AN8356S

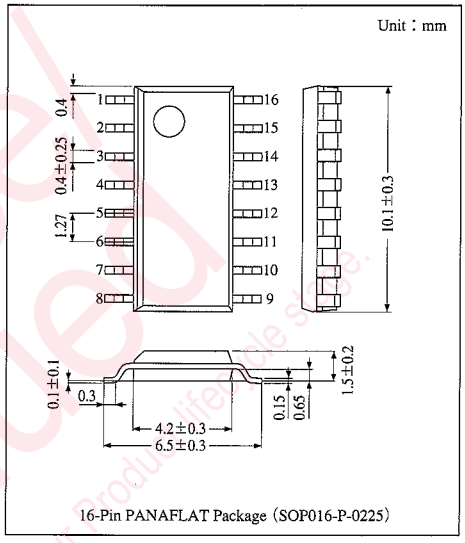
Bar-Code Scanner IC for VCR

■ Overview

The AN8356S is an IC developed as a bar code scanner for VCR. It converts a photocurrent received by a photosensor into a voltage waveform and shapes that.

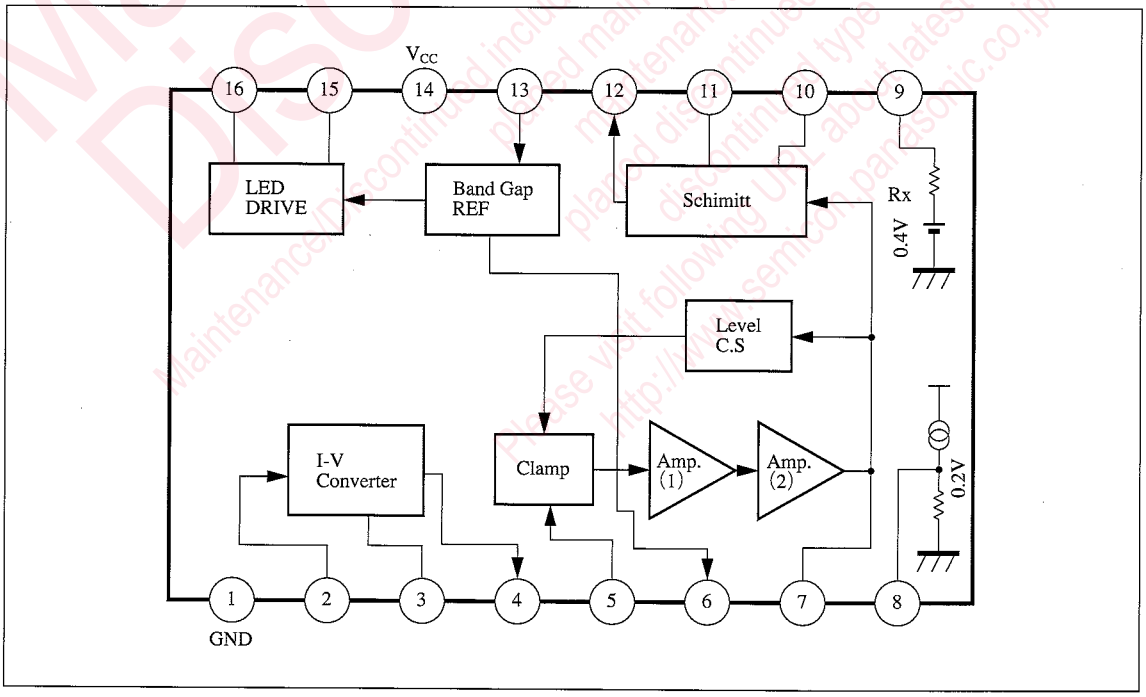
■ Features

- Low operating voltage : Operable with 2 batteries.
- Built-in LED drive circuit.
- LED drive current is determined by an external resistor.
- Few external circuits (9).



16-Pin PANAFLAT Package (SOP016-P-0225)

■ Block Diagram



■ Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	5	V
Power dissipation	P_D	120	mW
Operating ambient temperature	T_{opr}	−20 to +75	℃
Storage temperature	T_{stg}	−55 to +125	℃

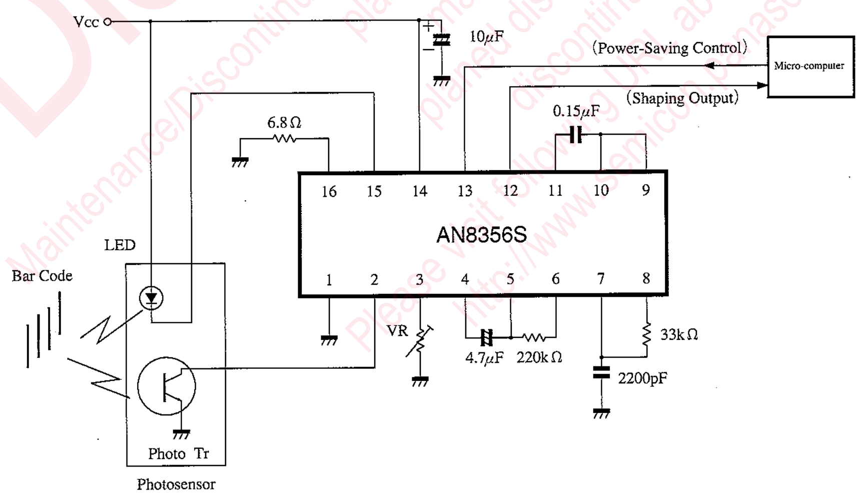
■ Recommended Operating Range (Ta=25℃)

Parameter	Symbol	Range
Operating supply voltage range	V_{CC}	2.2V to 3.5V

■ Electrical Characteristics (V_{CC}=3V, V_{13-1}=0V, Ta=25℃)

Parameter	Symbol	Condition	min	typ	max	Unit
Supply current (ON)	I_{CC1}		—	—	5.5	μA
Supply current (OFF)	I_{CC2}	Pin⑬ at V_{CC}	—	—	2	μA
Output pin voltage "L"	V_{OL}	I_{12}=0.5mA	—	—	0.4	V
Output pin voltage "H"	V_{OH}	I_{12}=−50μA	2.5	—	—	V
I-V amp. gain	$G_{I\text{-}V}$	I_2=3μ$A_{P\text{-}P}$, f=1kHz, Sine wave. Add 10kΩ to Pin③ and measure a pin voltage.	−1.5	—	0.3	dB
Clamp amp. gain	G_{CL}	Add 2.7kΩ to between the Pins⑦ and ⑧, and measure Pin⑦ output voltage.	29.5	—	33.5	dB
Hysteresis width	V_{HI}	f=1kHz, Sine wave. Measure Pin⑪ amplitude.	90	—	155	mV
Duty ratio	T_{DT}	f=1kHz, Sine wave. Measure Pin⑫ duty ratio. $T_{DT}=\frac{T_L}{T_H}$	0.85	—	1.15	—
LED drive voltage	V_{CS}	Measure Pin⑯ pin voltage	86	—	114	mV

■ Application Circuit



Request for your special attention and precautions in using the technical information and semiconductors described in this book

(1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.

(2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products. No license is granted in and to any intellectual property right or other right owned by Panasonic Corporation or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.

(3) The products described in this book are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).
Consult our sales staff in advance for information on the following applications:
- Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
- Any applications other than the standard applications intended.

(4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.

(5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
 Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.

(6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.

20080805