

Operational Amplifier/ Comparator

With Shutdown Control and Isolated Transistor

FEATURES:

- Operates from single power supply
- High output current (50 mA max.)
- Output sink current or drive current capability
- Output disable control

The RCA-CA3177E* is a multiple-control amplifier/comparator monolithic integrated circuit intended for use in general purpose applications requiring comparator functions with logic override switching and control. An op-amp with differential inputs drives an output transistor with high current capability. An isolated transistor is also available for optional use.

The CA3177E is supplied in the 8-lead dual-in-line plastic (Mini-DIP) package.

*Formerly RCA Dev. Type No. TA10387.

Applications:

- Comparator
- Switching and gating control
- Power switch/amplifier
- Switching regulator
- Pulse width modulator
- TV horizontal drive amplifier

MAXIMUM RATINGS, Absolute-Maximum Values:

DC SUPPLY VOLTAGE:

V1, V5, V5 +15 V

INPUT CURRENT:

13, 14, 17, 18 ± 1 mA

OUTPUT CURRENT:

I1 50 mA

I6 10 mA

DEVICE DISSIPATION, (Including Q14):

At $T_A \leq 25^\circ\text{C}$ 625 mW

At $T_A > 25^\circ\text{C}$ Derate linearly 5 mW/ $^\circ\text{C}$

Q14 DISSIPATION:

At $T_A \leq 25^\circ\text{C}$ 150 mW

At $T_A > 25^\circ\text{C}$ Derate linearly 1.2 mW/ $^\circ\text{C}$

AMBIENT TEMPERATURE RANGE:

Operating 0 to $+70^\circ\text{C}$

Storage -65 to $+150^\circ\text{C}$

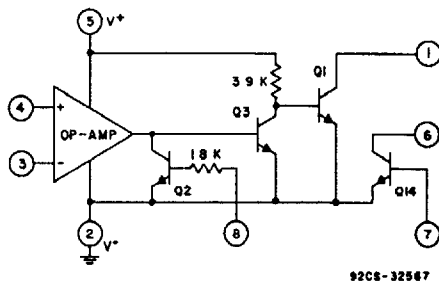
LEAD TEMPERATURE (DURING SOLDERING):

At distance $1/16 \pm 1/32$ inch (1.59 $\pm$ 0.79 mm) from case for 10 s max. 265°C

CA3177

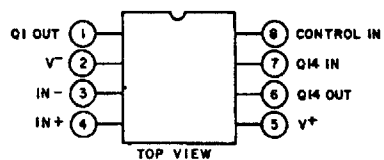
ELECTRICAL CHARACTERISTICS at $T_A = 25^\circ\text{C}$, $V^+ (V5) = 15\text{ V}$,
except as noted

CHARACTERISTIC	CONDITIONS	LIMITS		UNITS
		Min.	Max.	
Operational Amplifier				
Input Offset Voltage, V_{IO}		—	100	mV
Input Bias Current, I_B		—	15	μA
Common-Mode Input Voltage Range, V_{ICR}		2	12	V
Amplifier Supply Current, I_S		3	10	mA
Q14 Amplifier				
DC Forward-Current Transfer Ratio, h_{FE}	$V_{CE} = 10\text{ V}$, $I_B = 0.1\text{ mA}$	45	—	
	$V_{CE} = 10\text{ V}$, $I_B = 2\text{ mA}$	45	—	
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$	$I_7 = 0.2\text{ mA}$, $I_8 = 2\text{ mA}$	—	0.6	V
Q1 Amplifier				
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$	$I_8 = 0.15\text{ mA}$, $I_1 = 30\text{ mA}$	—	0.4	V



92CS-32567

Fig. 1—Functional diagram for CA3177E.



92CS-32568R1

TOP VIEW
TERMINAL ASSIGNMENT