

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 V_{CC} 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 V_{CC} 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.

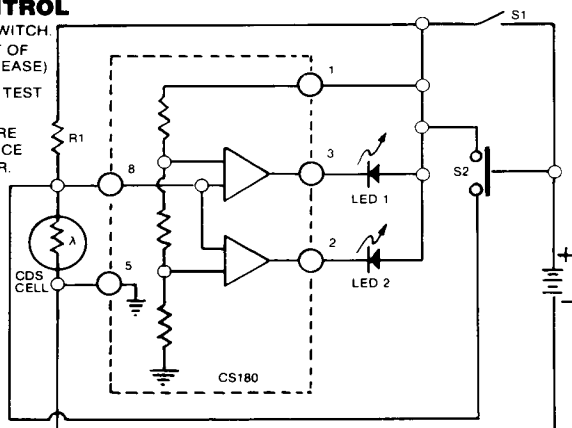
The CS-180 was designed specifically for manual aperture control in cameras, but can be utilized in many other applications when a bi-level voltage comparator is required.

RECOMMENDED OPERATING CIRCUIT FOR CAMERA IRIS CONTROL

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

S2—BATTERY TEST SWITCH

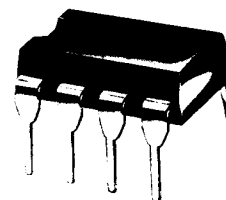
R1—EXPOSURE REFERENCE RESISTOR.
($R_A = R_1$ FOR CORRECT EXPOSURE)



ELECTRICAL SPECIFICATIONS

NOTE: $V_{CC} = 2.2$ To $4.5V$; $T_A = 20^\circ C$; Unless Specified. All Voltages Referenced to Pin 5.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Lower Comparator Threshold	Output 2 Off — On	.395	.417	.438	$\times V_{CC}$
Upper Comparator Threshold	Output 1 Off — On	.554	.583	.613	$\times V_{CC}$
Battery Test Threshold (V_{BC})	$V_B = 0$ or V_{CC}	1.9	2.0	2.2	V
Batt. Test Threshold Temp. Coefficient			+ .33		%/C
Input Current (I_B)	$V_B = 0.5 V_{CC}$		10	25	NA
Output On Current I_2 and I_3	$V_2, V_3 = .25$ To V_{CC} $V_{CC} \geq V_{EC} + .1V$	8	16	25	mA
Output "Off" Currents	$V_B = 0.5 V_{CC}$		1	50	μA
Supply Current (I_1)	$V_B = 0.5 V_{CC}$			2.5	mA



ABSOLUTE MAXIMUM RATINGS

$V_{CC} (V_1)$	6.5 Volts
V Input (a)	V_{CC}
V Out (V_2, V_3)	V_{CC}
Operating Temperature	$-20^\circ C$ to $+70^\circ C$
Storage Temperature	$-40^\circ C$ to $+25^\circ C$

R2—BATTERY TEST LOAD

BATTERY TEST FEATURE:

If V_{CC} is less than $2.0V \pm 0.1V$ at $+20^\circ C$ both LED's will be off, regardless of value of R_A .

NOTE:

LED outputs are current limited to approximately 15mA.

CIRCUIT OPERATION:

