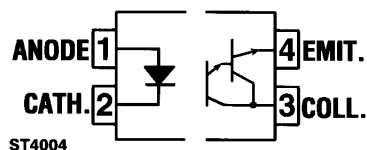
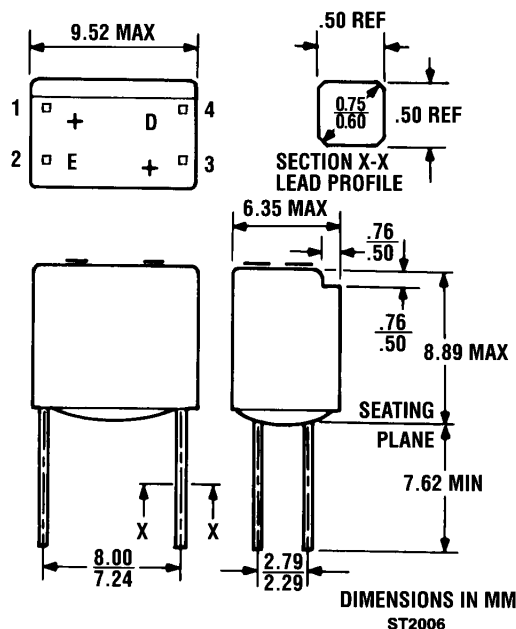


PACKAGE DIMENSIONS



Equivalent Circuit

DESCRIPTION

The H24A series consists of a gallium arsenide infrared emitting diode coupled with a silicon phototransistor. The devices are housed in a low-cost plastic package with lead spacing compatible with a dual in-line package.

FEATURES

- 4-pin configuration
- Small package size and low cost
- UL recognized-file E51868

APPLICATIONS

- Digital logic inputs
- Microprocessor inputs
- Industrial controls

ABSOLUTE MAXIMUM RATINGS

TOTAL PACKAGE

Storage temperature	−55°C to 85°C
Operating temperature	−55°C to 85°C
Lead solder temperature	260°C for 5 sec

INPUT DIODE

Power dissipation (25°C ambient)	100 mW
Derate linearly (above 25°C)	1.67 mW/°C
Continuous forward current	60 mA
Reverse voltage	4 V

DETECTOR

Power dissipation (25°C ambient)	150 mW
Derate linearly (above 25°C)	2.5 mW/°C
V _{CEO}	30 V
V _{ECO}	6 V
Continuous forward current	100 mA

ELECTRICAL CHARACTERISTICS (25°C Temperature Unless Otherwise Specified)

INDIVIDUAL COMPONENT CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
INPUT DIODE						
Forward voltage	V_F			1.7	V	$I_F = 60 \text{ mA}$
Reverse current	I_R			1	μA	$V_R = 3 \text{ V}$
Reverse breakdown voltage	$V_{(BR)R}$	4			V	$I_R = 10 \mu\text{A}$
Capacitance	C_i		30		pF	$V = 0, f = 1 \text{ MHz}$
OUTPUT DETECTOR						
Breakdown voltage Collector to emitter	BV_{CEO}	30			V	$I_C = 1 \text{ mA}, I_F = 0$
Breakdown voltage Emitter to Collector	BV_{ECO}	7			V	$I_C = 100 \mu\text{A}, I_F = 0$
Collector dark current	I_{CEO}		5	100	nA	$V_{CE} = 10 \text{ V}, I_F = 0$
Capacitance	C_{CE}		3.3		pF	$V_{CE} = 5 \text{ V}, f = 1 \text{ MHz}$

TRANSFER CHARACTERISTICS

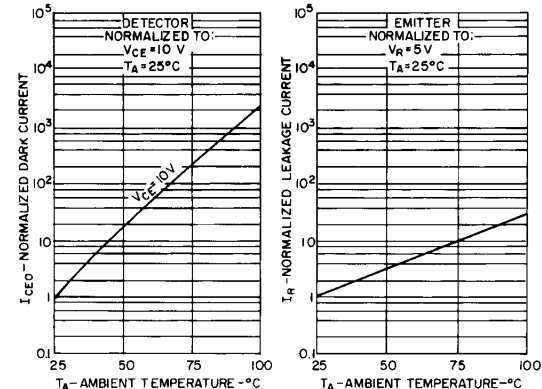
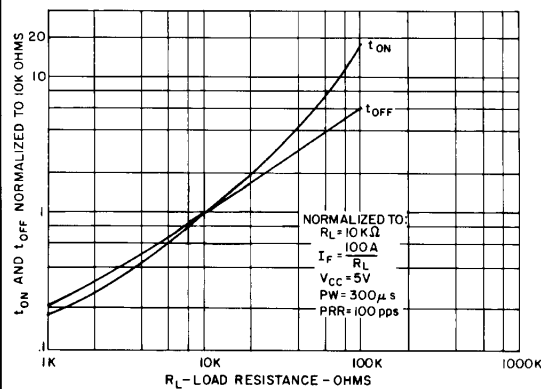
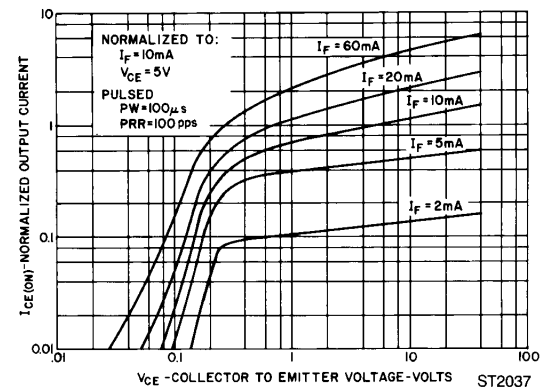
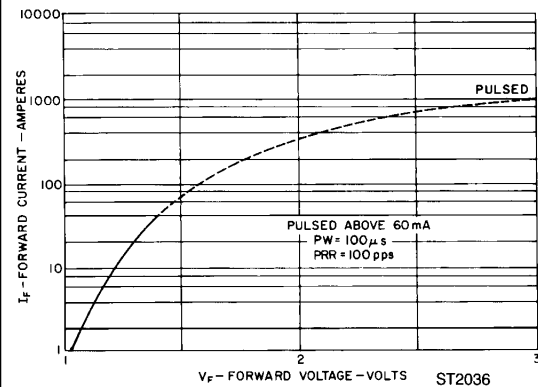
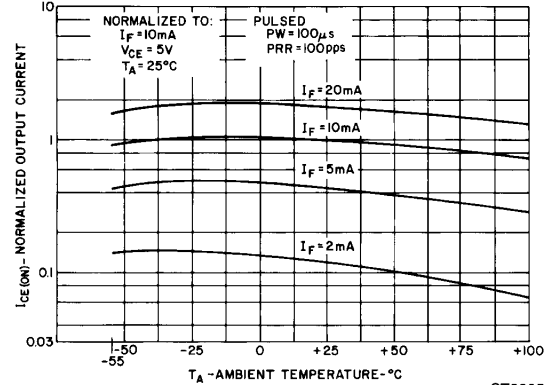
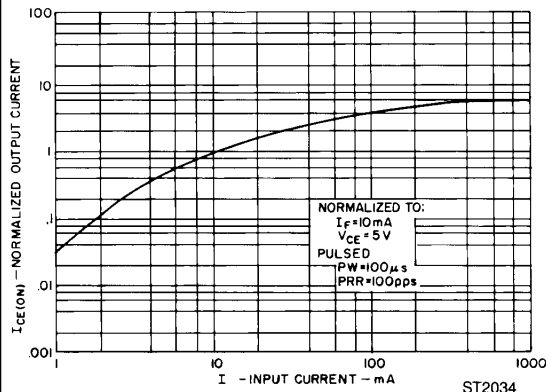
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
DC CURRENT TRANSFER RATIO						
H24A1	I_C	10.0			mA	$I_F = 10 \text{ mA}, V_{CE} = 10 \text{ V}$
H24A2	I_C	2.0			mA	$I_F = 10 \text{ mA}, V_{CE} = 10 \text{ V}$
Saturation voltage	$V_{CE(SAT)}$		0.1	0.4	V	$I_F = 10 \text{ mA}, I_C = 0.5 \text{ mA}$
Turn-on time	t_{on}		9		μs	$I_C = 2 \text{ mA}, V_{CE} = 10 \text{ V}, R_L = 100 \Omega$
Turn-off time	t_{off}		4		μs	$I_F = 2 \text{ mA}, V_{CE} = 10 \text{ V}, R_L = 100 \Omega$
Turn-on time	t_{on}		6.5		μs	$I_F = 10 \text{ mA}, V_{CE} = 5 \text{ V}, R_L = 10K\Omega$
Turn-off time	t_{off}		165		μs	$I_F = 10 \text{ mA}, V_{CE} = 5 \text{ V}, R_L = 10K\Omega$

ISOLATION CHARACTERISTICS

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Surge isolation voltage	V_{ISO}	6000			V_{Peak}	1 Minute
Steady-state isolation voltage	V_{ISO}	5300			V_{RMS}	1 Minute
Isolation resistance	R_{ISO}	10^{11}			ohms	$V_{i.o} = 500 \text{ VDC}$
Isolation capacitance	C_{ISO}		0.5		pF	$V_{i.o} = 0, f = 1 \text{ MHz}$

TYPICAL ELECTRICAL CHARACTERISTIC CURVES

(25°C Free Air Temperature Unless Otherwise Specified)





PHOTOTRANSISTOR OPTOCOUPLEDERS

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