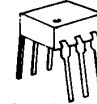


35853-OP



Photon Coupled Isolator H11B1-H11B2-H11B3



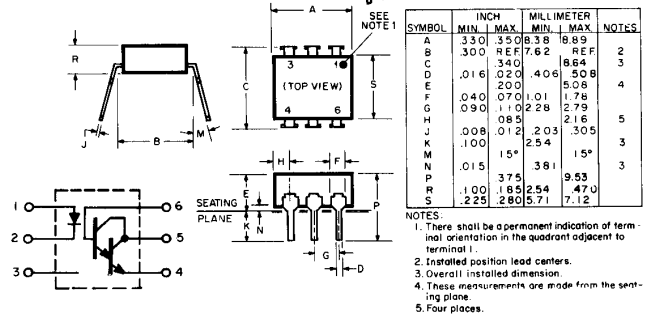
Ga As Infrared Emitting Diode & NPN Silicon Photo-Darlington Amplifier

The General Electric H11B1, H11B2 and H11B3 are gallium arsenide, infrared emitting diodes coupled with a silicon photo-darlington amplifier in a dual in-line package.

absolute maximum ratings: (25°C)

INFRARED EMITTING DIODE		
Power Dissipation	*100	milliwatts
Forward Current (Continuous)	60	milliamps
Forward Current (Peak)	3	ampere
(Pulse width 1 μsec 300 P Ps)		
Reverse Voltage	3	volts
*Derate 1.33mW/°C above 25°C ambient.		

PHOTO-DARLINGTON		
Power Dissipation	**150	milliwatts
V _{CEO}	25	volts
V _{CBO}	30	volts
V _{ECO}	7	volts
Collector Current (Continuous)	100	milliamps
**Derate 2.0mW/°C above 25°C ambient.		



TOTAL DEVICE	
Storage Temperature	-55 to 150°C
Operating Temperature	-55 to 100°C
Lead Soldering Time (at 260°C)	10 seconds
Surge Isolation Voltage (Input to Output)	
H11B1	2500V _(peak) 1770V _(RMS)
H11B2, B3	1500V _(peak) 1060V _(RMS)
Steady-State Isolation Voltage (Input to Output)	
H11B1	1500V _(peak) 1060V _(RMS)
H11B2, B3	950V _(peak) 660V _(RMS)

individual electrical characteristics (25°C)

INFRARED EMITTING DIODE	TYP.	MAX.	UNITS
Forward Voltage			
H11B1, B2 (I _F = 10mA)	1.1	1.5	volts
H11B3 (I _F = 50mA)	1.1	1.5	volts
Reverse Current (V _R = 3V)	—	10	microamps
Capacitance (V = 0, f = 1MHz)	50	—	picofarads

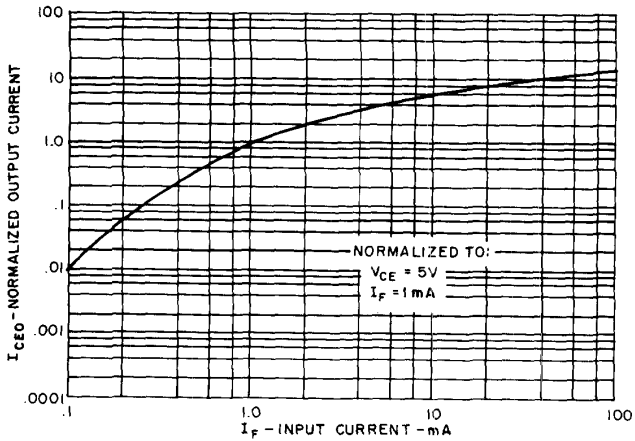
PHOTO-TRANSISTOR	MIN.	TYP.	MAX.	UNITS
Breakdown Voltage – V _{(BR)CEO} (I _C = 10mA, I _F = 0)	25	—	—	volts
Breakdown Voltage – V _{(BR)CBO} (I _C = 100μA, I _F = 0)	30	—	—	volts
Breakdown Voltage – V _{(BR)ECO} (I _E = 100μA, I _F = 0)	7	—	—	volts
Collector Dark Current – I _{CEO} (V _{CE} = 10V, I _F = 0)	—	5	100	nanoamps
Capacitance (V _{CE} = 10V, f = 1MHz)	—	6	—	picofarads

coupled electrical characteristics (25°C)

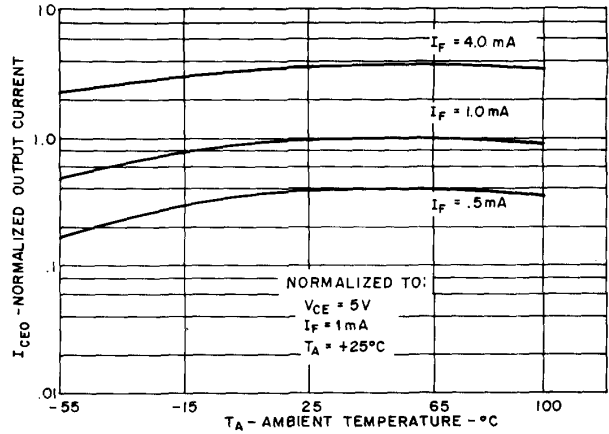
		MIN.	TYP.	MAX.	UNITS
DC Current Transfer Ratio (I _F = 1mA, V _{CE} = 5V)	H11B1	500	—	—	%
	H11B2	200	—	—	%
	H11B3	100	—	—	%
Saturation Voltage – Collector to Emitter (I _F = 1mA, I _C = 1mA)		—	0.7	1.0	volts
Isolation Resistance (Input to Output Voltage = 500V _{DC})		100	—	—	gigaohms
Input to Output Capacitance (Input to Output Voltage = 0, f = 1MHz)		—	—	2	picofarads
Switching Speeds: (V _{CE} = 10V, I _C = 10mA, R _L = 100Ω)	On-Time	—	125	—	microseconds
	Off-Time	—	100	—	microseconds

H11B1, H11B2, H11B3

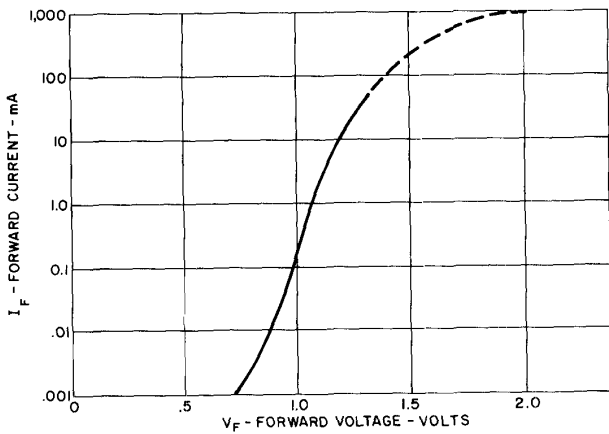
TYPICAL CHARACTERISTICS



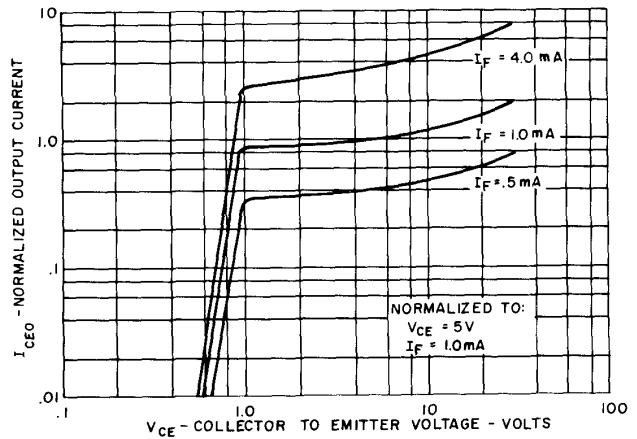
OUTPUT CURRENT VS INPUT CURRENT



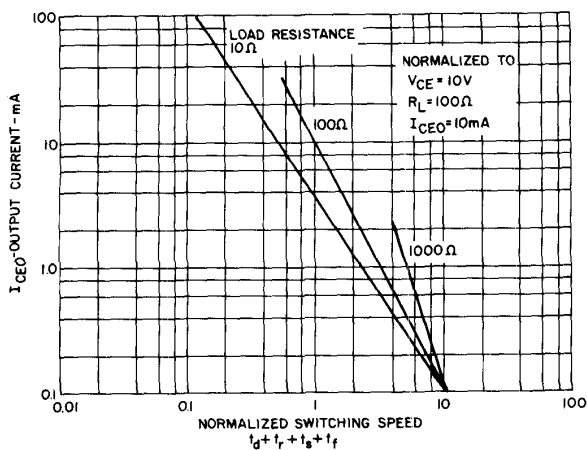
OUTPUT CURRENT VS TEMPERATURE



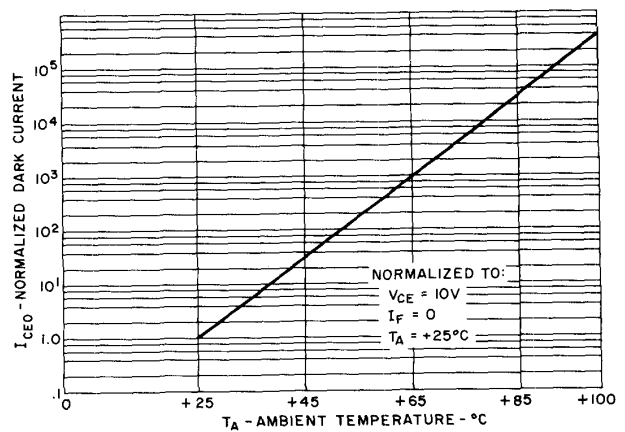
INPUT CHARACTERISTICS



OUTPUT CHARACTERISTICS



SWITCHING SPEED VS OUTPUT CURRENT



NORMALIZED DARK CURRENT VS TEMPERATURE