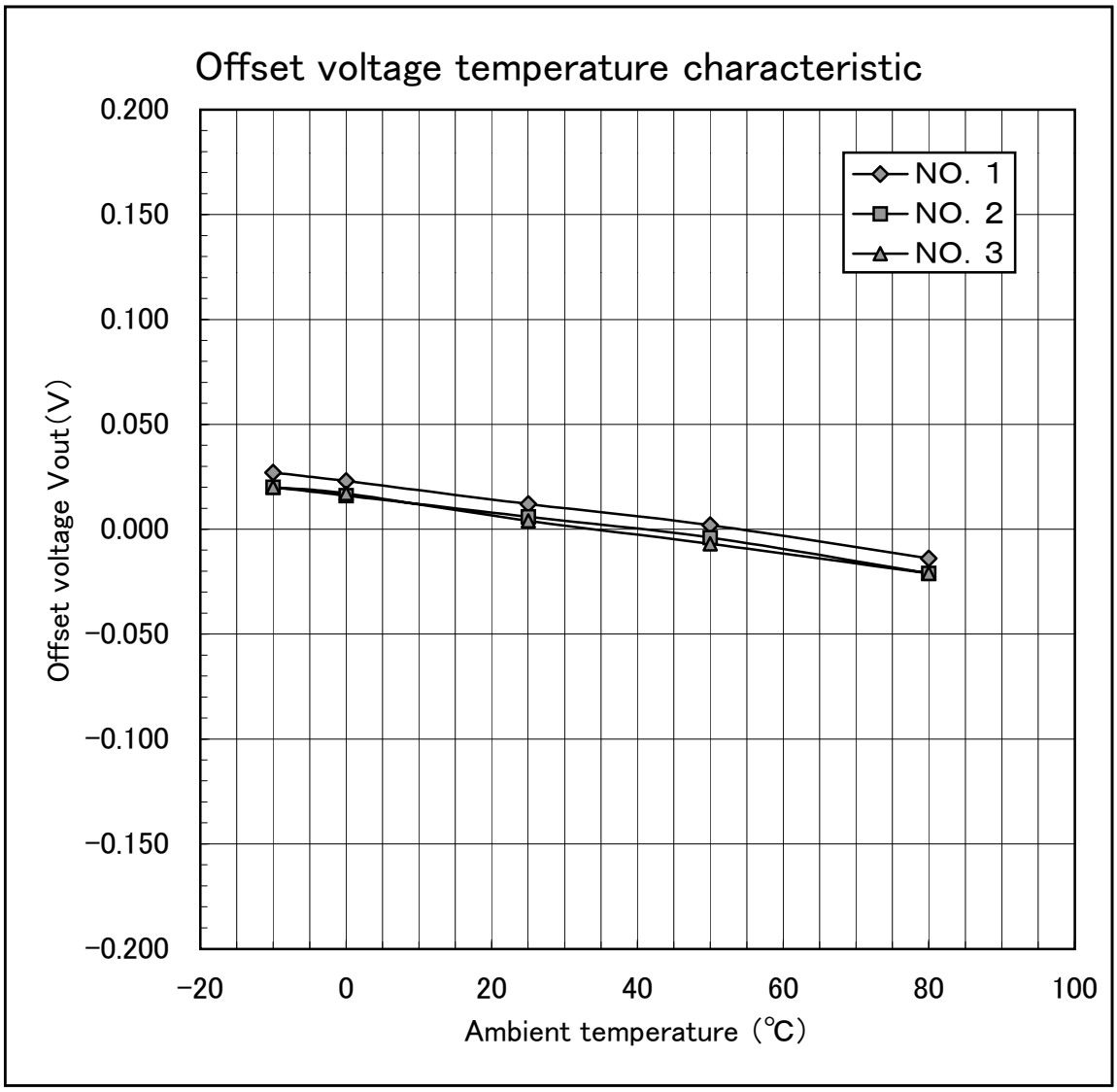
《Temperature characteristic－1（Offset voltage)》

Detected current If＝0（A） RL＝10kΩ Vcc＝±15V

Ambient temperature（℃）	Output voltage Vout（V） NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
−10	0.027	0.020	0.020			
0	0.023	0.016	0.017			
25	0.012	0.006	0.004			
50	0.002	−0.004	−0.007			
80	−0.014	−0.021	−0.021			

（mV/℃） 【standard value】

Coefficient 25→−10	0.429	0.400	0.457			1.000
Coefficient 25→ 80	−0.473	−0.491	−0.455			1.000



《Temperature characteristic－2（Rated output voltage）》

Detected current If＝100（A） RL＝10kΩ Vcc＝±15V

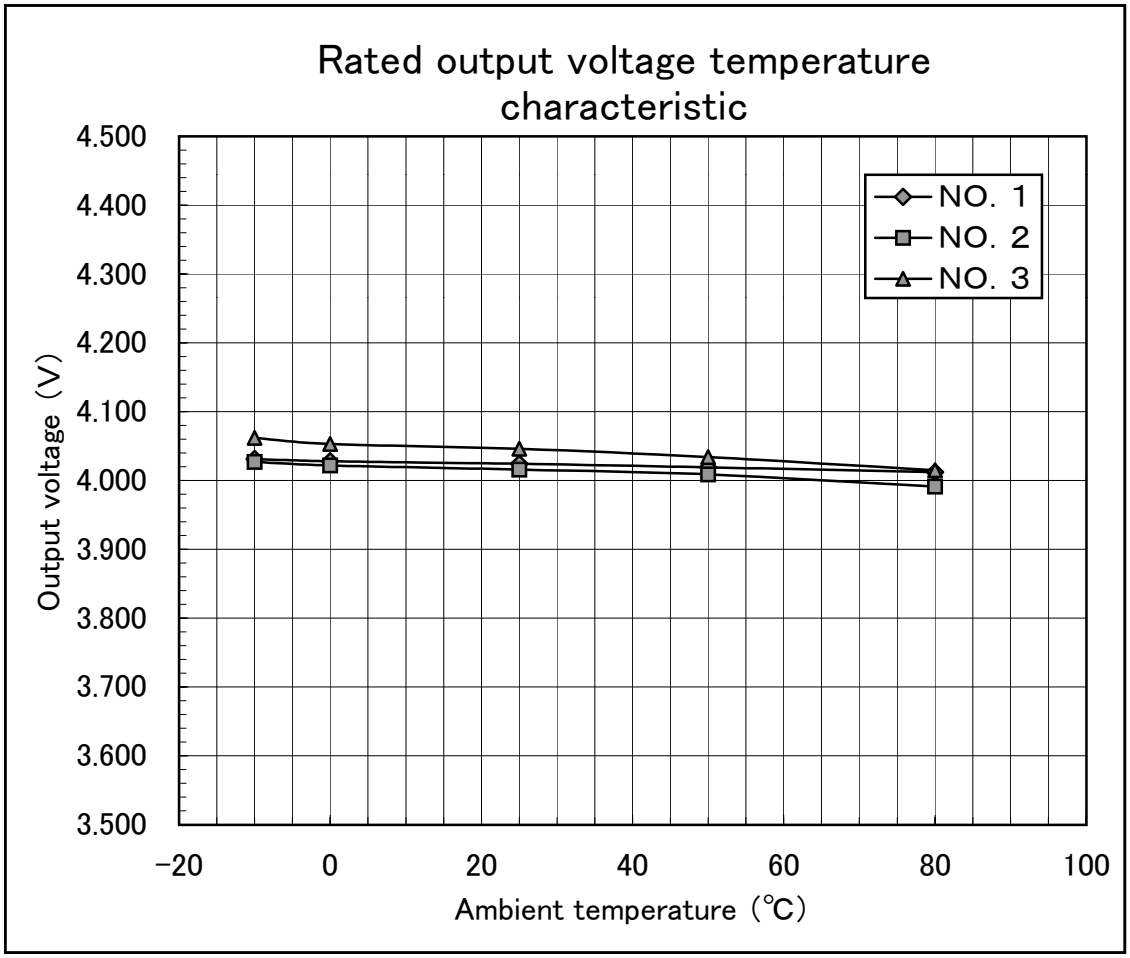
temperature (℃)	Output voltage Vout(V) NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
−10	4.058	4.047	4.082			
0	4.051	4.038	4.070			
25	4.036	4.022	4.050			
50	4.029	4.005	4.027			
80	3.998	3.970	3.994			

【considering offset voltage temperature fluctuations】Temperature characteristic−1(Offset voltage).

Ambient temperature(℃)	Output voltage Vout(V) NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	Remarks
−10	4.031	4.027	4.062			
0	4.028	4.022	4.053			
25	4.024	4.016	4.046			
50	4.019	4.009	4.034			
80	4.012	3.991	4.015			

（%/℃） 【standard value】

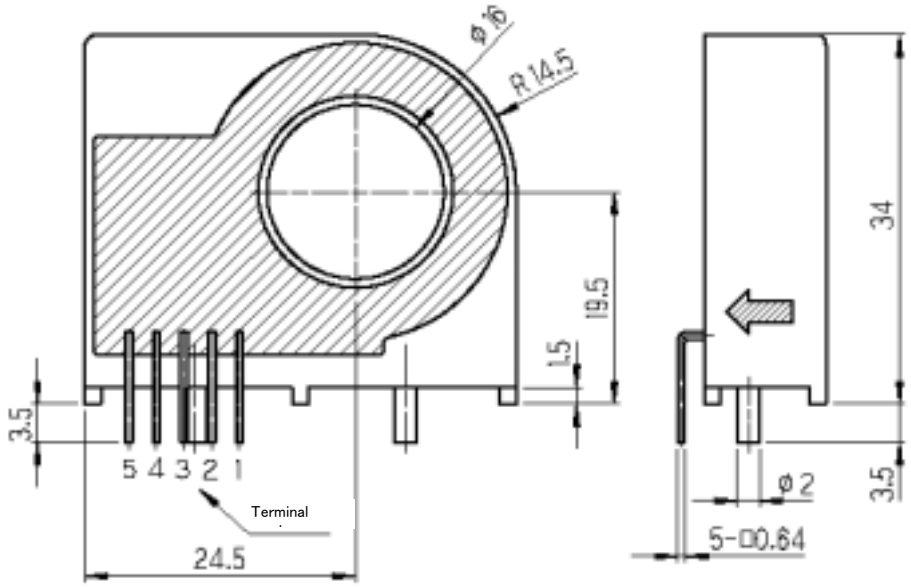
Coefficient 25→−10	0.005	0.008	0.011			0.050
Coefficient 25→ 80	−0.005	−0.011	−0.014			0.050

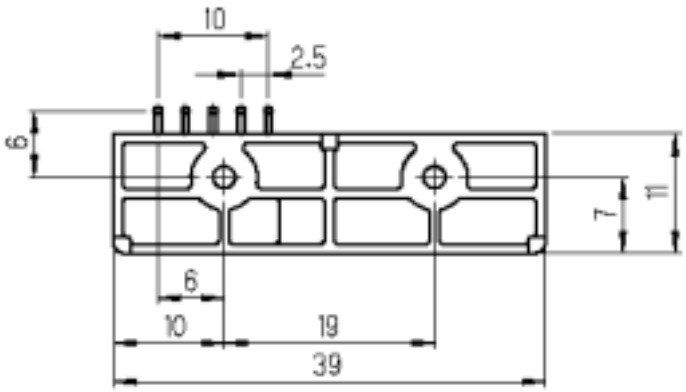


Current sensors specifications

Type Spec	L08S050D15	L08S100D15	L08S150D15	L08S200D15
Rated current	50AT	100AT	150AT	200AT
Saturation current	more than±150AT	more than±300AT	more than±350AT	more than±350AT
Output voltage	4V ±1% (Rated current,RL=10KΩ)			
Offset voltage	less than ±30mV (Input current=0)			
Output linearity	less than ±1% (Rated current)			
Power supply	±15V ±5%(Current draw from power supply approx. ±12mA)			
di/dt Response time	less than 10μSec(di/dt=10A/5μSec)			
Output temperature characteristic	less than ±0.1%/℃	less than ±0.05%/℃		
Offset temperature characteristic	less than ±2mV/℃	less than ±1mV/℃		
Hysteresis width	less than 30mV	less than 20mV (0⇔ rated current)		
Insulation withstanding	AC2500V, for 1minute,inside of through hole-terminal			
Insulation resistance	more than 500MΩ			
Operating temperature rage	-10～+80℃			
Storage temperature range	-20～+85℃			

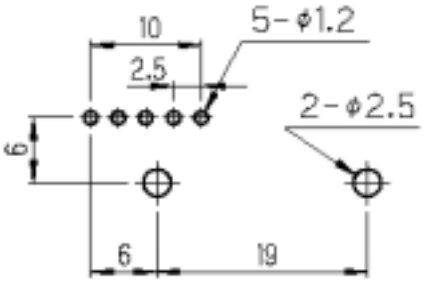
L08P***D15 series current sensors dimensions





Terminal number

1 +Vc(+15V)
2 -Vc(-15V)
3 OUT
4 GND(RTN)
5 NC



PCB hole measure (solder side figure)

Note

1. tolerance ±0.5
2. unit [mm]