



NPN PLASTIC SIDE LOOK PHOTODETECTOR

LTR-301

FEATURES

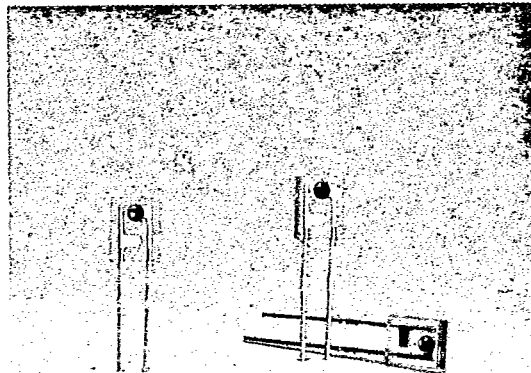
- WIDE RANGE OF COLLECTOR CURRENTS.
- LENSED FOR HIGH SENSITIVITY
- LOW COST PLASTIC PACKAGE.

DESCRIPTION

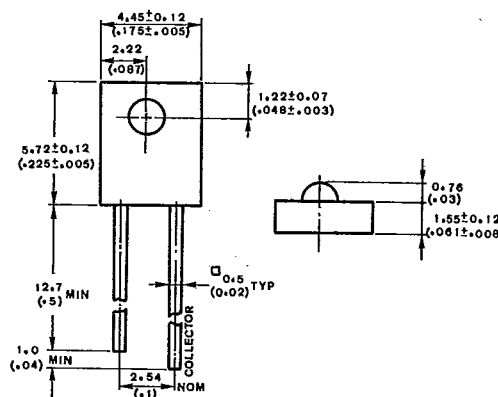
The LTR-301 consist of an NPN silicon phototransistor mounted in a lensed, clear plastic, end looking package. The lensing effect of the package allows an acceptance half angle of 20° measured from the optical axis to the half power point. This series is mechanically and spectrally matched to the LTR-301 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	$V_{CC} = 30\text{V}$ $I_c = 800\mu\text{A}$	
Fall Time	T_f		5		μS	$R_L = 1\text{k}\Omega$	
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)

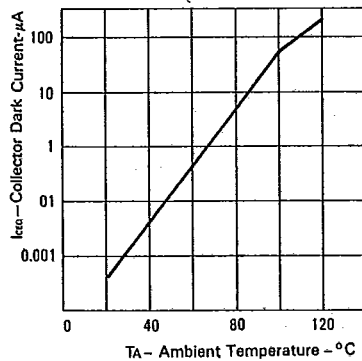


FIG. 1 COLLECTOR DARK CURRENT
VS AMBIENT TEMPERATURE

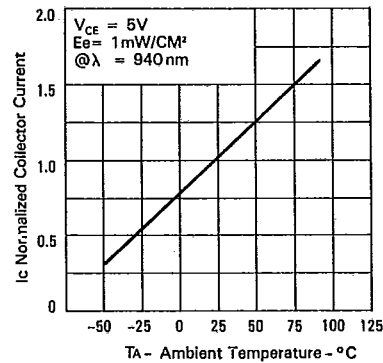


FIG. 2 NORMALIZED COLLECTOR CURRENT
VS AMBIENT TEMPERATURE

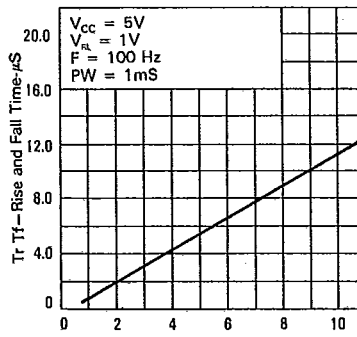


FIG. 3 RISE AND FALL TIME
VS LOAD RESISTANCE

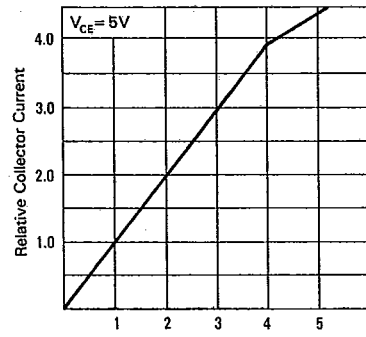


FIG. 4 RELATIVE COLLECTOR CURRENT
VS IRRADIANCE

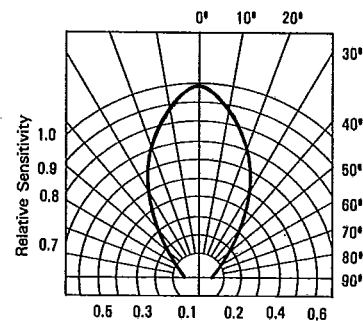


FIG. 5 SENSITIVITY DIAGRAM