

CLT4140 CLT4150 CLT4160

Silicon NPN Planar Epitaxial Phototransistors

GENERAL DESCRIPTION — The CLT4000 series are phototransistors molded in a clear epoxy package. Lead frame construction allows direct soldering into circuit board or socket mounting. All 3 types have guaranteed light sensitivities, low dark currents and high voltage ratings. This package design includes a molded lens over the transistor to provide controlled angular response. All units are spectrally compatible with the Clairex CLED400 I.R. Emitters.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature - 40° to + 100°C

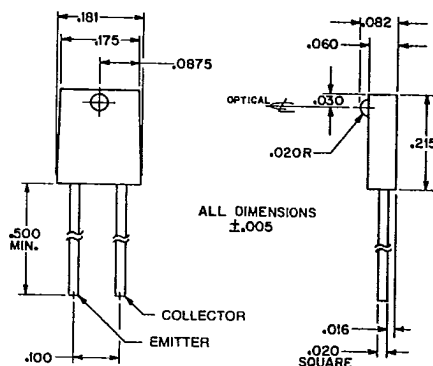
Operating Junction Temperature + 150°C

Maximum Power Dissipation

Total Dissipation

at 25°C Ambient Temperature $P_T = 75\text{mW}$

derate 0.9mW/°C



Maximum Voltages	CLT4140	CLT4150	CLT4160
V_{CEO} Collector to Emitter Voltage	40 volts	40 volts	40 volts
V_{ECO} Emitter to Collector Voltage	5 volts	5 volts	5 volts

Maximum Current: Note 3

I_C Collector Current = 200ma max.

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

Symbol	Characteristics	Test Conditions	CLT4140 Min. Max.	CLT4150 Min. Max.	CLT4160 Min. Max.	Unit
$I_L (I_{CEO})$	Light Current	$V_{CE}=5\text{v}$, $H=5\text{mW/cm}^2$, Note 1	0.5	1.0	2.0	ma
$I_L (I_{CEO})$	Light Current	$V_{CE}=5\text{v}$, $H=20\text{mW/cm}^2$, Note 1	5.0 Typical	8.0 Typical	12 Typical	ma
$I_D (I_{CEO})$	Dark Current	$V_{CE}=10\text{ volts}$, $H=0$	50	50	50	na
BV_{CEO}	Collector to Emitter Breakdown Voltage	$I_C=0.1\text{ma}$	40	40	40	volts
BV_{ECO}	Emitter to Collector Breakdown Voltage	$I_{EC}=0.1\text{ma}$	5.0	5.0	5.0	volts
t_r	Light Current Rise Time (unsaturated)	$R_L=100\ \Omega$, $I_C=0.5\text{ma}$, $V_{CC}=5.0\text{ volts}$, Note 2	3 Typical	3 Typical	3 Typical	μsec
t_f	Light Current Fall Time (unsaturated)		3 Typical	3 Typical	3 Typical	μsec
$V_{CE(SAT)}$	Collector to Emitter Saturation Voltage	$I_C=.25\text{ma}$, $H=20\text{mW/cm}^2$	.3	.3	.3	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 $<0.3\ \mu\text{sec}$.

Note 3: Pulsed conditions: 300 μsec , 2% duty cycle.

FASCO INDS/ SENISYS

Typical Electrical Characteristics

