

H11D1-H11D4

Optoisolator

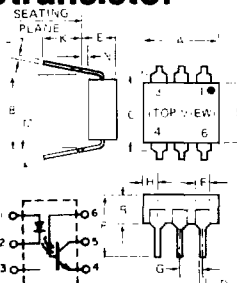
GaAs Infrared Emitting Diode and NPN Silicon High Voltage Phototransistor

The H11D1-H11D4 are gallium arsenide, infrared emitting diodes coupled with silicon high voltage phototransistors in a dual in-line package. These devices are also available in surface-mount packaging.

absolute maximum ratings: (25°C)

INFRARED EMITTING DIODE			
Power Dissipation	*100	milliwatts	
Forward Current (Continuous)	60	milliamps	
Forward Current (Peak) (Pulse width 1μsec 300 P Ps)	3	ampere	
Reverse Voltage	6	volts	
*Derate 1.33mW/°C above 25°C ambient.			

PHOTO-TRANSISTOR			
	H11D1-D2	H11D3-D4	
Power Dissipation	**300	**300	milliwatts
V _{CE}	300	200	volts
V _{CE}	300	200	volts
V _{CE}	7	7	volts
Collector Current (Continuous)	100	100	milliamps
**Derate 4.0mW/°C above 25°C ambient.			



SYMBOL	MILLIMETER		INCHES		NOTES
	MIN	MAX	MIN	MAX	
A	5.32	5.59	213	250	1
B	7.62	8.13	300	REF	2
C	4.06	5.08	160	200	3
D	1.01	1.28	0.04	0.10	
E	2.25	2.54	0.09	0.10	
F	2.03	3.05	0.08	0.12	
G	2.54	1.01	0.10	1.01	
H	3.81	9.53	0.15	3.75	
I	2.92	3.43	0.115	0.135	
J	6.10	6.86	240	270	

- NOTES
 1. INSTALLED POSITION ON LEAD CENTERS
 2. OVERALL INSTALLED DIMENSION
 3. THESE MEASUREMENTS ARE MADE FROM THE SEATING PLANE
 4. FOUR PLACES

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).			
H11D1	565V _(peak)	4000V _(RMS)	
H11D2, D3, D4	3535V _(peak)	2500V _(RMS)	
Steady-State Isolation Voltage (Input to Output).			
H11D1	5300V _(peak)	3750V _(RMS)	
H11D2, D3, D4	3180V _(peak)	2250V _(RMS)	

individual electrical characteristics (25°C)

INFRARED EMITTING DIODE	TYP.	MAX.	UNITS
Forward Voltage (I _F = 10mA)	1.1	1.5	volts
Reverse Current (V _R = 6V)	—	10	microamps
Capacitance (V = 0, f = 1MHz)	50	—	picofarads

PHOTO-TRANSISTOR	MIN.	MAX.	UNITS
Breakdown Voltage — V _{(BR)CE} (I _C = 1 mA; I _F = 0, R _{BE} = 1 meg)	D1,2 300 D3,4 200	—	volts
Breakdown Voltage — V _{(BR)CB} (I _C = 100μA; I _F = 0)	D1,2 300 D3,4 200	—	volts
Breakdown Voltage — V _{(BR)EB} (I _E = 100μA; I _F = 0)	7	—	volts
Collector Dark Current — I _{CE} R _{BE} = 1 meg. (V _{CE} = 200V; I _F = 0; T _A = 25°C)	D1,2 — D1,2 — D3,4 — D3,4 —	100 250 100 250	nanoamps microamps nanoamps microamps

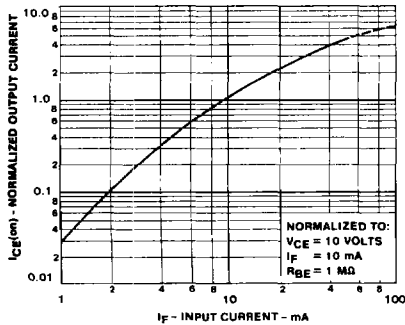
coupled electrical characteristics (25°C)

	MIN.	TYP.	MAX.	UNITS
DC Current Transfer Ratio (I _F = 10mA, V _{CE} = 10V, R _{BE} = 1 meg)	20	—	—	%
Saturation Voltage — Collector to Emitter (I _F = 10mA, I _C = 0.5mA, R _{BE} = 1 meg)	10	—	—	%
Isolation Resistance (Input to Output Voltage = 500V _{DC})	—	0.1	0.4	volts
Input to Output Capacitance (Input to Output Voltage = 0, f = 1MHz)	100	—	—	gigaohms
Switching Speeds: Turn-On Time — (V _{CE} = 10V, I _{CE} = 2mA, R _L = 100Ω)	—	—	2	picofarads
Turn-Off Time — (V _{CB} = 10V, I _{CE} = 2mA, R _L = 100Ω)	—	5	—	microseconds
	—	5	—	microseconds

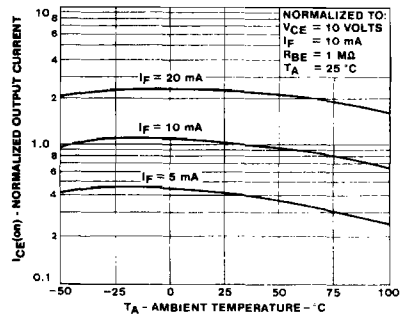
Covered under U.L. component recognition program, reference file E51868
 VDE Approved to 0883: 6.80 0110b Certificate # 35025

H11D1-H11D4

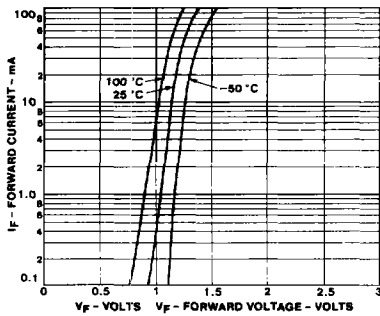
TYPICAL CHARACTERISTICS



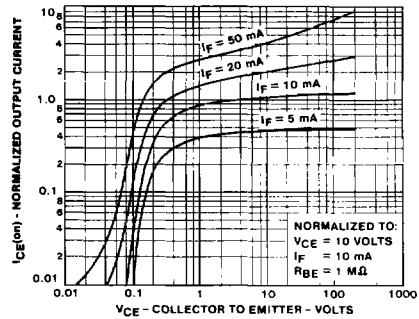
1. OUTPUT CURRENT VS INPUT CURRENT



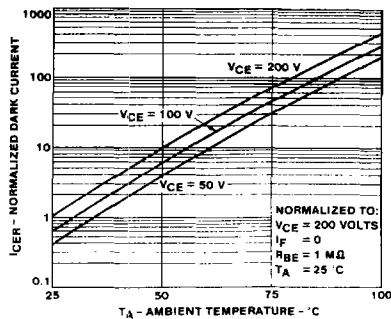
2. OUTPUT CURRENT VS. TEMPERATURE



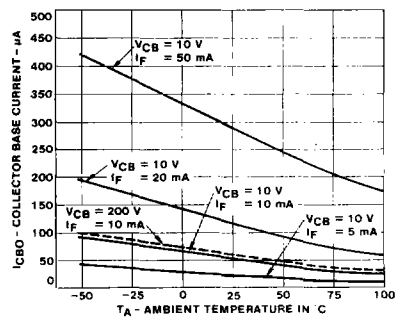
3. INPUT CHARACTERISTICS



4. OUTPUT CHARACTERISTICS



5. NORMALIZED DARK CURRENT VS. TEMPERATURE



6. COLLECTOR BASE CURRENT VS. TEMPERATURE