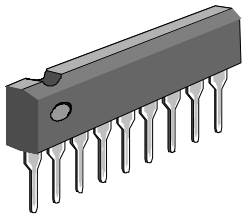
INTRODUCTION

The S1A2284A01 and S1A2284A02 are monolithic integrated circuits designed for 5-dot LED level meter drivers with a built-in rectifying amplifier. It is suitable for AC/DC level meters such as VU meters or signal meters.

9–SIP



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FEATURES

- High gain rectifying amplifier included (G_V = 26dB)
- Low radiation noise when LED turns on
- Logarithmic indicator for 5-dot bar type LED (–10, –5, 0, 3, 6dB)
- Constant current output
  S1A2284A01: Io = 15mA (Typ)
  S1A2284A02: Io = 7mA (Typ)
- Wide operating supply voltage range:
  V_{CC} = 3.5V – 1 6V
- Minimum number of external parts required

ORDERING IN FORMATION

Device	Package	Operating Temperature	I_D
S1A2284A01-I0U0	9–SIP	– 20°C – + 80°C	15mA
S1A2284A02-I0U0			7mA

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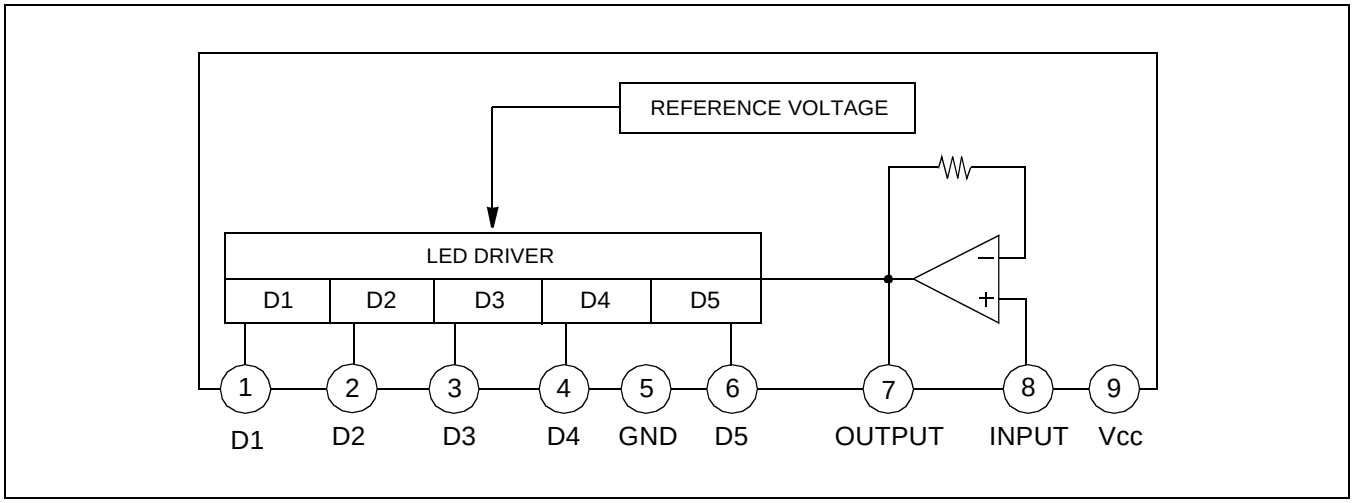
BLOCK DIAGRAM



NOTE: Capacitor to be omitted when used as a DC input signal meter

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	18	V
Amp Input Voltage	$V_{8\text{-}5}$	–0.5 – V_{CC}	V
Pin 7 Voltage	$V_{7\text{-}5}$	6	V
D Terminal Output Voltage	V_D	18	V
Circuit Current	I_{CC}	12	mA
D Terminal Output Current	I_D	20	mA
Power Dissipation	P_d	1100	mW
Operating Temperature	T_{OPR}	–20 – + 80	°C
Storage Temperature	T_{STG}	–40 – + 125	°C

NOTE: 11mW/°C is decreased at higher temperature than T_a = 25°C.

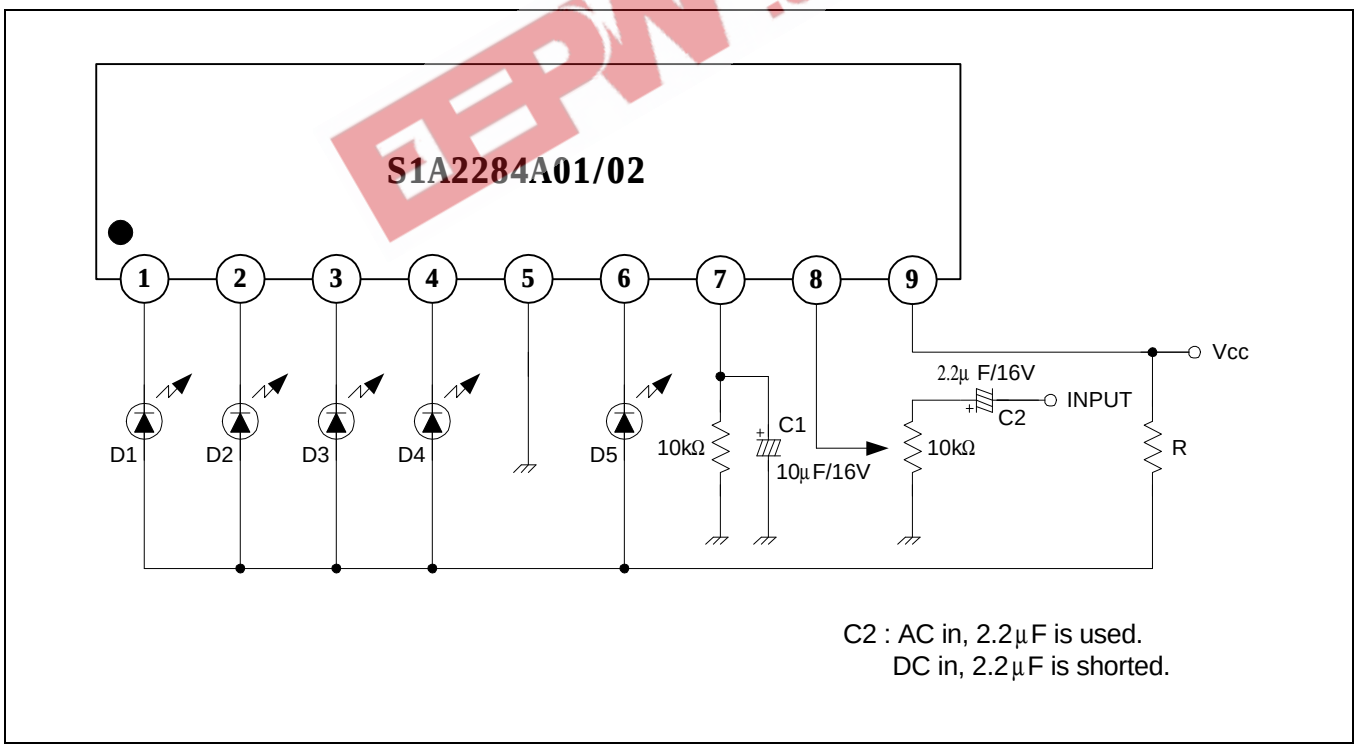
ELECTRICAL CHARACTERISTICS

(T_a = 25°C, V_{CC} = 6V, f = 1kHz, unless otherwise specified)

Characteristic		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Circuit Current		I_{CCQ}	V_i = 0V	–	6	8.5	mA
D Output Current	S1A2284A01	I_O	V_i = 0.15V	11	15	18.5	mA
	S1A2284A02			5	7	9.5	
Input Bias Current		I_{BIAS}	–	–1	–	0	µA
Amp Gain		G_V	V_I = 0.1 V	24	26	28	dB
Comparator ON Level	$V_{CL\ (ON)}$	$V_{CL(ON)1}$	–	–12	–10	–8	dB
		$V_{CL(ON)2}$		–6	–5	–4	
		$V_{CL(ON)3}$		–	0	–	
		$V_{CL(ON)4}$		2.5	3	3.5	
		$V_{CL(ON)5}$		5	6	7	

NOTE: Definition of 0dB: input voltage level when $V_{CL\ (ON)3}$ turn ON (50mV)

TEST CIRCUIT



C2 : AC in, 2.2µF is used.
DC in, 2.2µF is shorted.

The recommended value of R at T_a (max) = 60°C.

V_{CC} (V)	8 – 12	10 –14	12 – 16
R(Ω)	47	68	91

By changing the time constant C_1 and C_2, the response, attack and release time may be varied. In the above application conditions, power dissipation may be operated at higher levels than the absolute maximum ratings.
The wattage of R is to be determined by the total LED current and R value recommended by the R table.

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