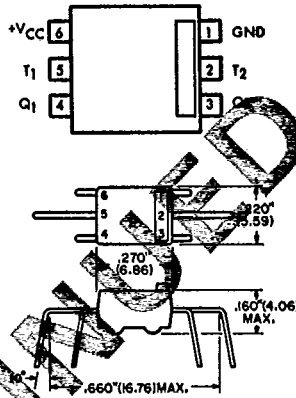


# ECG<sup>®</sup> Semiconductors

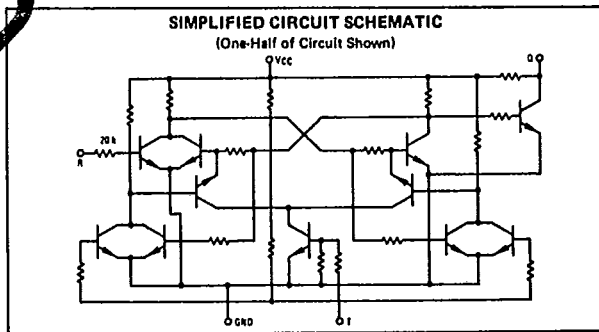
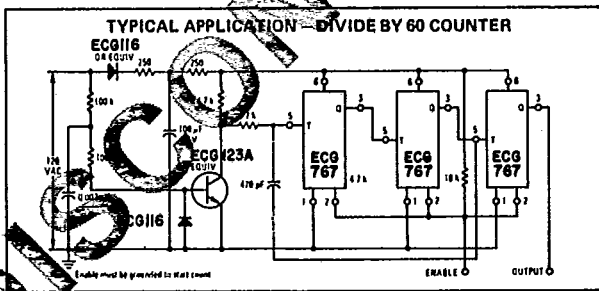
## ECG767 DUAL TOGGLE FLIP-FLOP WITH RESET

- Wide Operating Voltage Range - 4.0 to 16 Volts
- Regulated Supply Not Required
- Compatible with TTL and DTL
- Economical 6-Lead Plastic Package
- Reset (R) Available to Set Output to 0 Regardless of Previous History



**MAXIMUM RATINGS**

Rating	Symbol	Value	Volts
Power Supply Voltage	V <sub>CC</sub>	19	Vdc
Output Sinking Current	I <sub>sink</sub>	15	mA
Negative Input Voltage	V <sub>in</sub>	0.5	Vdc
Power Dissipation @ T <sub>A</sub> = 25°C	P <sub>D</sub>	1.0	Watt
Derate above 25°C	1/θ <sub>JA</sub>	.10	mW/°C
Operating Temperature Range	T <sub>A</sub>	-10 to +75	°C

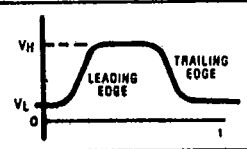


**ELECTRICAL CHARACTERISTICS** ( $V_{CC} = 12$  Vdc,  $V_{in} = 4.0$  V, Square Pulse,  $f = 10$  kHz, 50% Duty Cycle,  $t_f = 1.0$  V/ $\mu$ s (Min),  $T_A = 25^\circ$ C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Operating Power Supply Voltage	$V_{CC}$	4.0	—	16	Vdc
Toggle Frequency	$f_{Tog}$	—	3.0	—	MHz
Output Voltage (High) ( $V_{CC} = 4.0$ Vdc) ( $V_{CC} = 16$ Vdc)	$V_{OH}$	3.5 15.5	— —	— —	Vdc
Output Voltage (Low) ( $V_{CC} = 4.0$ Vdc) ( $V_{CC} = 16$ Vdc)	$V_{OL}$	— —	— —	0.5 1.0	Vdc
Operating Drain Current	$I_D$	—	—	32	mAdc
Output Sinking Current ( $V_O = 1.0$ Vdc)	$I_{sink}$	—	8.0	—	mAdc
Rise Time	$t_r$	—	250	—	ns
Storage Time	$t_s$	—	350	—	ns
Fall Time	$t_f$	—	60	—	ns
Cross Talk ( $V_{in} = 15$ V, Square Pulse, $V_{CC} = 16$ Vdc) T1 to Q2 T2 to Q1	$V_o$	— —	— —	15 15	mV
Max $V_{in}$ at R for no effect @ $75^\circ$ C	—	—	1.0	—	Vdc
Input Resistance	$R_{in}$	10	—	—	k $\Omega$
Output Resistance (Output High)	$R_{OH}$	—	—	2.8	k $\Omega$

**INPUT PULSE REQUIREMENTS**

Characteristic	Symbol	Min	Max	Unit
Pulse Magnitude	$V_H$	+4.0	—	Volts
Zero Level	$V_L$	—	+1.0	Volts
Leading Edge	No Requirement			
Trailing Edge	$\frac{dv}{dt}$	-1.0	—	$\frac{\text{Volts}}{\mu\text{s}}$



**FIGURE 2 - RMS CURRENT DRAIN versus SUPPLY VOLTAGE**

