

T-41-63

CLR5101

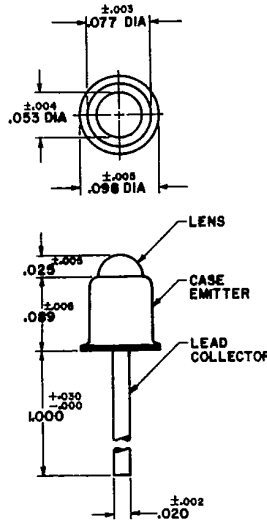
Silicon NPN Planar Epitaxial Darlington Phototransistors

GENERAL DESCRIPTION: The CLR5101 is an extremely sensitive photodarlington in a hermetically sealed package. The small size allows high density mounting on printing circuit boards. This device is available with a second lead welded to the case: CLR5101-2

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures
 Storage Temperature -65°C to +180°C
 Operating Junction Temperature +150°C

Maximum Power Dissipation
 Total Dissipation
 at 25°C Ambient Temperature $P_T = 50mW$ derate 0.5mw/°C
 at 100°C Ambient Temperature $P_T = 12.5mW$



Maximum Voltages	CLR5101
V_{CE0} Collector to Emitter Voltage	40 volts
V_{EC0} Emitter to Collector Voltage	5 volts

Maximum Current: Note 3
 I_C Collector Current 200ma

ELECTRICAL CHARACTERISTICS (25°C Free Air unless otherwise designated.)

Symbol	Characteristics	Test Conditions	CLR5101		Unit
			Min.	Max.	
$I_L (I_{CE0})$	Light Current	$V_{CE} = 5v, H = 0.02mW/cm^2$, Note 1	2.0		ma
$I_L (I_{CE0})$	Light Current	$V_{CE} = 5v, H = 0.2mW/cm^2$, Note 1	20		ma
$I_D (I_{CE0})$	Dark Current	$V_{CE} = 10$ volts, $H = 0$		100	na
BV_{CE0}	Collector to Emitter Breakdown Voltage	$I_C = 100\mu a$	40		volts
BV_{CBO}	Collector to Base Breakdown Voltage	$I_C = 100\mu a$	60		volts
T_r	Light Current Rise Time (unsaturated)	$R_L = 100 \Omega, I_C = 10ma$		150 Typical	μsec
t_f	Light Current Fall Time (unsaturated)	$V_{CC} = 10$ volts Note 2		150 Typical	μsec
$V_{CE(SAT)}$	Collector to Emitter Saturation Voltage	$I_C = 0.4ma$ $H = 2mW/cm^2$		1.2 Typical	volts

Note 1: The light source is a frosted tungsten incandescent lamp at 2854°K.
Note 2: The light source is a gallium arsenide LED pulsed with a rise and fall time of $< 0.3 \mu sec$.
Note 3: Pulsed conditions: 300 μsec ., 2% duty cycle.

T-41-63

Typical Electrical Characteristics

