



NPN PLASTIC SIDE LOOK PHOTODETECTOR

LTR-301

FEATURES

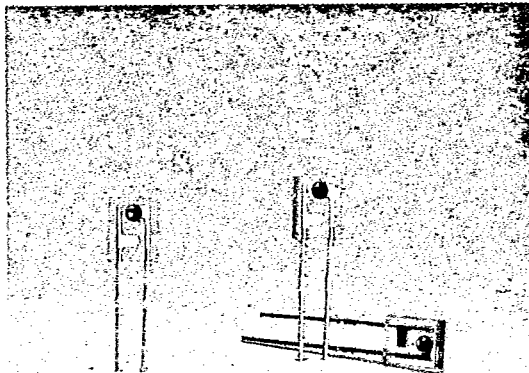
- WIDE RANGE OF COLLECTOR CURRENTS.
- LENSED FOR HIGH SENSITIVITY
- LOW COST PLASTIC PACKAGE.

DESCRIPTION

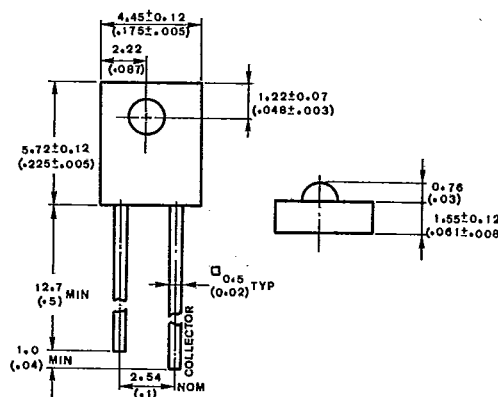
The LTR-301 consist of an NPN silicon phototransistor mounted in a lensed, clear plastic, end looking package. The lensing effect of the package allows an acceptance half angle of 20° measured from the optical axis to the half power point. This series is mechanically and spectrally matched to the LTR-301 series of infrared emitting diodes.

All electrical parameters are 100% tested by manufacturing. Specifications are guaranteed to a cumulative .65% AQL.

Collector current ranges on the LTR-301 through SLA are guaranteed to a 2.5% AQL.



PACKAGE DIMENSION



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 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	-55°C to $+100^\circ\text{C}$	
Storage Temperature Range	-55°C to $+100^\circ\text{C}$	
Lead Soldering Temperature [1.6mm (0.063 in) From Body]	260 $^\circ\text{C}$ for 5 Seconds	

ELECTRICAL CHARACTERISTICS AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION	REMARK
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	$I_E = 100\mu\text{A}$ $E_e = 0\text{mW/cm}^2$	
Collector Emitter Saturation Voltage	$V_{CE (SAT)}$			0.4	V	$I_c = 0.5\text{mA}$ $E_e = 20\text{mW/cm}^2$	
Rise Time	T_r		5		μS	$V_{CC} = 30\text{V}$ $I_c = 800\mu\text{A}$ $R_L = 1\text{k}\Omega$	
Fall Time	T_f		5		μS		
Collector Dark Current	I_{CEO}			100	nA	$V_{CE} = 10\text{V}$ $E_e = 0\text{mW/cm}^2$	
On State Collector Current	$I_{(ON)}$	0.2	1		mA	$V_{CE} = 5\text{V}$ $E_e = 1\text{mW/cm}^2$ $\lambda = 940\text{nm}$	

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

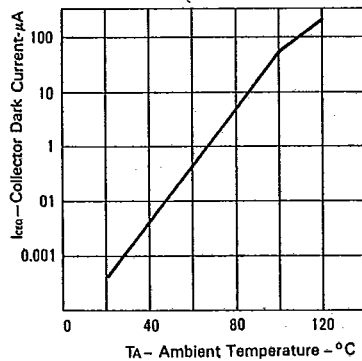


FIG. 1 COLLECTOR DARK CURRENT
VS AMBIENT TEMPERATURE

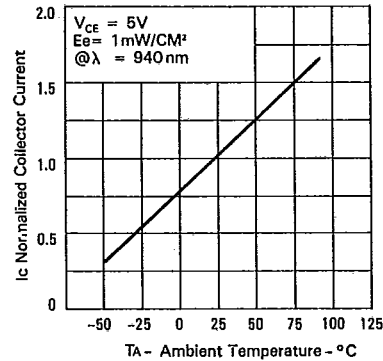


FIG. 2 NORMALIZED COLLECTOR CURRENT
VS AMBIENT TEMPERATURE

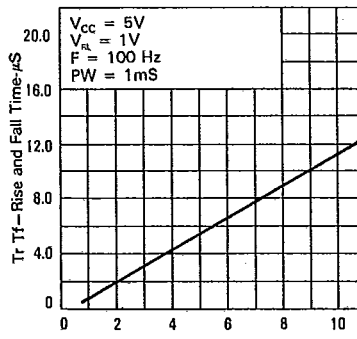


FIG. 3 RISE AND FALL TIME
VS LOAD RESISTANCE

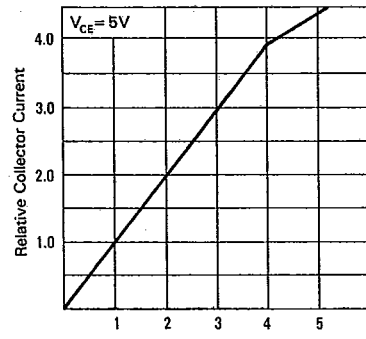


FIG. 4 RELATIVE COLLECTOR CURRENT
VS IRRADIANCE

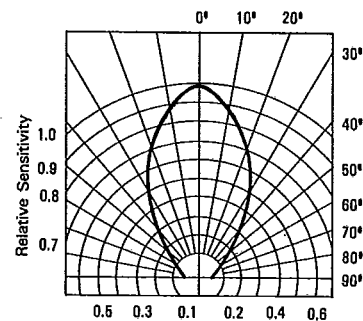


FIG. 5 SENSITIVITY DIAGRAM