

H24A1, H24A2
H24A3, H24A4



4 PIN OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

DESCRIPTION

The H24A series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo transistor in a plastic package.

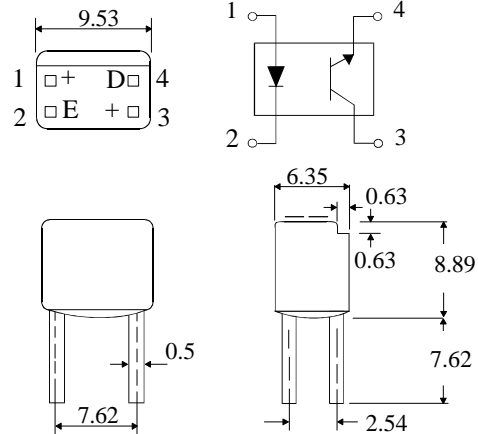
FEATURES

- 4 pin Dual-in-Line package
- High Current Transfer Ratio available (H24A1 = 100% min.)
- High Isolation Voltage ($3.75\text{kV}_{\text{RMS}}, 5.3\text{kV}_{\text{PK}}$)
- No base connection gives improved Common Mode Rejection

APPLICATIONS

- DC motor controllers
- Industrial systems controllers
- Signal transmission between systems of different potentials and impedances

Dimensions in mm



ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)

Storage Temperature _____ -40°C to + 85°C
Operating Temperature _____ -25°C to + 85°C
Lead Soldering Temperature
(1/16 inch (1.6mm) from case for 10 secs) 260°C

INPUT DIODE

Forward Current _____ 50mA
Reverse Voltage _____ 4V
Power Dissipation _____ 75mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 30V
Emitter-collector Voltage BV_{ECO} _____ 6V
Collector Current I_{C} _____ 20mA
Power Dissipation _____ 75mW

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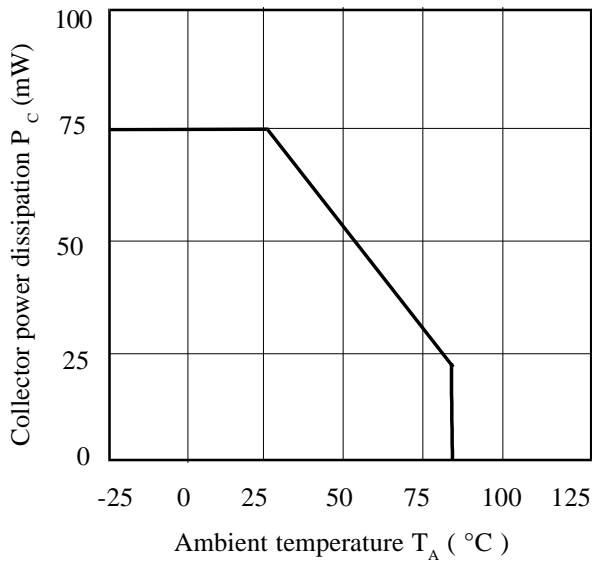
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.7	V	$I_F = 20\text{mA}$ $I_R = 1\mu\text{A}$ $V_R = 4\text{V}$
	Reverse Voltage (V_R)	3			V	
	Reverse Current (I_R)			10	μA	
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	30			V	$I_C = 1\text{mA}$ $I_E = 100\mu\text{A}$ $V_{CE} = 10\text{V}$
	Emitter-collector Breakdown (BV_{ECO})	6			V	
	Collector-emitter Dark Current (I_{CEO})			50	nA	
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	H24A1	100			%	$10\text{mA } I_F, 10\text{V } V_{CE}$
	H24A2	20			%	$10\text{mA } I_F, 10\text{V } V_{CE}$
	H24A3	75			%	$10\text{mA } I_F, 10\text{V } V_{CE}$
	H24A4	50			%	$10\text{mA } I_F, 10\text{V } V_C$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	$10\text{mA } I_F, 0.5\text{mA } I_C$
	Input to Output Isolation Voltage V_{ISO}	3750 5300			V_{RMS} V_{PK}	See note 1 See note 1
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	$V_{IO} = 500\text{V}$ (note 1)
	Turn-on Time ton		9		μs	$V_{CE} = 10\text{V},$ $I_C = 2\text{mA}, R_L = 100\Omega$
	Turn-off Time toff		4		μs	
Turn-on Time ton		6.5		μs	$V_{CE} = 5\text{V},$ $I_F = 10\text{mA}, R_L = 10\text{k}\Omega$	
Turn-off Time toff		165		μs		

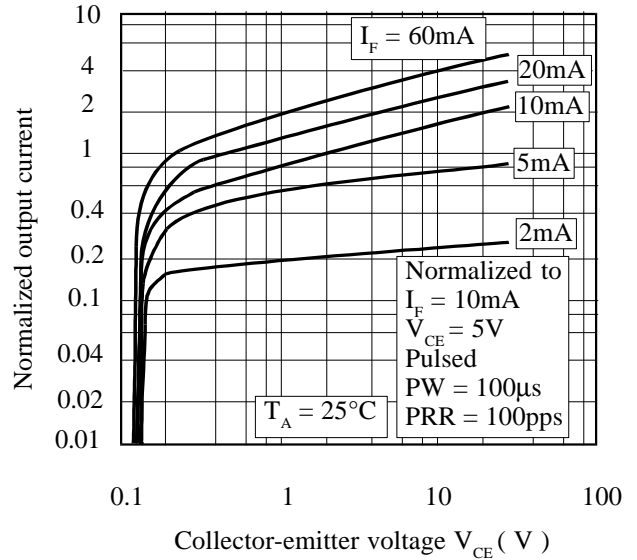
Note 1 Measured with input leads shorted together and output leads shorted together.

Note 2 Special Selections are available on request. Please consult the factory.

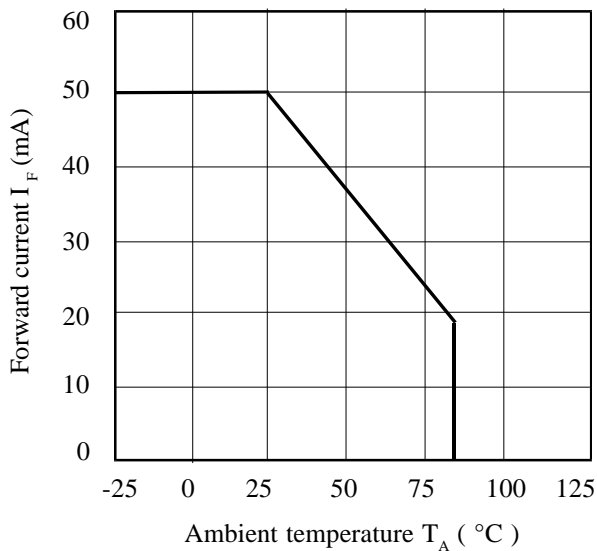
Collector Power Dissipation vs. Ambient Temperature



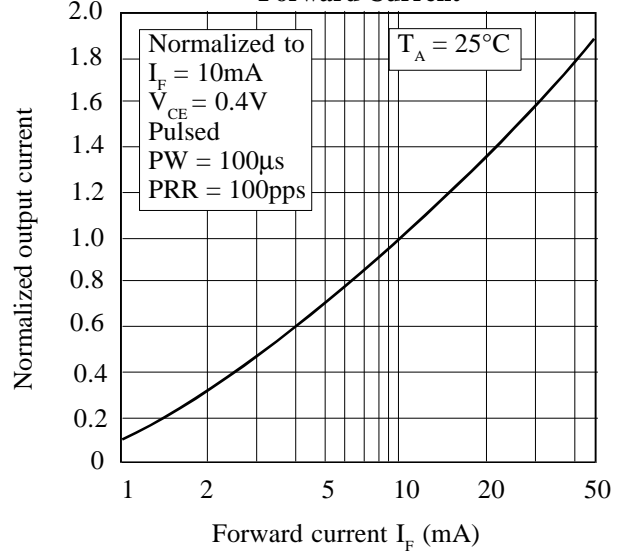
Normalized Output Current vs. Collector-emitter Voltage



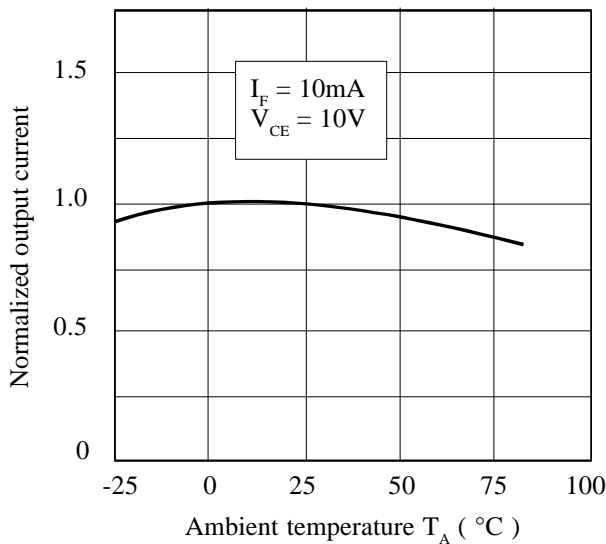
Forward Current vs. Ambient Temperature



Normalized Output Current vs. Forward Current



Normalized Output Current vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature

