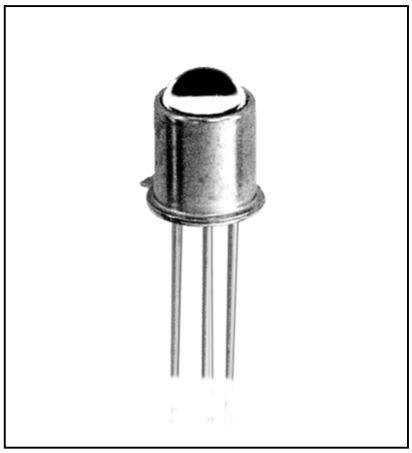
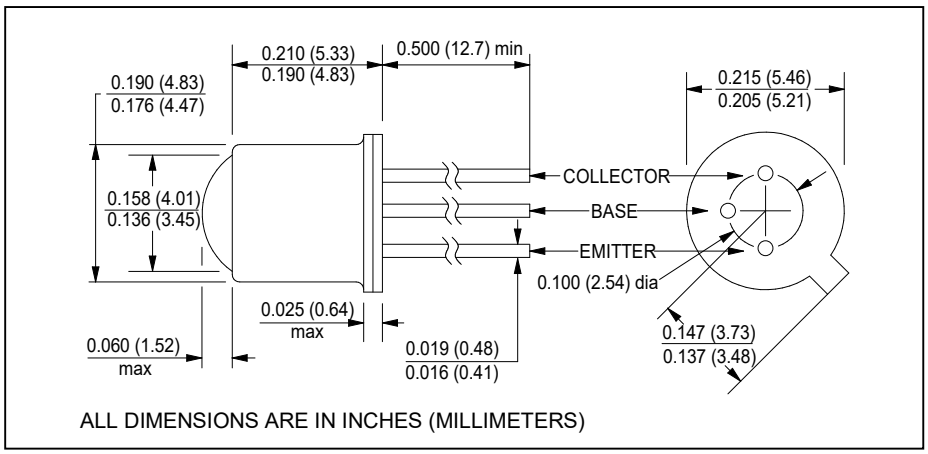
CLR131 and CLR132
NPN Silicon Photodarlingtons

CLAIREX® SEMICONDUCTOR

13-1300C





Features

- high sensitivity
- ± 20° acceptance angle
- spherical lensed TO-18
- base is bonded
- usable throughout visible and near infrared spectrum

description

The CLR131 and CLR132 are NPN silicon photodarlingtons mounted in TO-18 packages. Photodarlingtons allow high sensitivity at low irradiance levels. A double convex glass-to-metal sealed spherical lens provides a narrow acceptance angle for excellent on-axis coupling. These devices are mechanically and spectrally matched to the CLE335 series IREDs.

absolute maximum ratings (T_A = 25°C unless otherwise stated)

storage temperature	-65°C to +150°C
operating temperature	-65°C to +125°C
lead soldering temperature[1]	260°C
collector-emitter voltage	30 V
continuous collector current	50 mA
continuous power dissipation[2]	250 mW

notes:

1. 0.06" (1.5 mm) from the header for 5 seconds maximum
2. Derate linearly 2.0 mW/°C from 25°C free air temperature to T_A = +125°C.
3. Radiation source is an AlGaAs IRED with peak emission wavelength of 850nm providing the specified radiant intensity. Intensity level is not necessarily uniform over the detector area of the unit under test.
4. The radiation source is a pulsed AlGaAs IRED with rise and fall times of ≤0.3μs.

electrical characteristics (T_A = 25°C unless otherwise noted)

symbol	parameter		min	typ	max	units	test conditions
I_L	Light current[3]	CLR131 CLR132	2.0 4.0	- -	8.0 -	mA mA	V_{CE} = 5 V, E_e = 60 μW/cm²
I_{CEO}	Collector dark current		-	-	100	nA	V_{CE} = 10 V, E_e = 0
$V_{(BR)CEO}$	Collector-emitter breakdown		30	-	-	V	I_C = 100 μA, E_e = 0
$V_{(BR)EBO}$	Emitter-base breakdown		10	-	-	V	I_E = 100 μA, E_e = 0
$V_{CE(sat)}$	Collector-emitter saturation voltage		-	-	1.1	V	I_C = 0.4 mA, E_e = 60 μW/cm²
t_r	Output time[4]		-	100	-	μs	V_{CC} = 5 V, R_L = 100 Ω.
t_f	Output fall time[4]		-	150	-	μs	V_{CC} = 5 V, R_L = 100 Ω.
θ_{HP}	Total angle at half sensitivity points		-	40	-	deg.	

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