

OPTOELECTRONICS

INFRARED EMITTERS

GE TYPE	PAGE NO.	MIN. P _O @ I _F =100mA	MAX. V _F @ I _F =100mA	PEAK EMISSION WAVELENGTH TYP. n. METERS	RISE TIME TYP. n. SEC.	FALL TIME TYP. n. SEC.	MAX. P _D mW	MAX. I _F CONT. mA
LED55C	1341	5.4mW	1.7V	940	300	200	1300	100
LED55B	1341	3.5mW	1.7V	940	300	200	1300	100
LED56	1341	1.5mW	1.7V	940	300	200	1300	100
LED55CF	1341	5.4mW	1.7V	940	300	200	1300	100
LED55BF	1341	3.5mW	1.7V	940	300	200	1300	100
LED56F	1341	1.5mW	1.7V	940	300	200	1300	100



DETECTORS

PHOTO TRANSISTORS

GE TYPE	PAGE NO.	SENSITIVITY (ma/mw/cm ²)		BV _{CEO} (V)	BV _{BCO} (V)	I _D (nA) MAX.	SWITCHING TYP.		TYP. V _{CE(SAT)}
		MIN.	MAX.				t _r (μSEC.)	t _f (μSEC.)	
L14G1	1337	.6	—	45	45	100	5	5	.4
L14G2	1337	.3	—	45	45	100	5	5	.4
L14G3	1337	1.2	—	45	45	100	5	5	.4
L14H1	1339	.05	—	60	60	100	5	5	.4
L14H2	1339	.2	—	30	30	100	5	5	.4
L14H3	1339	.2	—	60	60	100	5	5	.4
L14H4	1339	.05	—	30	30	100	5	5	.4



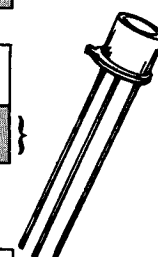
PHOTO DARLINGTONS

2N5777	508	.25	—	25	25	100	75	50	.8
2N5778	508	.25	—	40	40	100	75	50	.8
2N5779	508	1.0	—	25	25	100	75	50	.8
2N5780	508	1.0	—	40	40	100	75	50	.8
L14F1	1335	15.0	—	25	25	100	75	50	.8
L14F2	1335	5.0	—	25	25	100	75	50	.8



PHOTO SWITCHES

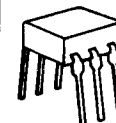
GE TYPE	PAGE NO.	IRRADIANCE TO TRIGGER (mw/cm ²)	BLOCKING VOLTAGE	I _D (nA) MAX.	V _r (V)
L8	1329	—	10	25-200	1.4
L9	1329	—	4.2	25-200	1.4



OPTO COUPLERS

PHOTO TRANSISTOR OUTPUT

GE TYPE	PAGE NO.	ISOLATION VOLTAGE (V _{pk}) MIN.	CURRENT TRANSFER RATIO MIN.	I _D (nA) MAX.	BV _{CEO} (VOLTS) MIN.	TYPICAL (μSEC.)		V _{CE(SAT)} MAX.
						T _R	T _F	
H11A1	1275	2500	50%	50	30	2	2	.4
H11A2	1275	1500	20%	50	30	2	2	.4
H11A3	1277	2500	20%	50	30	2	2	.4
H11A4	1277	1500	10%	50	30	2	2	.4
H11A5	1279	1500	30%	100	30	2	2	.4
H11A520	1285	5656	20%	50	30	2	2	.4
H11A550	1285	5656	50%	50	30	2	2	.4
H11A5100	1285	5656	100%	50	30	2	2	.4
H15A1	1313	4000 V _{RMS}	20%	100	30	3	3	.4
H15A2	1313	4000 V _{RMS}	10%	100	30	3	3	.4
4N25	531	2500	20%	50	30	3	3	.5
4N25A	531	1775 V _{RMS}	20%	50	30	3	3	.5
4N26	531	1500	20%	50	30	3	3	.5
4N27	531	1500	10%	50	30	3	3	.5
4N28	531	500	10%	50	30	3	3	.5
4N35	525	2500 V _{RMS}	100%	50	30	5	5	.3
4N36	525	1750 V _{RMS}	100%	50	30	5	5	.3
4N37	525	1050 V _{RMS}	100%	50	30	5	5	.3
H74A1	1327	1500		100	15			





Light Detector Planar Silicon Photo Transistor

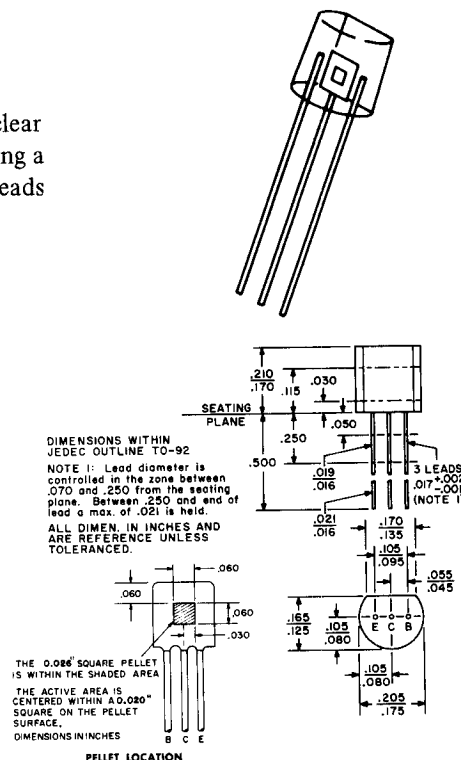
NPN L14H1-4

The General Electric Light Sensor Series are NPN Planar Silicon Phototransistors in a clear epoxy TO-92 package. They can be used in industrial and commercial applications requiring a low cost, general purpose, photosensitive device. Generally only the collector and emitter leads are used; a base lead is provided, however, to control sensitivity and gain of the device.

absolute maximum ratings: (25°C) (unless otherwise specified)

	L14H2, H4	L14H1, H3	
Voltages — Dark Characteristics			
Collector to Emitter Voltage	V_{CEO} 30V	60V	volts
Collector to Base Voltage	V_{CBO} 30V	60V	volts
Emitter to Base Voltage	V_{EBO} 5		volts
Currents			
Light Current	I_L	100	mA
Dissipations			
Power Dissipation ($T_A = 25^\circ\text{C}$)*	P_T	200	mW
Temperatures			
Junction Temperature	T_J	100	°C
Storage Temperature	T_{STG}	-65 to 100	°C

*Derate 2.67 mW/°C above 25°C ambient

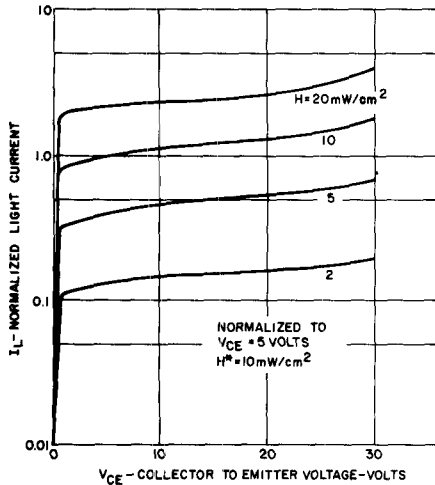


electrical characteristics: (25°C) (unless otherwise specified)

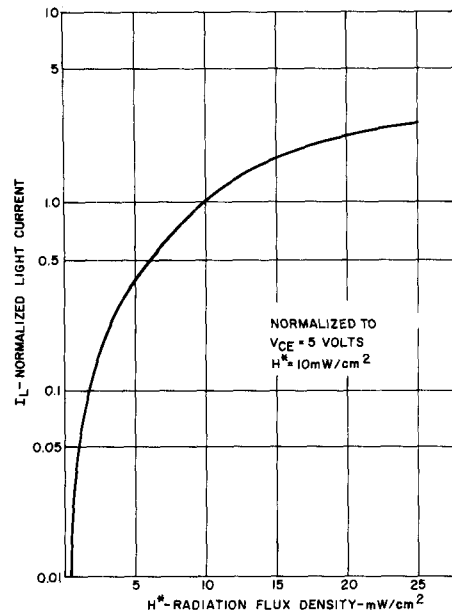
STATIC CHARACTERISTICS		L14H1 Min. Max.	L14H2 Min. Max.	L14H3 Min. Max.	L14H4 Min. Max.	Units
Light Current ($V_{CE} = 5V$, $H_f = 10\text{mW/cm}^2$)	I_L	.5	2.0	2.0	.5	mA
Dark Current ($V_{CE} = 10V$, $H \approx 0$, $I_B = 0$)	I_D	100	100	100	100	nA
Emitter-Base Breakdown Voltage ($I_E = 100\mu\text{A}$, $I_C = 0$, $H \approx 0$)	$V_{(BR)EBO}$	5	5	5	5	volts
Collector-Base Breakdown Voltage ($I_C = 100\mu\text{A}$, $I_E = 0$, $H \approx 0$)	$V_{(BR)CBO}$	60	30	60	30	volts
Collector-Emitter Breakdown Voltage ($I_C = 10\text{mA}$, $H \approx 0$) (Pulse Width $\leq 300\mu\text{sec}$, Duty cycle $\leq 1\%$)	$V_{(BR)CEO}$	60	30	60	30	volts
Saturation Voltage ($I_C = 10\text{mA}$, $I_B = 1\text{mA}$)	$V_{CE(SAT)}$	0.4	0.4	0.4	0.4	volts
Switching Speeds ($V_{CE} = 30V$, $I_L = 800\mu\text{A}$, $R_L = 1\text{k}\Omega$)**						
On Time ($t_d + t_r$)	t_{on}	8	8	8	8	μsec
Off Time ($t_s + t_f$)	t_{off}	7	7	7	7	μsec

H_f = Radiation Flux Density. Radiation source is an unfiltered tungsten filament bulb at 2870°K color temperature.

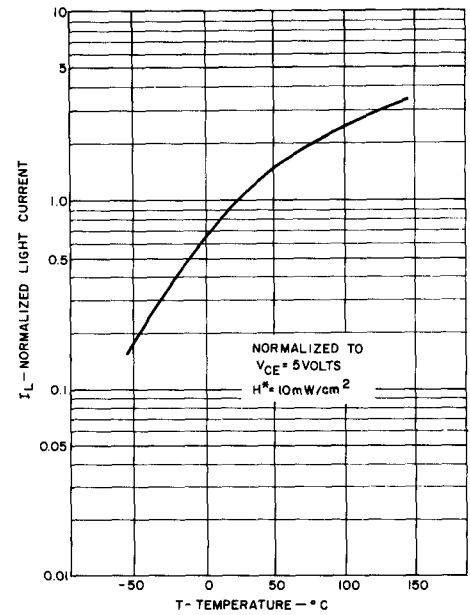
**Radiant source is a gallium arsenide light emitting diode. 1339



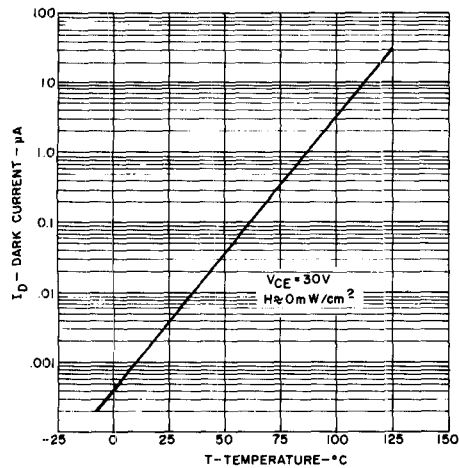
1. NORMALIZED LIGHT CURRENT VS. COLLECTOR TO EMITTER VOLTAGE



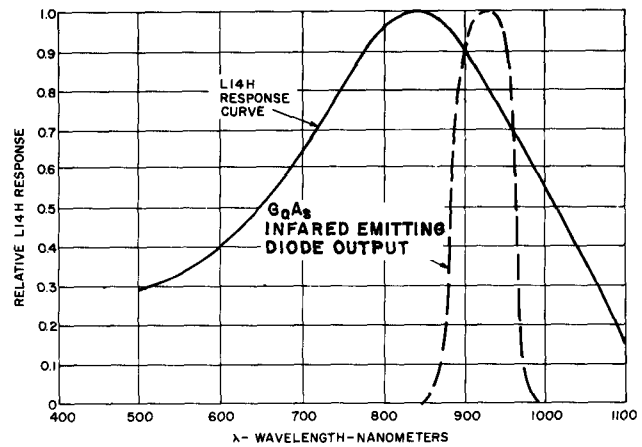
2. NORMALIZED LIGHT CURRENT VS. RADIATION



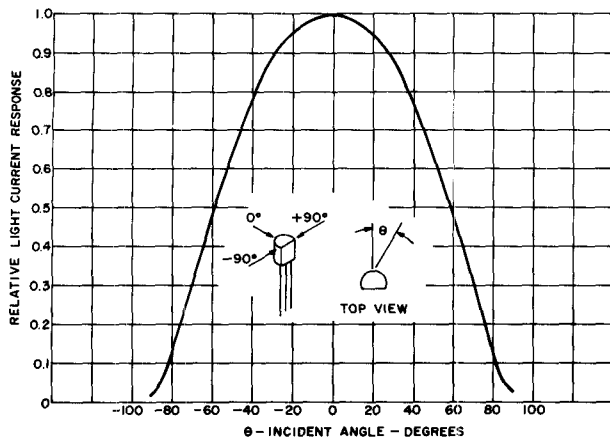
3. NORMALIZED LIGHT CURRENT VS. TEMPERATURE



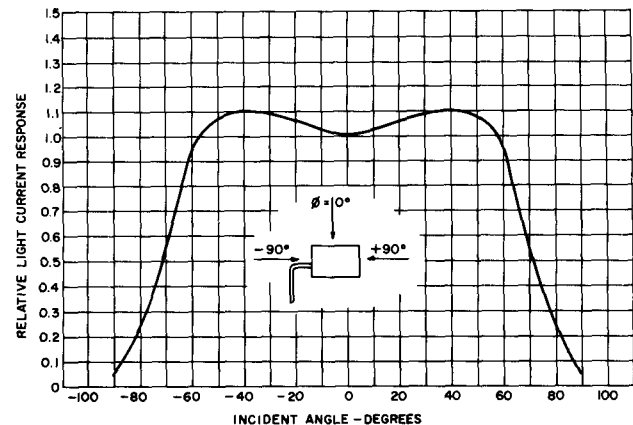
4. DARK CURRENT VS. TEMPERATURE



5. SPECTRAL CURVES



6. RELATIVE RESPONSE VS. INCIDENT ANGLE



7. RELATIVE RESPONSE VS. INCIDENT ANGLE