



### Radio Shack 276-3142 Infrared Emitter and Detector Pair

Detector:

$V_{CE0}$  Collector to emitter: 70V  
 $V_{ECO}$  Emitter to collector: 5V  
 $I_C$  Collector current: 50mA  
 Total power dissipation: 150mW  
 Peak sensitivity wavelength: 850nm  
 Angle of half sensitivity:  $\pm 20^\circ$

Emitter

Reverse voltage: 5V  
 Continuous forward current: 150mA  
 Radiant power output: 13-15mW  
 Wavelength at peak emission: 950nm

$R_E = 22 \text{ Ohm, 1 Watt}$

$R_D = 4.7K \text{ Ohm, 0.25 Watt}$

$R_B = 10K \text{ Ohm, 0.25 Watt}$

$I_B = 0.35mA$

$R_C = 47 \text{ Ohm, 0.25 Watt}$

$I_C = 35mA$

### Radio Shack 276-2103 NPN Small Signal Transistor

DC Current Gain ( $h_{FE}$ ): 100-300  
 Collector-Emitter Saturation ( $V_{CE}$ ): 0.2V  
 Base-Emitter Saturation ( $V_{BE}$ ): 0.85V  
 Power Dissipation: 350mW

### Radio Shack 276-312 Blinking Red LED

Forward voltage: 3.0V typical, 3.8V max  
 Max Current: 35mA  
 Luminous Intensity: 880mcd  
 Peak emission wavelength: 660nm  
 Viewing angle:  $20^\circ$