

Photon Coupled Isolator GEPS2001

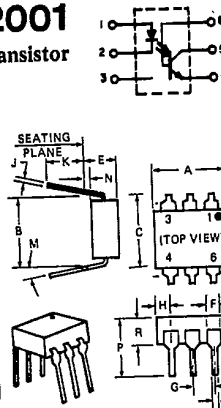
Ga As Infrared Emitting Diode & NPN Silicon Photo-Transistor

The GE Solid State GEPS2001 is a gallium arsenide, infrared emitting diode coupled with a silicon phototransistor in a dual-in-line package. This device is 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	5	volts	
*Derate 1.33mW/°C above 25°C ambient.			

PHOTO-TRANSISTOR			
Power Dissipation	**150	milliwatts	
V _{CEO}	30	volts	
V _{CBO}	70	volts	
V _{ECO}	7	volts	
Collector Current (Continuous)	100	milliamps	
**Derate 2.0mW/°C above 25°C ambient.			



SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	8.38	8.89	.330	.350	1
B	7.62 REF.		.300 REF.		2
C		8.64		.340	
D	.408	.508	.016	.020	3
E		5.08		.200	
F	1.01	1.78	.040	.070	
G	2.28	2.80	.090	.110	
H		2.16		.085	4
J	.203	.305	.008	.012	
K	2.64		.100		
L		15		15	
M	.381		.015		
N		9.53		.375	
P	2.92	3.43	.115	.135	
R	6.10	6.86	.240	.270	

NOTES:
1. INSTALLED POSITION 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).	2500 V _(peak) 1770 V _(RMS)

individual electrical characteristics (25°C)

INFRARED EMITTING DIODE	TYP.	MAX.	UNITS
Forward Voltage (I _F = 20mA)	1.1	1.4	volts
Reverse Current (V _R = 4V)	—	20	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)	30	—	—	volts
Breakdown Voltage — V _{(BR)CBO} (I _C = 100μA, I _F = 0)	70	—	—	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
DC Current Gain h _{FE} (V _{CE} = 5V, I _C = 4mA)	—	400	—	

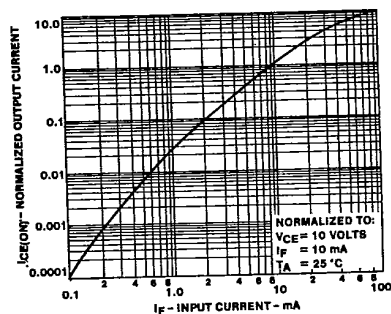
coupled electrical characteristics (25°C)

	MIN.	TYP.	MAX.	UNITS
DC Current Transfer Ratio (I _F = 20mA, V _{CE} = 5V)	30	—	—	%
Saturation Voltage — Collector to Emitter (I _F = 20mA, I _C = 2mA)	—	0.1	0.3	volts
Isolation Resistance (Input to Output Voltage = 1000V _{DC})	100	—	—	gigaohms
Input to Output Capacitance (Input to Output Voltage = 0, f = 1MHz)	—	0.8	2	picofarads
Switching Speeds: Rise/Fall Time (V _{CE} = 10V, I _{CE} = 2mA, R _L = 100Ω)	—	5	—	microseconds
Rise/Fall Time (V _{CB} = 10V, I _{CB} = 50μA, R _L = 100Ω)	—	300	—	nanoseconds

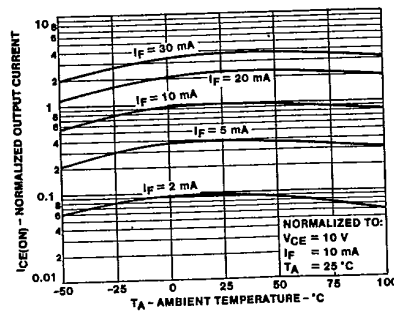
⚡ Covered under U.L. component recognition program, reference file #E51868

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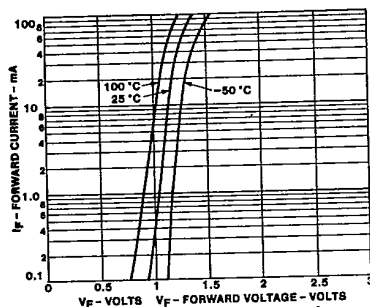
TYPICAL CHARACTERISTICS



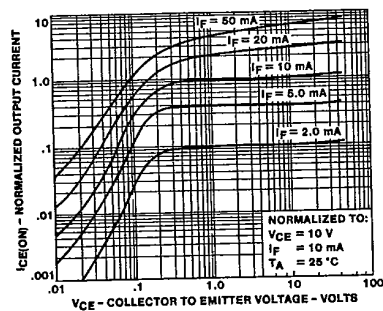
OUTPUT CURRENT VS. INPUT CURRENT



OUTPUT CURRENT VS. TEMPERATURE

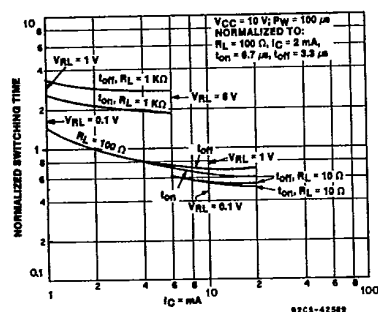
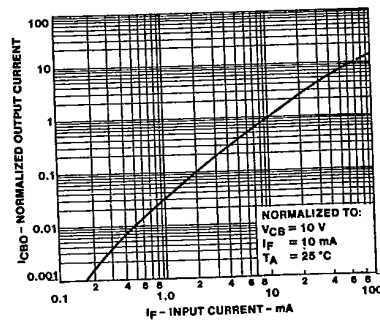


INPUT CHARACTERISTICS



OUTPUT CHARACTERISTICS

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SWITCHING SPEED VS COLLECTOR CURRENT
(NOT SATURATED)OUTPUT CURRENT (I_{CBQ}) VS INPUT CURRENT