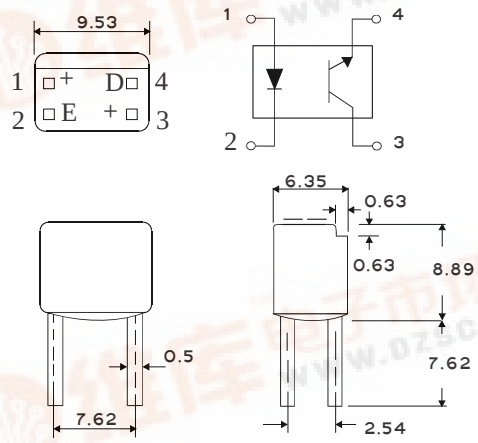
H24A1, H24A2
H24A3, H24A4

4 PIN OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

Dimensions in mm



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 (3.75kV$_{RMS}$,5.3kV$_{PK}$)
- No base connection gives improved Common Mode Rejection

APPLICATIONS

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

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°C Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.7	V	I_F = 20mA
	Reverse Voltage (V_R)	3			V	I_R = 1µA
	Reverse Current (I_R)			10	µA	V_R = 4V
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	30			V	I_C = 1mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})			50	nA	V_{CE} = 10V
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	H24A1	100			%	10mA I_F, 10V V_{CE}
	H24A2	20			%	10mA I_F, 10V V_{CE}
	H24A3	75			%	10mA I_F, 10V V_{CE}
	H24A4	50			%	10mA I_F, 10V V_C
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	10mA I_F , 0.5mA I_C
	Input to Output Isolation Voltage V_{ISO}	3750			V_{RMS}	See note 1
		5300			V_{PK}	See note 1
	Input-output Isolation Resistance R_{ISO}	$5x10^{10}$			Ω	V_{IO} = 500V (note 1)
	Turn-on Time ton		9		µs	V_{CE} = 10V ,
	Turn-off Time toff		4		µs	I_C = 2mA,R_L= 100Ω
	Turn-on Time ton		6.5		µs	V_{CE} = 5V ,
	Turn-off Time toff		165		µs	I_F = 10mA,R_L= 10kΩ

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.

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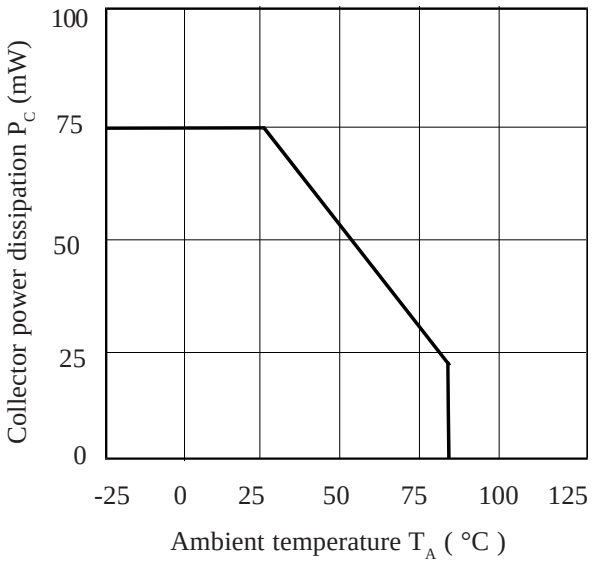
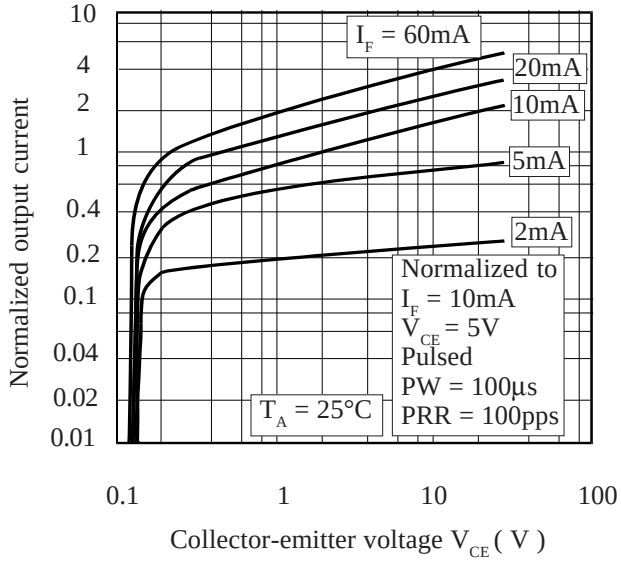
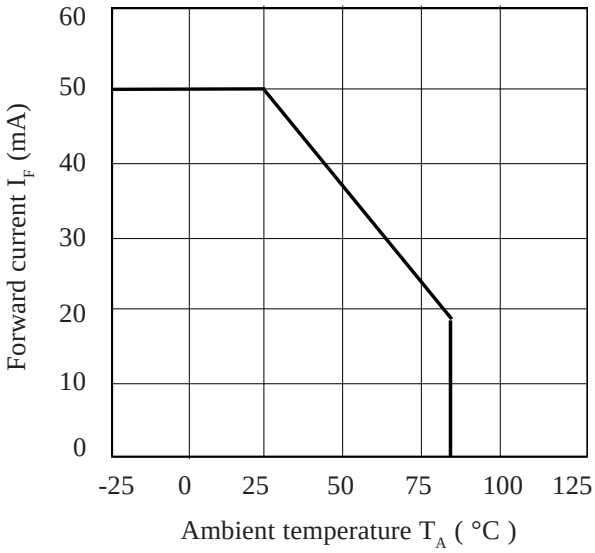
Collector Power Dissipation vs. Ambient Temperature



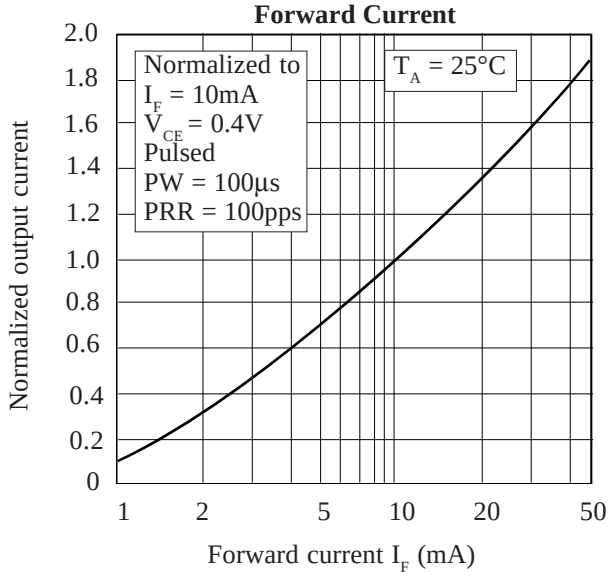
Normalized Output Current vs. Collector-emitter Voltage



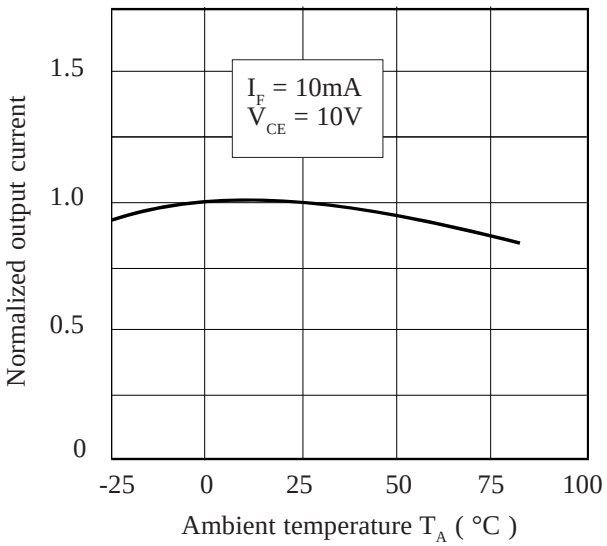
Forward Current vs. Ambient Temperature



Normalized Output Current vs. Forward Current



Normalized Output Current vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature