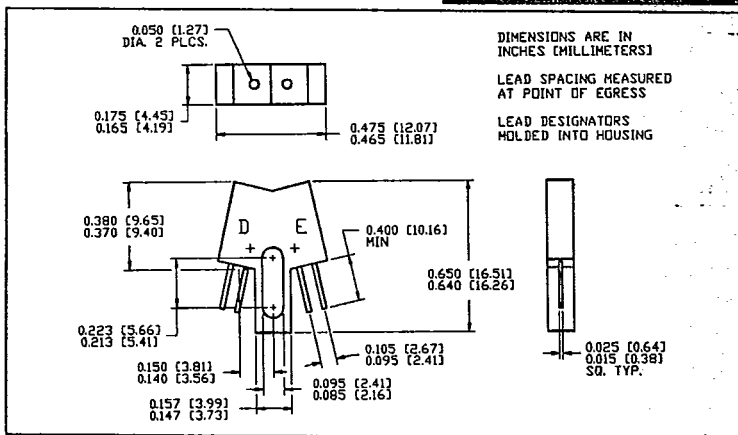
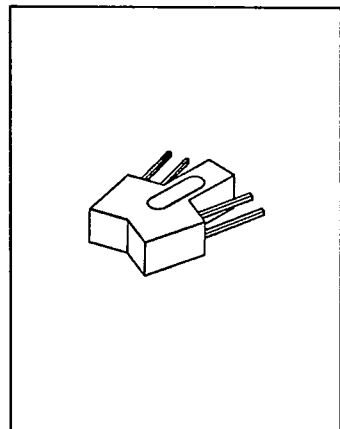


R-260/261 Series

Reflective Optical Switches



T-41-73



Features

- pc board mount or wire leads⁽¹⁾
- phototransistor output (R-260)
- photodarlington output (R-261)
- two sensitivity ranges (each sensor)
- low-cost construction

Description

The R-260 series consists of a gallium arsenide IRED and silicon sensor (R-260 is a phototransistor, R-261 is a photodarlington), mounted in an injection-molded plastic housing. The series is designed to provide peak current-transfer-ratio at approximately 0.200" (5.1mm) between the front of the housing and a reflective medium. Crosstalk is negligible in this design and can be assumed to be no greater than the maximum allowed value of dark current, I_D . For additional information, call Senisys for applications assistance.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise stated.)

Storage and Operating Temperature..... -40°C to $+85^\circ\text{C}$
 Lead Soldering Temperature⁽²⁾..... 240°C ⁽³⁾

IRED

Continuous Forward Current.....50mA
 Peak Forward Current (1 μs pulse width, 300pps).....3A
 Reverse Voltage.....3V
 Power Dissipation.....100mW⁽⁴⁾

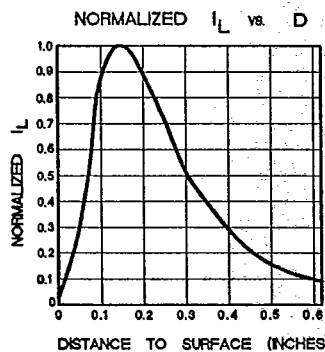
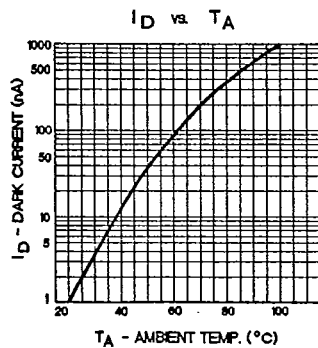
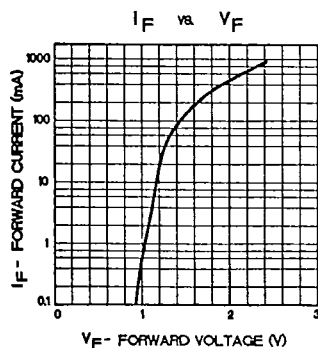
Sensor

Collector-Emitter Voltage.....30V
 Emitter-Collector Voltage.....5V
 Power Dissipation.....100mW⁽⁴⁾

Notes:

1. Add a -W suffix to order with 12" (305mm) minimum, 26 AWG, UL 1429 wire.
2. 0.06" (1.5mm) from the case for 5 seconds maximum. (pc board mount configuration)
3. 260°C maximum when wave soldering. (pc board mount configuration)
4. Derate linearly from 25°C at $-1.33 \text{ mW}/^\circ\text{C}$.

Fundamental Characteristics



Senisys • 1600 West Plano Parkway • Plano, Texas 75075 • Phone: 214-422-1844 • FAX: 214-423-4661

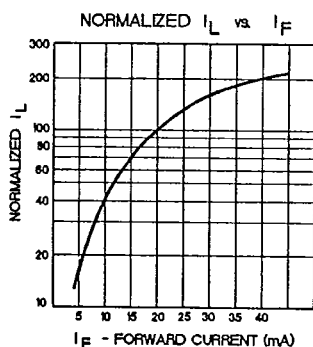
T-41-73

R-260/261 Series**Reflective Optical Switches****Electrical Characteristics** ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbol	Parameter	min	max	units	Test Conditions
Input Diode					
V_F	Forward Voltage	-	1.60	V	$I_F = 40\text{mA}$
I_R	Reverse Current	-	10	μA	$V_R = 3.0\text{V}$
Output Phototransistor⁽¹⁾					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage				
	R-260	30	-	V	$I_C = 1.0\text{mA}$
	R-261	15	-	V	$I_C = 1.0\text{mA}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0	-	V	$I_E = 100\mu\text{A}$
I_D	Dark Current				
	R-260	-	100	nA	$V_{CE} = 10\text{V}, E_0 = 0$
	R-261	-	250	nA	$V_{CE} = 10\text{V}, E_0 = 0$
Coupled					
I_L	Light Current				
	R-260-A ^{(2) (3)}	0.20	-	mA	$I_F = 30\text{mA}, V_{CE} = 5\text{V}, d = 0.200"$
	R-260-B ^{(2) (3)}	0.80	-	mA	$I_F = 30\text{mA}, V_{CE} = 5\text{V}, d = 0.200"$
	R-261-A ^{(2) (3)}	2.0	-	mA	$I_F = 30\text{mA}, V_{CE} = 5\text{V}, d = 0.200"$
	R-261-B ^{(2) (3)}	4.0	-	mA	$I_F = 30\text{mA}, V_{CE} = 5\text{V}, d = 0.200"$

Notes:

- Radiation outside the sensitivity range of the device may be present during these measurements. Sufficient protection has been provided when the parameter being measured cannot be altered by further irradiation shielding.
- Other ranges of light current can be specified; call Senisys for applications assistance.
- 'd' is the distance to a front-surface mirror; for all testing, $d = 0.200"$ (5.1mm).

Typical Characteristics**Wire Color Code:**

Collector White
 Emitter Blue
 Anode Orange
 Cathode Green