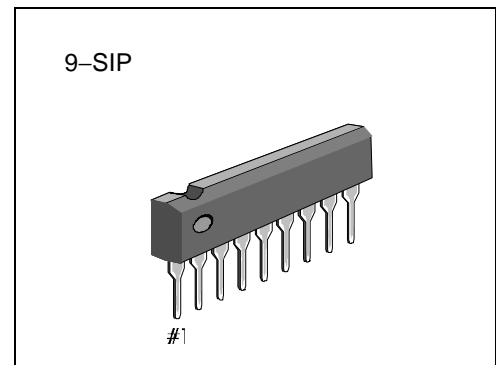


## INTRODUCTION

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.

## FEATURES

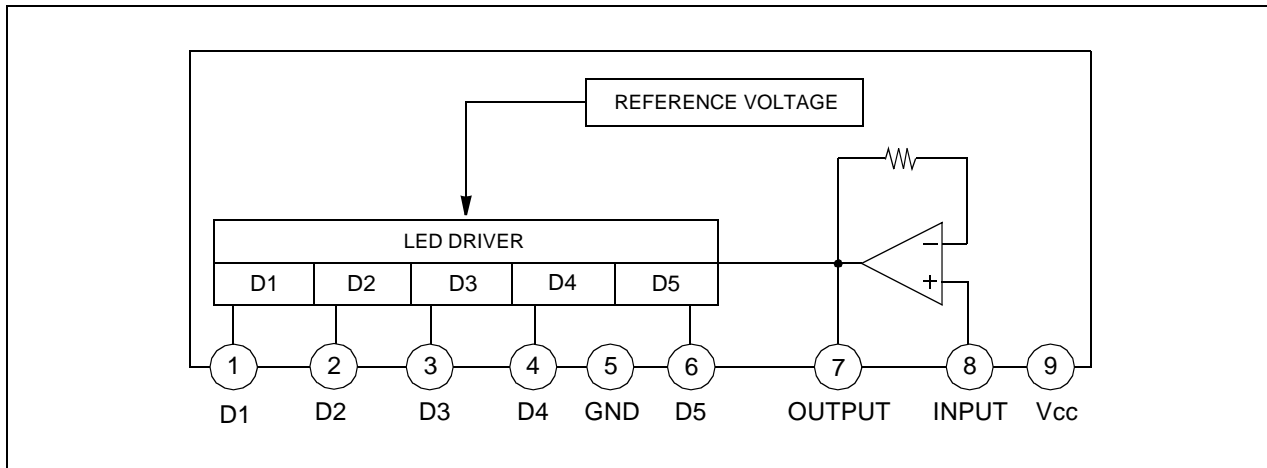
- High gain rectifying amplifier included ( $G_V = 26\text{dB}$ )
- Low radiation noise when LED turns on
- Logarithmic indicator for 5-dot bar type LED ( $-10, -5, 0, 3, 6\text{dB}$ )
- Constant current output  
S1A2284A01:  $I_o = 15\text{mA}$  (Typ)  
S1A2284A02:  $I_o = 7\text{mA}$  (Typ)
- Wide operating supply voltage range:  
 $V_{CC} = 3.5\text{V} - 16\text{V}$
- Minimum number of external parts required



## ORDERING INFORMATION

Device	Package	Operating Temperature	$I_D$
S1A2284A01-I0U0	9-SIP	$-20^\circ\text{C} - +80^\circ\text{C}$	15mA
S1A2284A02-I0U0			7mA

## 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	$V_{8-5}$	$-0.5 - V_{CC}$	V
Pin 7 Voltage	$V_{7-5}$	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  $T_a = 25^\circ\text{C}$ .

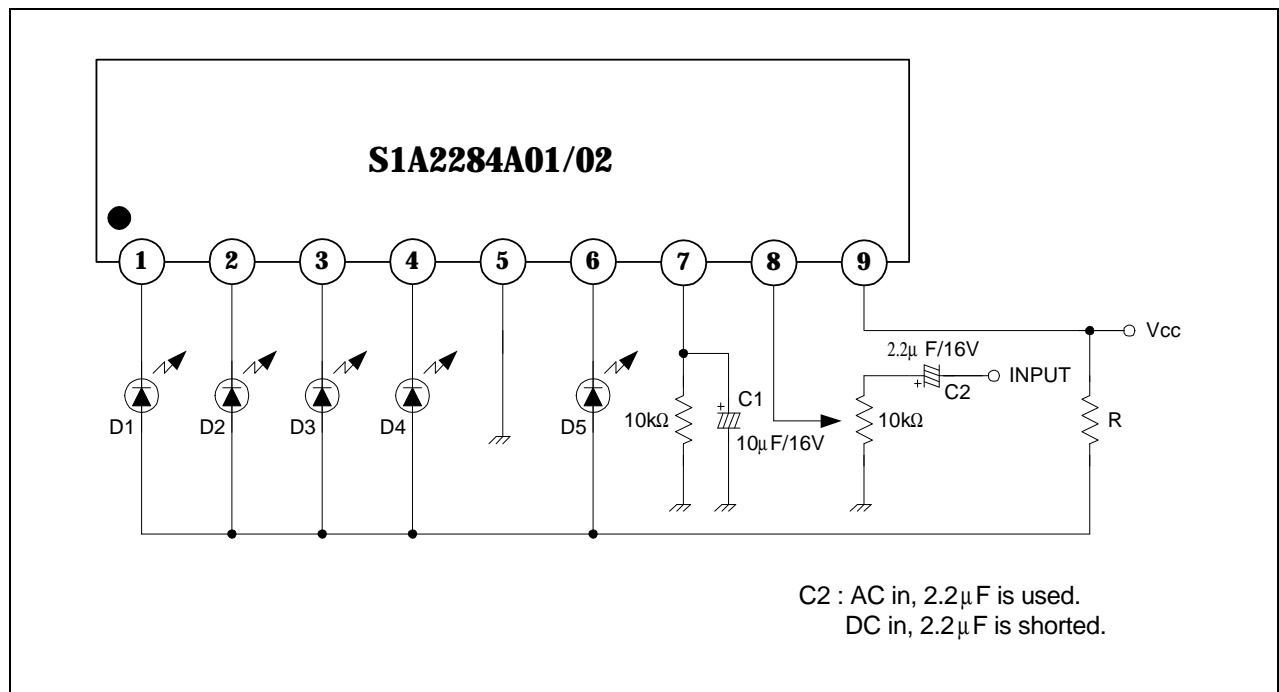
**ELECTRICAL CHARACTERISTICS**

( $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 6\text{V}$ ,  $f = 1\text{kHz}$ , unless otherwise specified)

Characteristic		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Circuit Current		$I_{CCQ}$	$V_i = 0\text{V}$	-	6	8.5	mA
D Output Current	S1A2284A01	$I_o$	$V_i = 0.15\text{V}$	11	15	18.5	mA
	S1A2284A02			5	7	9.5	
Input Bias Current		$I_{BIAS}$	-	-1	-	0	$\mu\text{A}$
Amp Gain		$G_V$	$V_i = 0.1\text{V}$	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**



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

$V_{CC}$ (V)	8 – 12	10 – 14	12 – 16
R( $\Omega$ )	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.