



NPN T-1³/₄ STANDARD 5φ PHOTODETECTOR

LTR-3208/3208E

T-41-45

FEATURES

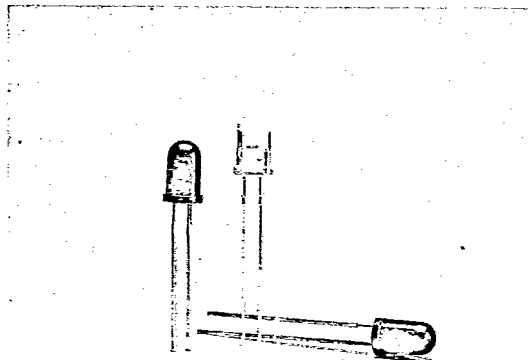
- WIDE RANGE OF COLLECTOR CURRENTS.
- LENSED FOR HIGH SENSITIVITY
- LOW COST PLASTIC PACKAGE.

DESCRIPTION

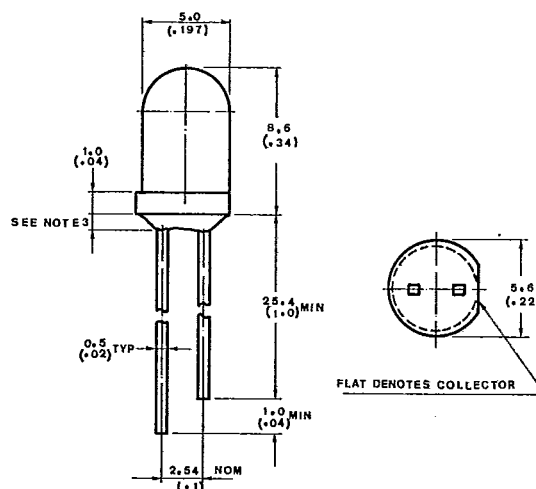
The LTR-3208 series consist of an NPN silicon phototransistor mounted in a lensed, clear plastic, end looking package. The lensing effect of the package allows an acceptance half angle of 10° measured from the optical axis to the half power point. This series is mechanically and spectrally matched to the LTE-4208 series of infrared emitting diodes.

The LTR-3208E is a special dark plastic package that cut the visible light and suitable for the detectors of infrared applications.

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



PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ ($\pm 0.010''$) unless otherwise noted.
3. Protruded resin under flange is 1.5mm ($\pm 0.059''$) 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	

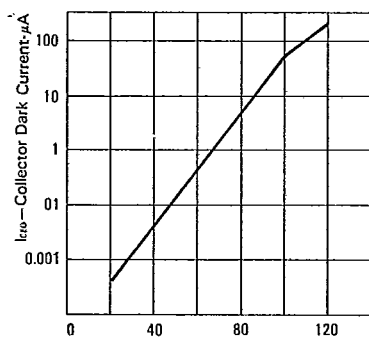
ELECTRICAL CHARACTERISTICS AT $T = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NO. LTR.	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	$I_C = 0.5\text{mA}$ $E_e = 0.5\text{mW/cm}^2$	
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	$I_{(ON)}$	3208	1	4		mA	$V_{CE} = 5\text{V}$ $E_e = 1\text{mW/cm}^2$	
		3208E	1	2		mA	$\lambda = 940\text{nm}$	

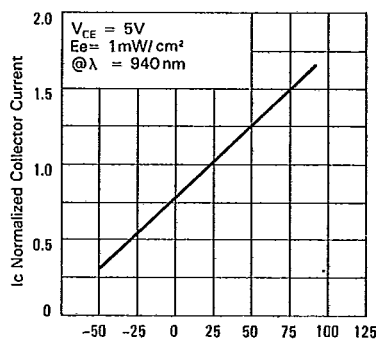


TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

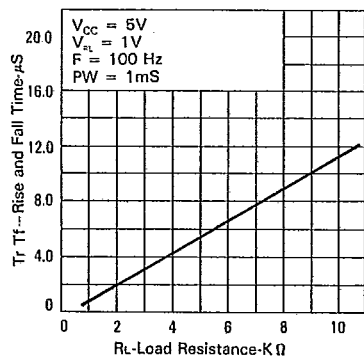
(25°C Ambient Temperature Unless Otherwise Noted)



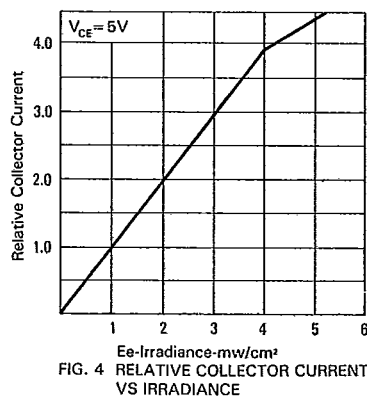
TA - Ambient Temperature - °C
FIG. 1 COLLECTOR DARK CURRENT
VS AMBIENT TEMPERATURE



TA - Ambient Temperature - °C
FIG. 2 NORMALIZED COLLECTOR CURRENT
VS AMBIENT TEMPERATURE



RL - Load Resistance - KΩ
FIG. 3 RISE AND FALL TIME
VS LOAD RESISTANCE



Ee - Irradiance - mW/cm²
FIG. 4 RELATIVE COLLECTOR CURRENT
VS IRRADIANCE

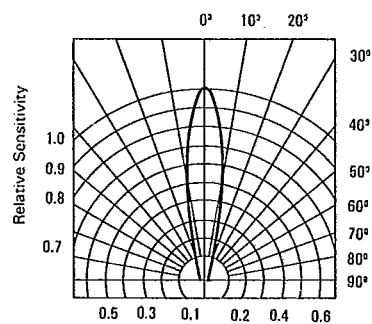


FIG. 5 SENSITIVITY DIAGRAM

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

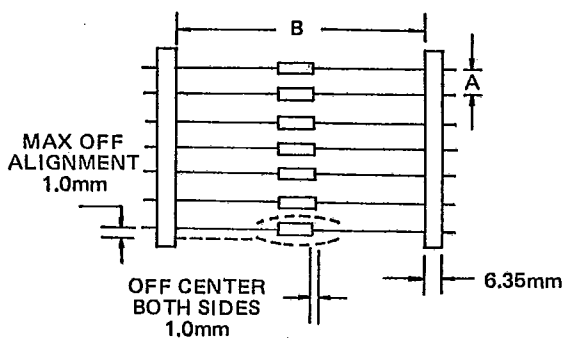


FIG. 2

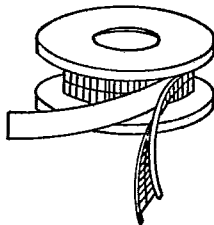
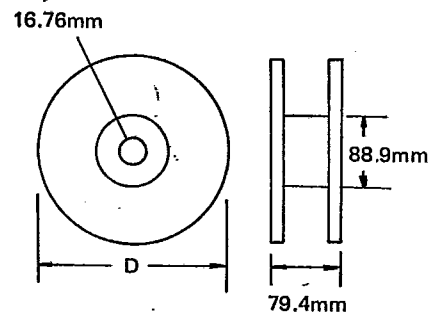


FIG. 3

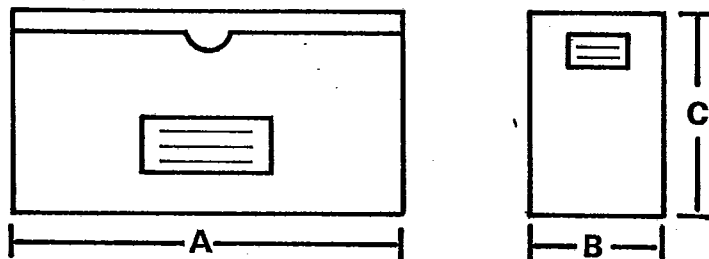


Bulk Packaging (Axial Lead Devices and Bridge Rectifiers)

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.

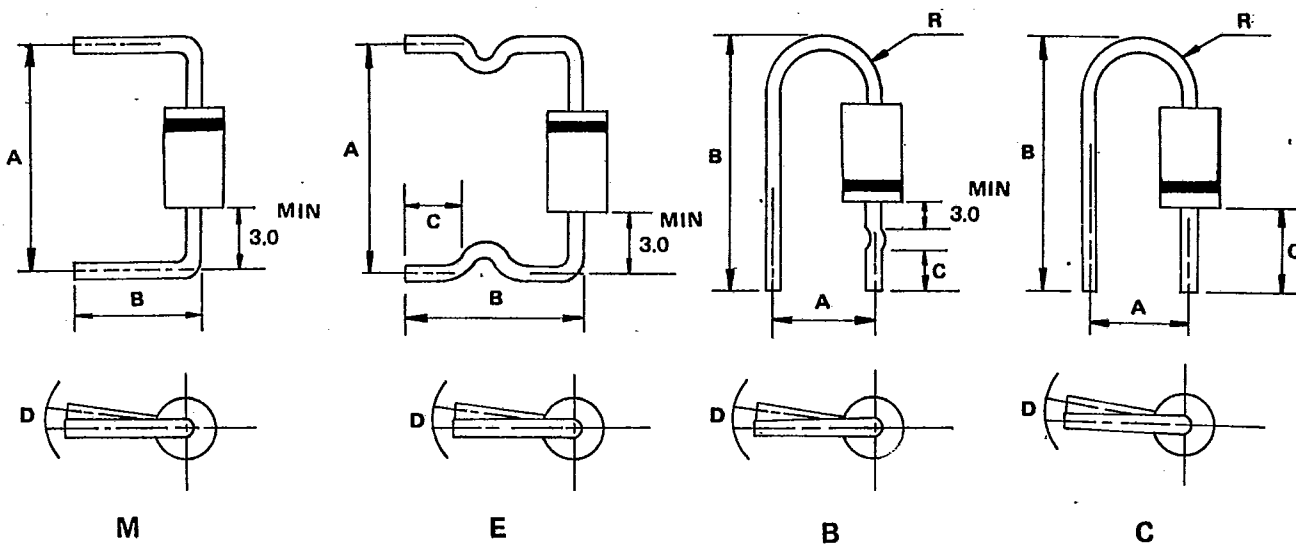
Packaging	Products Outline	Dimension *A*	Dimension *B*	Dimension *C*	Q'ty per BOX
26MM Horizontal Ammo Pack	DO-41 DO-41L(0.6mm Lead)	255	50	95	3K
					3K
52MM Horizontal Ammo Pack	DO-41and DO-41L DO 201AD	250	75	92	3K
					0.8K

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	—	—