



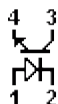
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H21A1, H21A2, H21A3 H22A1, H22A2, H22A3 PHOTON COUPLED INTERRUPTER

Circuit



Description

The H21A and H22A Series each consist of a Gallium Arsenide infrared emitting diode and a silicon phototransistor housed in a plastic package.
All electrical parameters are 100% tested. Specifications are guaranteed to a cumulative 0.65% AQL.

Applications

Printers, Tracker Ball, Mouse, Chart Recorders, Industrial Applications, Coin Machines.

Absolute Maximum Ratings (Ta=25°C)

Storage Temperature:	-55°C to +100°C
Operating Temperature:	-55°C to +100°C
Lead Soldering:	260°C for 5s, 1.6mm from case

Input Diode

Forward DC Current:	60mA
Reverse DC Voltage:	6V
Peak forward current:	3A (1μ p.w. 300pps)
Power Dissipation:	100mW
Derate Linearly:	1.33mW/°C above 25°C

Output Transistor

Collector-emitter voltage V_{CEO} :	30V
Emitter-collector voltage V_{ECO} :	6V
Collector Current I_C :	100mA
Power Dissipation:	150mW
Derate Linearly:	2.0mW/°C above 25°C

Electro-optical Characteristics (Ta=25°C)

INPUT	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
C_I	Capacitance	$V=0, f=1\text{MHz}$		30		pF
V_F	Forward voltage	$I_F=60\text{mA}$			1.7	V
I_R	Reverse current	$V_R=5\text{V}$			100	nA
$V(BR)_R$	Reverse Breakdown Voltage	$I_R=10\mu\text{A}$	6			V
$V(BR)_{CEO}$	Breakdown Voltage	$I_C=1\text{mA}$	30			V
OUTPUT						
$V(BR)_{ECO}$	Breakdown Voltage	$I_E=100\mu\text{A}$	6			V
I_{CEO}	Collector Dark Current	$V_{CE}=25\text{V}$			100	nA
C_{CE}	Capacitance	$V_{CE}=5\text{V}, f=1\text{MHz}$		3.3	5	pF

COUPLED ELECTRICAL CHARACTERISTICS (25°C; note 1)

PARAMETER	CONDITIONS	MIN			TYP	MAX	UNIT
		A1	A2	A3			
$I_{CE(ON)}$	$I_F=5\text{mA}, V_{CE}=5\text{V}$	0.15	0.3	0.6			mA
$I_{CE(ON)}$	$I_F=20\text{mA}, V_{CE}=5\text{V}$	1	2	4			mA
$I_{CE(ON)}$	$I_F=30\text{mA}, V_{CE}=5\text{V}$	1.9	3	5.5			mA
$V_{CE(SAT)}$	$I_F=(20; A1=30)\text{mA}, I_C=1.8\text{mA}$					0.4	V
t_{ON}	$V_{CC}=5\text{V}, I_F=30\text{mA}, R_L=2.5\text{kohm}$				8		μs
t_{OFF}	$V_{CC}=5\text{V}, I_F=30\text{mA}, R_L=2.5\text{kohm}$				50		μs

Notes

1. Stray irradiation can alter values of characteristics. Adequate shielding should be provided.

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