



BLACK PLASTIC PHOTODIODE

LTR-546AD

T-41-51

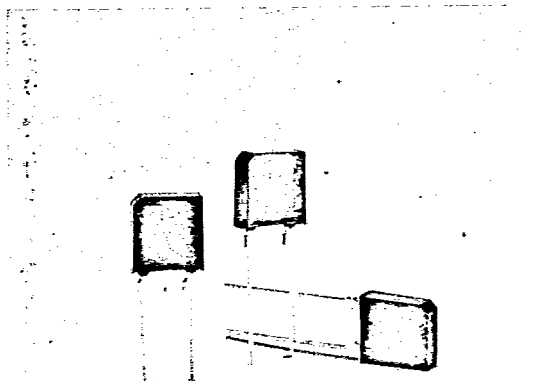
FEATURES

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

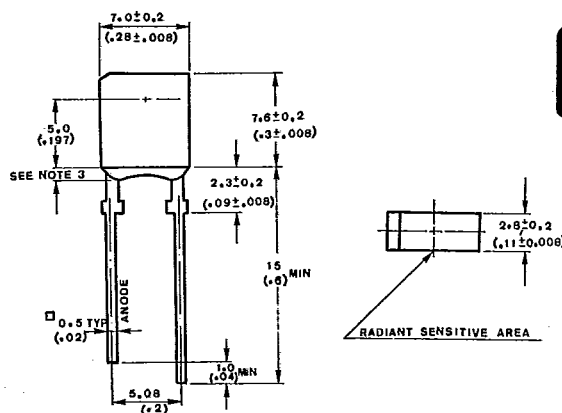
DESCRIPTION

The LTR-546AD is a special dark plastic package that cut the visible light and suitable for the detectors of infrared application.

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



PACKAGE DIMENSION



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	150	mW
Reverse Break Down Voltage	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 (0.063in) 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
Reverse Break Down Voltage	V_{BR}	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		nsec	
Light Current	I_s	1.7	2		μA	$V_R = 5\text{V}$ $\lambda = 940\text{nm}$ $E_e = 0.08\text{mW}/\text{cm}^2$
Total Capacitance	C_T		25		pF	$V_R = 3\text{V}$ $f = 1\text{MHz}$ $E_e = 0\text{mW}/\text{cm}^2$
Wavelength of the Max Sensitivity	$\lambda_{S\text{MAX}}$		950		nm	
Spectral Sensitivity	S	30	50		$\frac{\mu\text{A cm}^2}{\text{mw}}$	$V_R = 5\text{V}$
Nose 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 luminance indicated refers to unfiltered radiation of a tungsten filament LAMP at a color temperature of 2856°K .

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

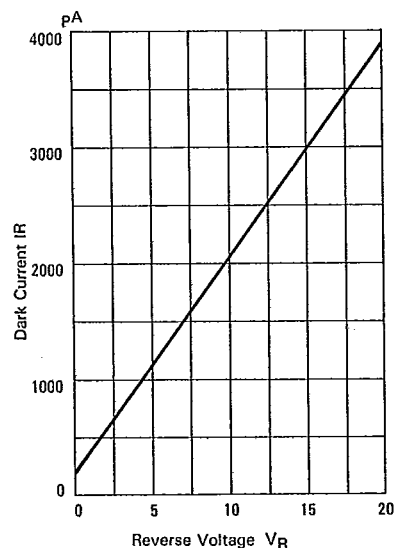


FIG. 1 DARK CURRENT VS. REVERSE VOLTAGE
TAMB = 25°C, $E_e = 0$ mW/cm²

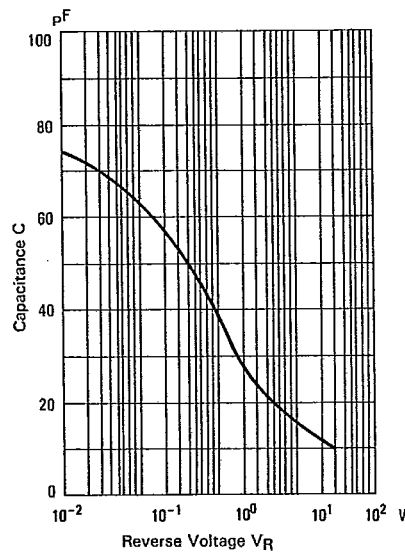


FIG. 2 CAPACITANCE VS. REVERSE VOLTAGE
 $F = 1$ MHz; $E_e = 0$ mW/cm²

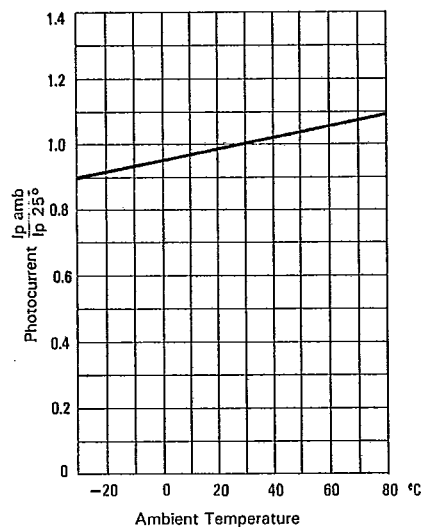


FIG. 3 PHOTOCURRENT VS. AMBIENT TEMPERATURE

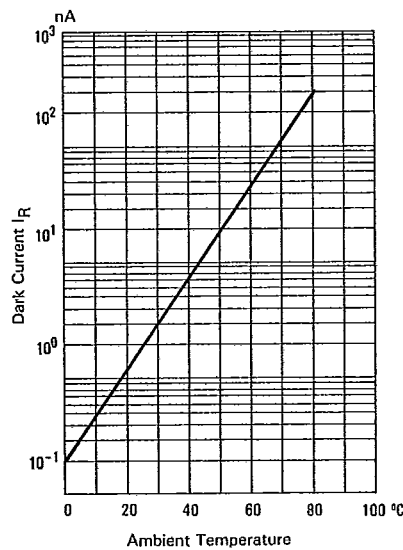


FIG. 4 DARK CURRENT VS. AMBIENT TEMPERATURE
 $V_R = 10$ V, $E_e = 0$ mW/cm²



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TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

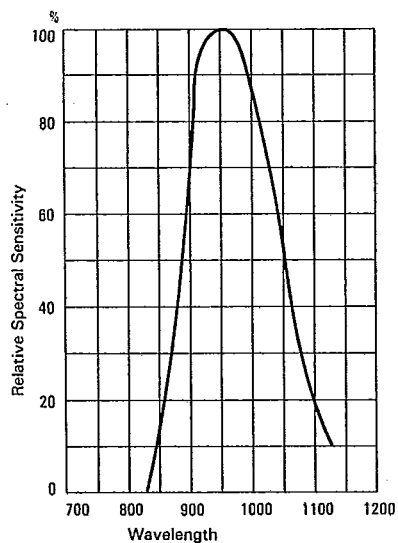


FIG. 5 RELATIVE SPECTRAL SENSITIVITY VS WAVELENGTH

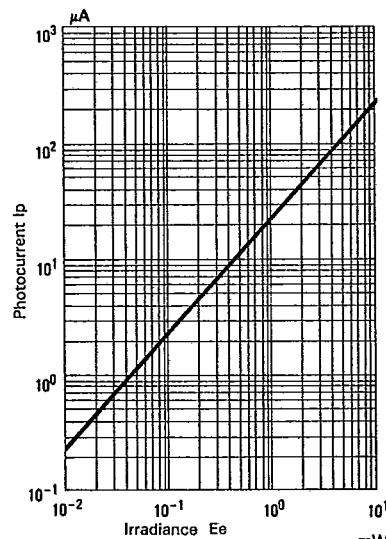


FIG. 6 PHOTOCURRENT VS IRRADIANCE = 950 nm

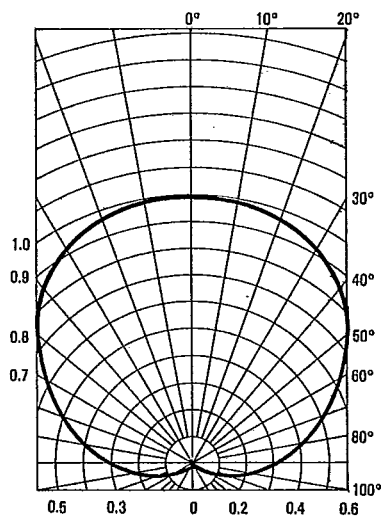


FIG. 7 SENSITIVITY DIAGRAM

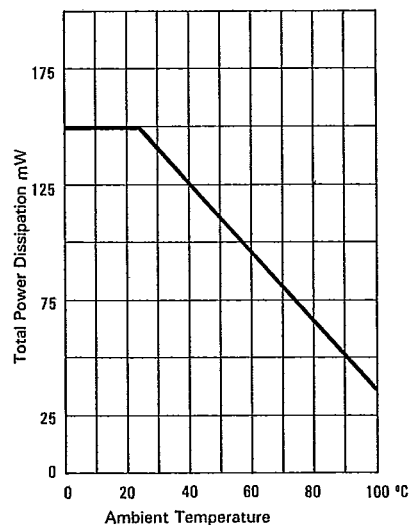


FIG. 8 TOTAL POWER DISSIPATION VS AMBIENT TEMPERATURE

PACKAGING

T-90-20

Reel Packaging (Axial Lead Units)

DEVICE TYPE	COMPONENT SPACE (MM) "A"	TAPE SPACE (MM) "B"	REEL DIA (MM) "D"	QUANTITY (EA)		CARTON	
				REEL	CARTON	SIZE (MM)	WEIGHT (KG)
DO-41 DO-41L	5±0.5	52.4±1.5	326~336	5000	20K	355 x 355 x 355	10.5
DO-201AD	10±0.5	52.4±1.5	326~336	1200	4.8K	355 x 355 x 355	9.0
P6(Aleg)	10±0.5	52.4±1.5	326~336	700	2.8K	355 x 355 x 355	8.8

The C dimension of Fig. 3 is between 3.17mm and 635mm greater than the length of the component involved.

FIG. 1

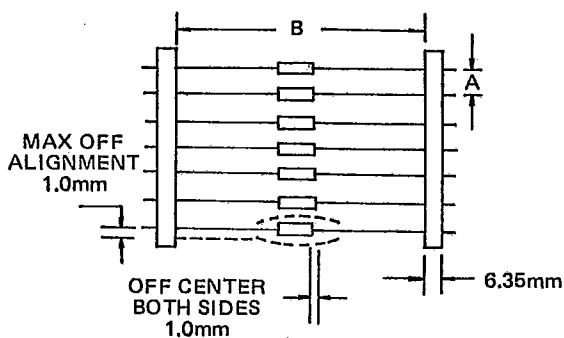


FIG. 2

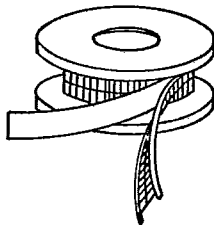
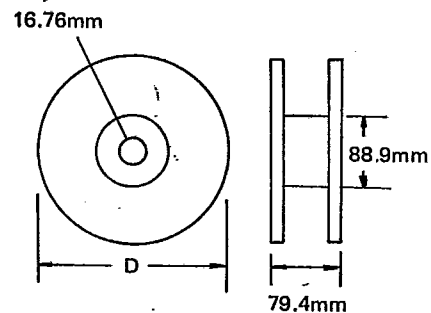


FIG. 3

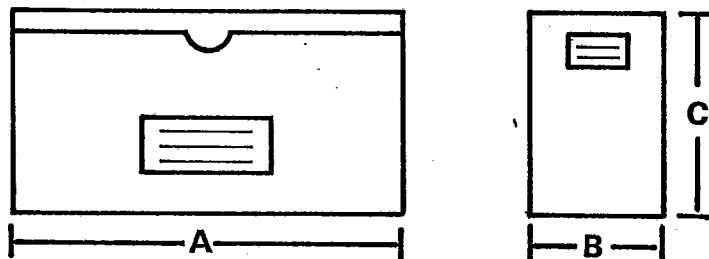


Bulk Packaging (Axial Lead Devices and Bridge Rectifiers)

DEVICE TYPE	PACKAGING SIZE (MM)		QUANTITY (EA)		APPROX GROSS WEIGHT (KG)	
	BOX	CARTON	BOX	CARTON	BOX	CARTON
DO-41 DO-41L	196 x 84 x 20	450 x 210 x 250	1000	50K	0.38	20
DO-201AD	305 x 93 x 59	355 x 355 x 355	1000	20K	1.35	28
P6(Aleg)	305 x 93 x 59	355 x 355 x 355	500	10K	1.2	24.5
PBM	357 x 125 x 60	530 x 360 x 340	1000	20K	1.5	32.3
PBDF	495 x 155 x 145	500 x 325 x 305	5000	20K	5.1	21.5
PBP	357 x 125 x 60	530 x 360 x 340	500	10K	1.5	31.5
PBL	375 x 220 x 155	470 x 385 x 455	1000	5K	5.7	30.5
PBPC-6	357 x 125 x 60	560 x 360 x 340	250	5K	1.1	22
PBPC-8	357 x 125 x 60	560 x 360 x 340	250	5K	1.7	35
KBPC	375 x 220 x 365	470 x 390 x 385	500	1K	15.1	31.5
KBPC-W	375 x 220 x 365	470 x 390 x 385	500	1K	14.5	30.0

AMMO BOX PACKAGING

BOX SIZE



Unit:m. m.

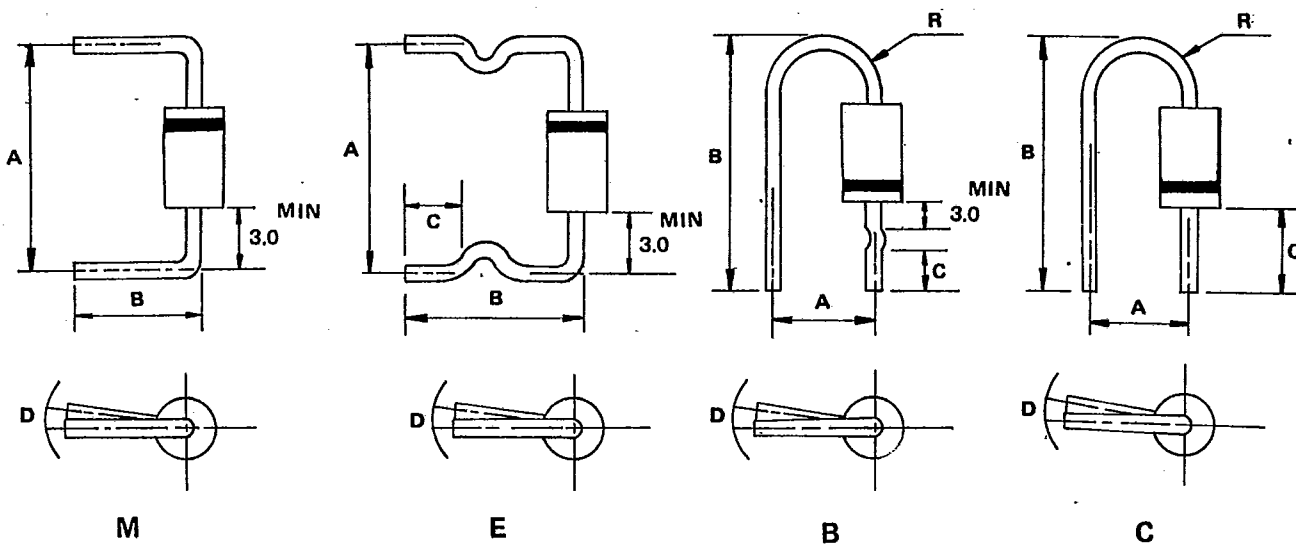
Packaging	Products Outline	Dimension *A*	Dimension *B*	Dimension *C*	Q'ty per BOX
26MM Horizontal Ammo Pack	DO-41 DO-41L(0.6mm Lead)	255	50	95	3K
					3K
52MM Horizontal Ammo Pack	DO-41and DO-41L DO 201AD	250	75	92	3K
					0.8K

CARTON SIZE

Unit:m. m.

Packaging	Products Outline	length	Width	High	Q'ty Per Carton
26MM Horizontal Ammo Pack	DO-41 DO-41L(0.6mm Lead)	330	310	268	42K
					48K
52MM Horizontal Ammo Pack	DO-41and DO-41L DO 201AD	355	355	340	12K
					12K

PREFORMED LEAD DRAWING



Case type	Preformed type	A (mm)		B (mm)		C (mm)		D (mm)		R (mm)	
		range	tolerance	range	tolerance	range	tolerance	range	tolerance	range	tolerance
D041	M	9.0-20.0	1.0	8.0-22.0	±0.5	—	—	1.5	max	—	—
	E	11.0-20.0	±1.0	11.0-16.0	±1.0	4.0-5.0	±0.5	1.5	max	—	—
	B	7.5	±0.5	19.0-22.0	±0.5	7.5	±0.5	1.5	max	2.5-4.0	Typ
	C	4.5	±0.8	18.0-19.0	±0.5	9.0	±0.5	1.5	max	2.5-4.0	Typ
D0201AD	M	15.0-20.0	±1.0	8.0-22.0	±1.0	—	—	2.0	max	—	—
	E	15.0-20.0	±1.0	10.0-22.0	±1.0	3.0-15.0	±0.5	2.0	max	—	—
P6(Aleg)	M	15.0-20.0	±1.0	8.0-22.0	±1.0	—	—	2.0	max	—	—