



4 PIN OPTICALLY COUPLED ISOLATOR PHOTODARLINGTON OUTPUT

DESCRIPTION

The H24B series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo darlington in a plastic package.

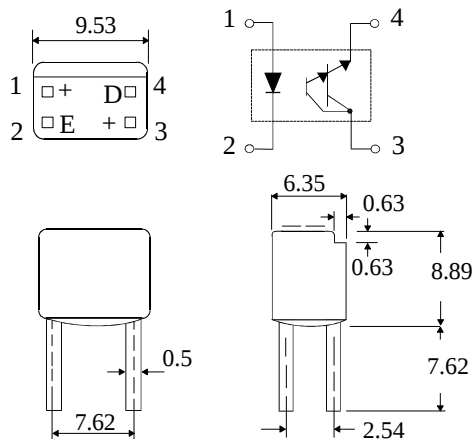
FEATURES

- 4 pin Dual-in-Line package
- High Current Transfer Ratio available (H24B1 = 1000% min.)
- High Isolation Voltage ($3.75\text{kV}_{\text{RMS}}$, 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

Dimensions in mm



ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)

Storage Temperature _____ -40°C to $+85^{\circ}\text{C}$
 Operating Temperature _____ -25°C to $+85^{\circ}\text{C}$
 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} _____ 50mA
 Power Dissipation _____ 75mW

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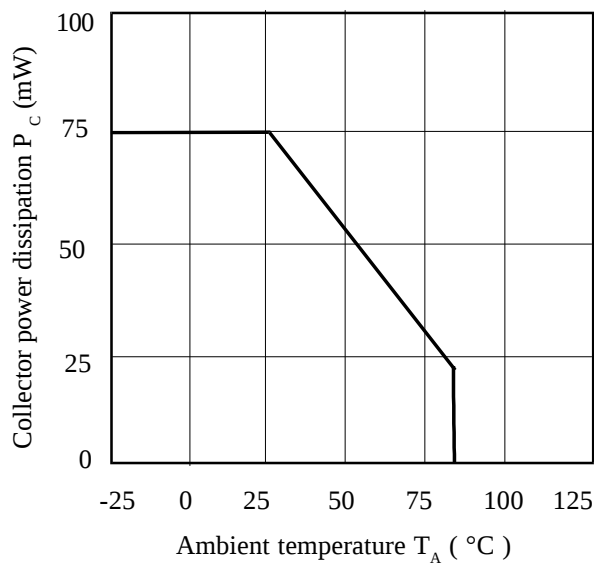
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)	3	1.2	1.7	V	$I_F = 50\text{mA}$ $I_R = 1\mu\text{A}$ $V_R = 4\text{V}$
	Reverse Voltage (V_R)			10	V	
	Reverse Current (I_R)				μA	
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	30		100	V	$I_C = 1\text{mA}$
	Emitter-collector Breakdown (BV_{ECO})	6			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current (I_{CEO})				nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	H24B1	1000			%	$5\text{mA } I_F, 1.5\text{V } V_{CE}$
	H24B2	400			%	$5\text{mA } I_F, 1.5\text{V } V_{CE}$
	H24B3	750			%	$5\text{mA } I_F, 1.5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			1.0	V	$5\text{mA } I_F, 2\text{mA } I_C$
	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 t_{on}		105		μs	$V_{CE} = 10\text{V},$ $I_C = 10\text{mA}, R_L = 100\Omega$
	Turn-off Time t_{off}		60		μs	
	Turn-on Time t_{on}		10		μs	$V_{CC} = 5\text{V},$ $I_F = 10\text{mA}, R_L = 1\text{k}\Omega$
	Turn-off Time t_{off}		700		μs	

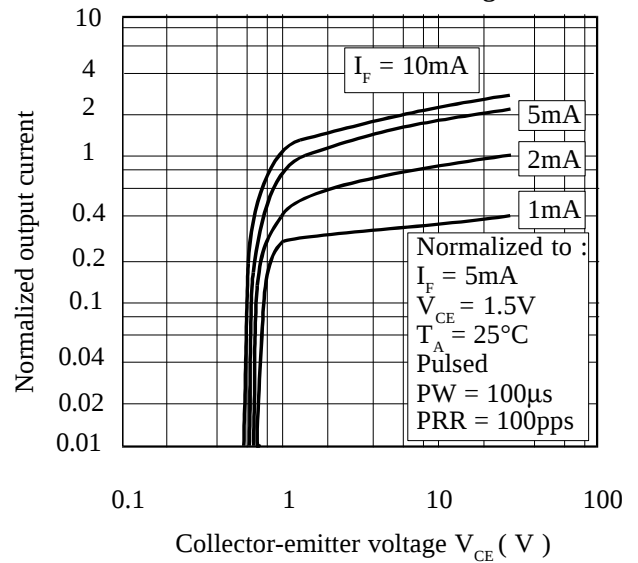
Note 1 Measured with input leads shorted together and output leads shorted together.

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

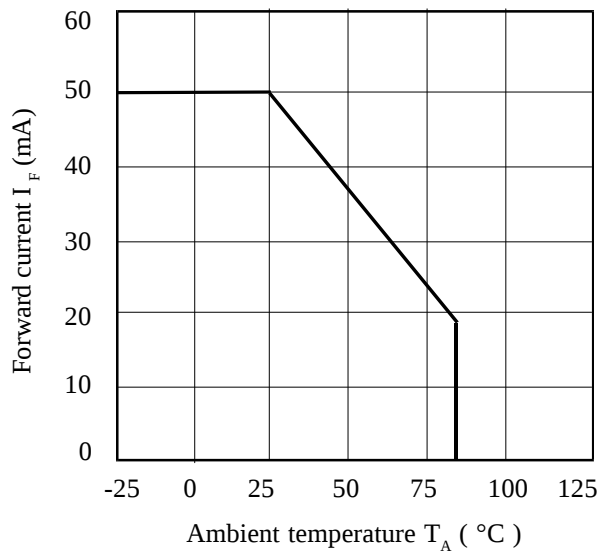
Collector Power Dissipation vs. Ambient Temperature



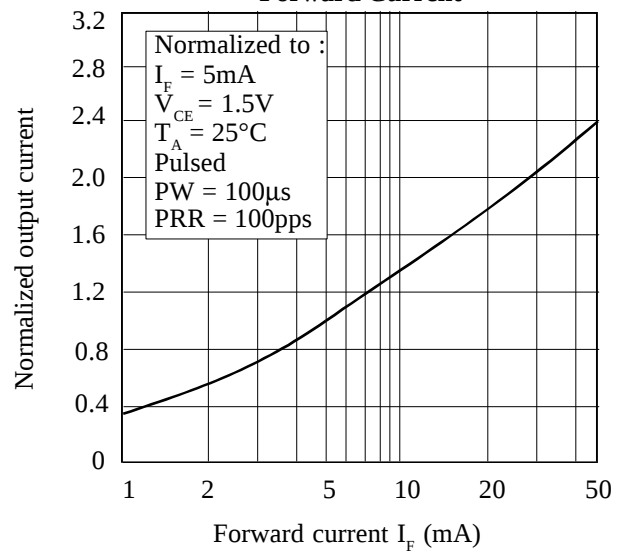
Normalized Output Current vs. Collector-emitter Voltage



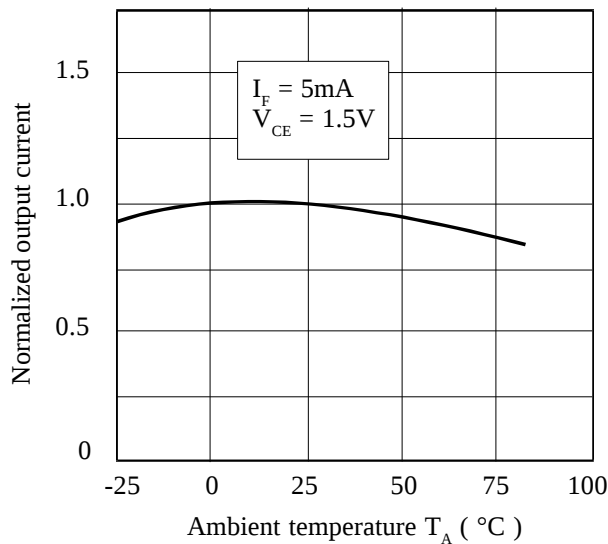
Forward Current vs. Ambient Temperature



Normalized Output Current vs. Forward Current



Normalized Output Current vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature

