



LITE-ON INC 09E D 5536367 0000741 8

BLACK PLASTIC PHOTODIODE

LTR-536AB

INFRARED PRODUCTS

T-41-53

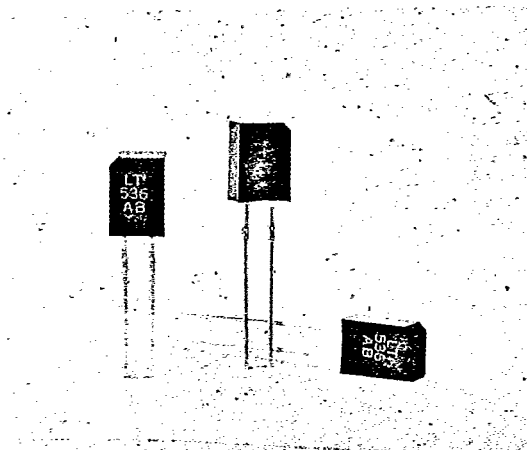
FEATURES

- HIGH PHOTO SENSITIVITY.
- SUITABLE FOR INFRARED RADIATION.
- LOW JUNCTION CAPACITANCE.
- HIGH CUT-OFF FREQUENCY.
- FAST SWITCHING TIMES.

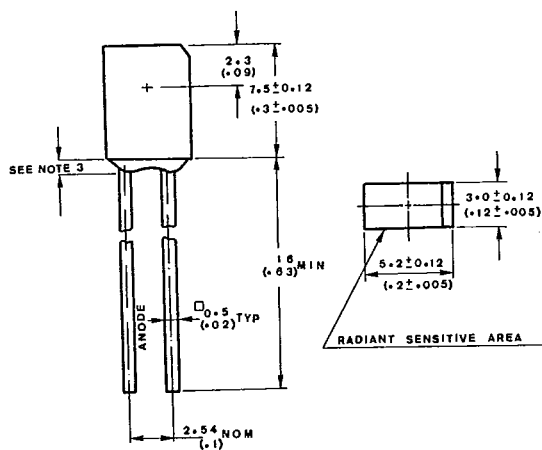
DESCRIPTION

The LTR-536AB is a silicon planar PIN photodiode which is incorporated in black plastic package that serves as a filter for infrared radiation.

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



PACKAGE DIMENSION



NOTE:

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. Specification are subject to change without notice.

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ABSOLUTE MAXIMUM RATINGS AT $T_A = 25^\circ\text{C}$

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation	150	mW
Reverse Break Down Voltage Seconds	30	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 OPTICAL CHARACTERISTICS AT $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION
Reverse Break Down Voltage	$V_{(BR)R}$	30			V	$I_R = 100\mu\text{A}$ $E_e = 0\text{mW}/\text{cm}^2$
Reverse Dark Current	$I_{D(R)}$			30	nA	$V_R = 10\text{V}$ $E_e = 0\text{mW}/\text{cm}^2$
Open Circuit Voltage	V_{oc}		350		mV	$\lambda = 940\text{nm}$ $E_e = 0.5\text{mW}/\text{cm}^2$
Rise Time	T_r		50		nsec	$V_R = 10\text{V}$ $\lambda = 940\text{nm}$ $R_L = 1\text{k}\Omega$
Fall Time	T_f		50		xsec	
Short Circuit Current	I_s	1.5	2		μA	$V_R = 5\text{V}$ $\lambda = 940\text{nm}$ $E_e = 0.05\text{mW}/\text{cm}^2$
Total Capacitance	C_T		25		P	$V_R = 3\text{V}$ $f = 1\text{MHZ}$ $E_e = 0\text{mW}/\text{cm}^2$
Wavelength of the Max Sensitivity	λ_{SMAX}		950		nm	
Spectral Sensitivity	S	30	50		$\frac{\mu\text{A cm}^2}{\text{mw}}$	$V_R = 5\text{V}$
Noise Equivalent Power	NEP		4.4×10^{-14}		$\frac{\text{W}}{\sqrt{\text{HZ}}}$	$V_R = 10\text{V}$
Detection Limit	*D		6.3×10^{12}		$\frac{\text{cm} \sqrt{\text{HZ}}}{\text{W}}$	

*The illuminance indicated refers to unfiltered radiation of a tungsten filament LAMP at a color temperature of 2856 $^\circ\text{K}$.

(T-41-53)

INFRARED PRODUCTS

TYPICAL ELECTRICAL/OPTICAL/CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

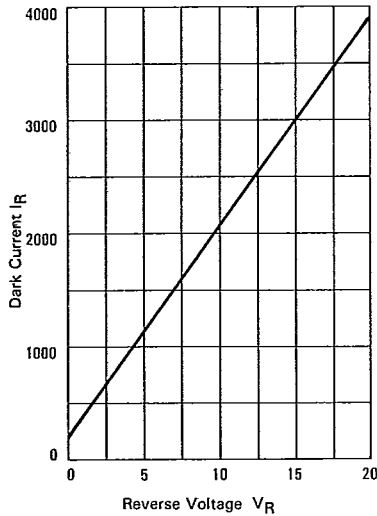


FIG. 1 DARK CURRENT VS. REVERSE VOLTAGE
 $T_{AMB} = 25^\circ\text{C}$, $E_e = 0$

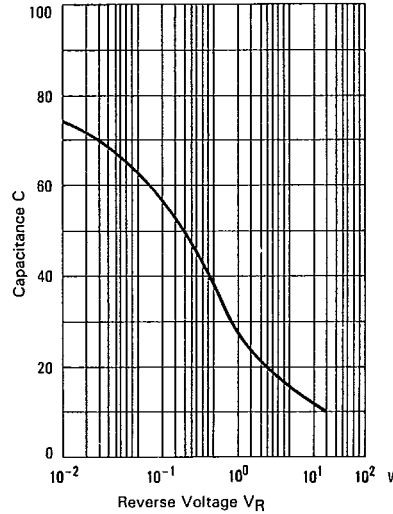


FIG. 2 CAPACITANCE VS. REVERSE VOLTAGE
 $F = 1\text{ MHz}$; $E_e = 0$

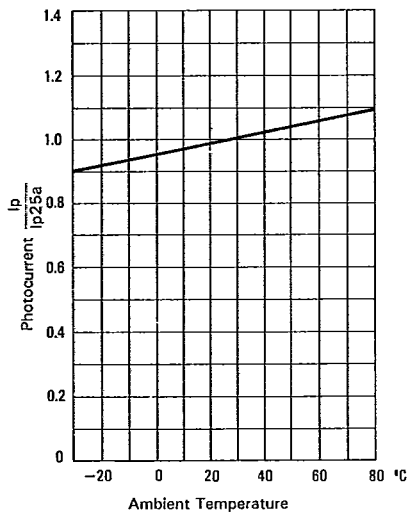


FIG. 3 PHOTOCURRENT VS. AMBIENT TEMPERATURE

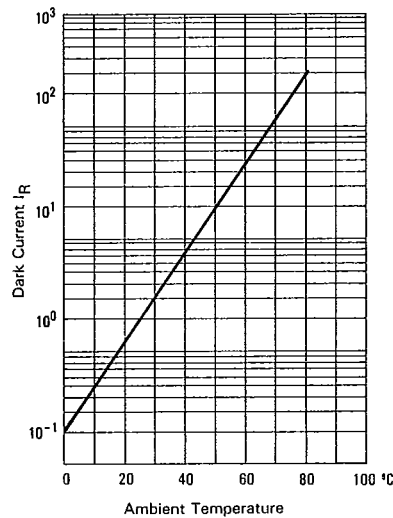


FIG. 4 DARK CURRENT VS. AMBIENT TEMPERATURE
 $V_A = 10$, $E_e = 0$

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TYPICAL ELECTRICAL/OPTICAL/CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

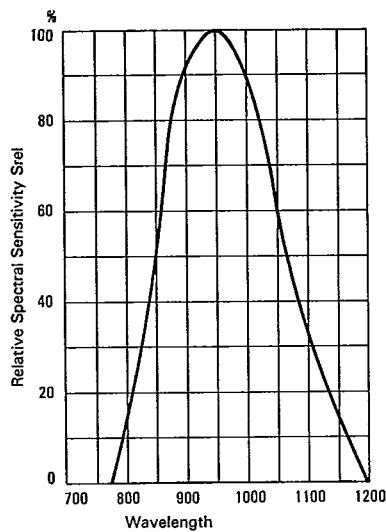


FIG. 5 RELATIVE SPECTRAL SENSITIVITY VS WAVELENGTH

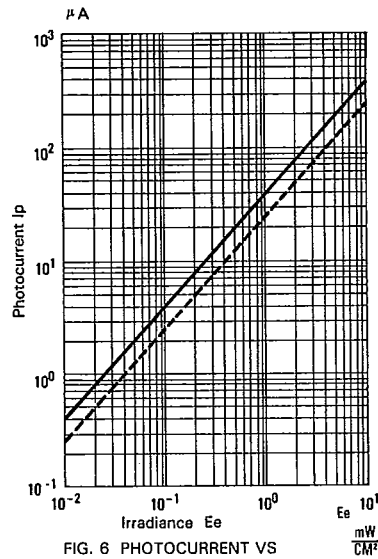


FIG. 6 PHOTOCURRENT VS IRRADIANCE = 950 NM

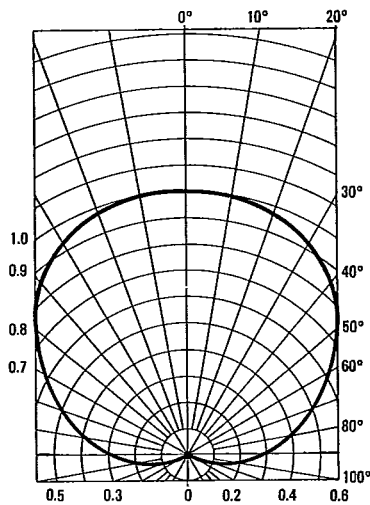


FIG. 7 SENSITIVITY DIAGRAM

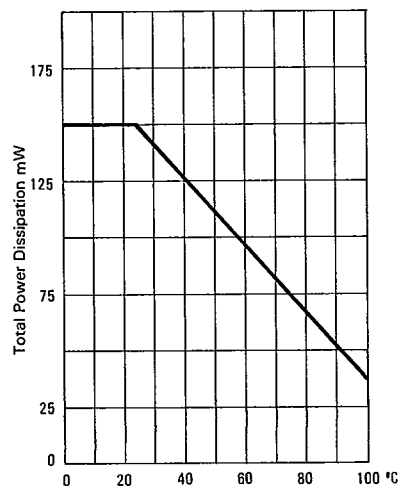


FIG. 8 TOTAL POWER DISSIPATION VS AMBIENT TEMPERATURE