



NPN T-1 Modified 3 ϕ Phototransistor LTR-209

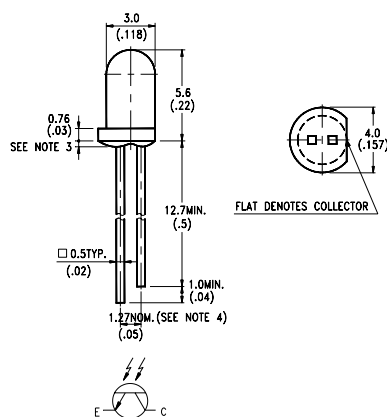
Features

- Wide range of collector currents.
- Lens for high sensitivity.
- Low cost plastic package.

Description

The LTR-209 consist of a NPN silicon phototransistor mounted in a lensed, clear plastic, end looking package. The lensing effect of the package allows an acceptance half angle of 8° measured from the optical axis to the half power point. This series is mechanically and spectrally matched to the LTR-209 series of infrared emitting diodes.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.010") unless otherwise noted.
3. Protruded resin under flange is 1.5mm (.059") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Maximum Rating	Unit
Power Dissipation	100	mW
Collector-Emitter Voltage	30	V
Emitter-Collector Voltage	5	V
Operating Temperature Range	-40°C to $+85^\circ\text{C}$	
Storage Temperature Range	-55°C to $+100^\circ\text{C}$	
Lead Soldering Temperature [1.6mm (.063 in.) from body]	260°C for 5 Seconds	

Electrical Optical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30			V	$I_C=1\text{mA}$ $E_e=0\text{mW/cm}^2$
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5			V	$I_E=100\text{ }\mu\text{A}$ $E_e=0\text{mW/cm}^2$
Collector Emitter Saturation Voltage	$V_{CE(SAT)}$			0.4	V	$I_C=100\text{ }\mu\text{A}$ $E_e=1\text{mW/cm}^2$
Rise Time	T_r		10		μS	$V_{CC}=5\text{V}$ $I_C=1\text{mA}$ $R_L=1\text{K }\Omega$
Fall Time	T_f		15		μS	
Collector Dark Current	I_{CEO}			100	nA	$V_{CE}=10\text{V}$ $E_e=0\text{mW/cm}^2$
On State Collector Current	$I_{C(ON)}$	1	4		mA	$V_{CE}=5\text{V}$ $E_e=1\text{mW/cm}^2$ $\lambda = 940\text{nm}$

INFRARED
PRODUCTS

Typical Electrical/Optical Characteristic Curves (25°C Ambient Temperature Unless Otherwise Noted)

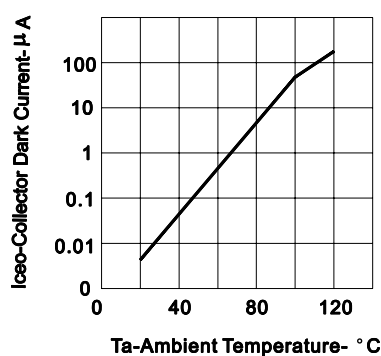


FIG.1 COLLECTOR DARK CURRENT VS AMBIENT TEMPERATURE

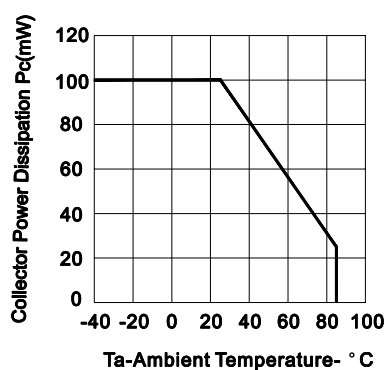


FIG.2 COLLECTOR POWER DISSIPATION VS AMBIENT TEMPERATURE

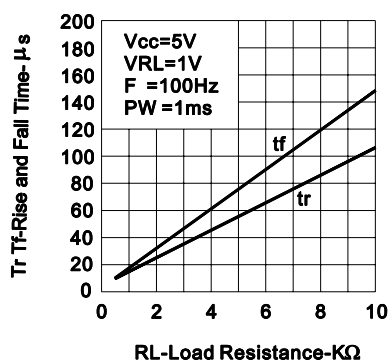


FIG.3 RISE AND FALL TIME VS LOAD RESISTANCE

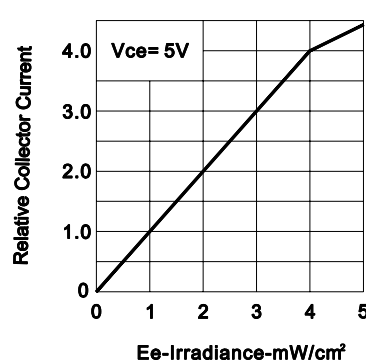


FIG.4 RELATIVE COLLECTOR CURRENT VS IRRADIANCE

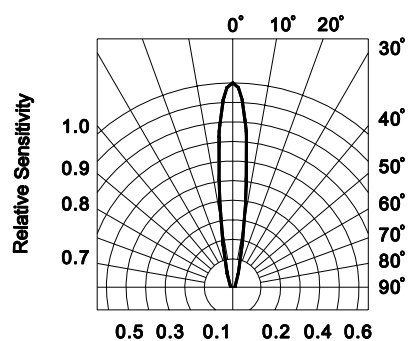


FIG.5 SENSITIVITY DIAGRAM



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