CHERRY SEMICONDUCTOR

CS-180

WINDOW COMPARATOR FOR MANUAL APERTURE

DESCRIPTION:

The CS-180 is a monolithic integrated voltage operated window discriminator.

One output is energized when the input voltage exceeds the upper window limit. A second output is energized when the input voltage is less than the lower window limit.

Both outputs are abruptly disabled, regardless of input condition, when Vcc falls below a predetermined level. This feature can be used as a battery tester in battery operated applications.

The outputs are current regulated to operate LED indicators directly without limiting resistors, even at Vcc values that exceed the LED forward voltage by only 150 millivolts.

The IC will withstand reversal of the power supply up to the maximum rated voltage.

The CS-180 was designed specifically for manual aperture control in cameras, but can be utilized in many other applications when a bi-level voltage comparator is required.

RECOMMENDED OPERATING CIRCUIT FOR CAMERA IRIS CONTROL

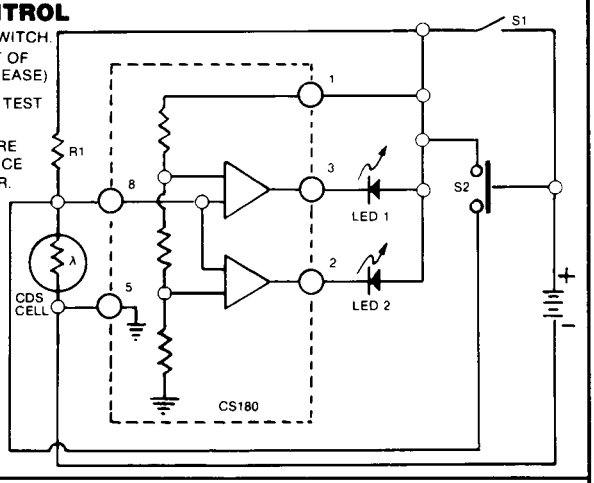
S1—POWER SWITCH. (MAY BE PART OF SHUTTER RELEASE)

S2—BATTERY TEST SWITCH

R1—EXPOSURE REFERENCE RESISTOR.

(Rλ = R1 FOR CORRECT EXPOSURE)

R2—BATTERY TEST LOAD



BATTERY TEST FEATURE:

If Vcc is less than 2.0V ± 0.1V at +20°C both LED's will be off, regardless of value of Rλ.

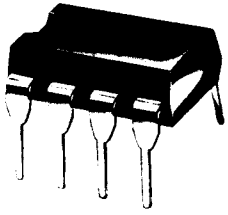
NOTE:

LED outputs are current limited to approximately 15mA.

ELECTRICAL SPECIFICATIONS

NOTE: Vcc = 2.2 To 4.5V; TA = 20°C; Unless Specified. All Voltages Referenced to Pin 5.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Lower Comparator Threshold	Output 2 Off → On	.395	.417	.438	xVCC
Upper Comparator Threshold	Output 1 Off → On	.554	.583	.613	xVCC
Battery Test Threshold (VBC)	V8 = 0 or VCC	1.9	2.0	2.2	V
Batt. Test Threshold Temp. Coefficient			+.33		%/C
Input Current (I8)	V8 = 0.5 VCC		10	25	NA
Output On Current I2 and I3	V_2, V_3 = .25 To VCC VCC ≥ VBC + .1V	8	16	25	mA
Output "Off" Currents	V8 = 0.5 VCC		1	50	μA
Supply Current (I1)	V8 = 0.5 VCC			2.5	mA



ABSOLUTE MAXIMUM RATINGS

VCC (V_1) ..... 6.5 Volts
V Input (I_8) VCC
V Out (V_2, V_3) VCC
Operating Temperature ..... -20°C to +70°C
Storage Temperature ..... -40°C to +.25°C

CIRCUIT OPERATION: