

H11D1X, H11D2X, H11D3X, H11D4X
H11D1, H11D2, H11D3, H11D4



HIGH VOLTAGE OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead forms : -
- STD
- G form
- SMD approved to CECC 00802

DESCRIPTION

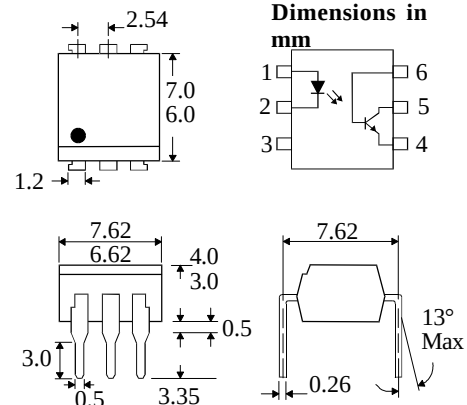
The H11D series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

FEATURES

- Options :-
10mm lead spread - add G after part no.
Surface mount - add SM after part no.
Tape&reel - add SMT&R after part no.
- High Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- High BV_{CER} (300V - H11D1, H11D2)
(200V - H11D3, H11D4)
- All electrical parameters 100% tested
- Custom electrical selections available

APPLICATIONS

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



ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)

Storage Temperature _____ -55°C to + 150°C
Operating Temperature _____ -55°C to + 100°C
Lead Soldering Temperature
(1/16 inch (1.6mm) from case for 10 secs) 260°C

INPUT DIODE

Forward Current _____ 60mA
Reverse Voltage _____ 6V
Power Dissipation _____ 100mW

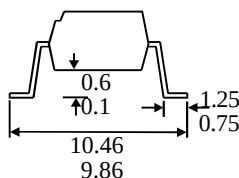
OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CER} (R_{BE} = 1MΩ)
H11D1, H11D2 _____ 300V
H11D3, H11D4 _____ 200V
Collector-base Voltage BV_{CBO}
H11D1, H11D2 _____ 300V
H11D3, H11D4 _____ 200V
Emitter-collector Voltage BV_{ECO} _____ 6V
Power Dissipation _____ 300mW

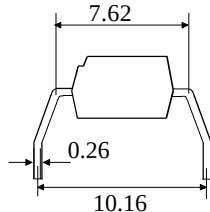
POWER DISSIPATION

Total Power Dissipation _____ 260mW
(derate linearly 2.67mW/°C above 25°C)

OPTION SM SURFACE MOUNT



OPTION G



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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	1.5	V	$I_F = 10\text{mA}$
	Reverse Voltage (V_R)	6			V	$I_R = 10\mu\text{A}$
	Reverse Current (I_R)			10	μA	$V_R = 6\text{V}$
Output	Collector-emitter Breakdown (BV_{CER})				V	$I_C = 1\text{mA}$, $R_{\text{BE}} = 1\text{M}\Omega$ (note 2)
	H11D1, H11D2	300			V	
	H11D3, H11D4	200			V	
	Collector-base Breakdown (BV_{CBO})				V	$I_C = 100\mu\text{A}$
	H11D1, H11D2	300			V	
	H11D3, H11D4	200			V	
	Emitter-collector Breakdown (BV_{ECO})	6			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current (I_{CER})					
	H11D1, H11D2			100	nA	$V_{\text{CE}} = 200\text{V}$, $R_{\text{BE}} = 1\text{M}\Omega$
				250	μA	$V_{\text{CE}} = 200\text{V}$, $R_{\text{BE}} = 1\text{M}\Omega$, $T_A = 100^\circ\text{C}$
Coupled						$V_{\text{CE}} = 100\text{V}$, $R_{\text{BE}} = 1\text{M}\Omega$
	H11D3, H11D4					$V_{\text{CE}} = 100\text{V}$, $R_{\text{BE}} = 1\text{M}\Omega$, $T_A = 100^\circ\text{C}$
	Current Transfer Ratio (CTR)	20			%	$10\text{mA } I_F$, $10\text{V } V_{\text{CE}}$, $R_{\text{BE}} = 1\text{M}\Omega$
	Collector-emitter Saturation Voltage $V_{\text{CE(SAT)}}$			0.4	V	$10\text{mA } I_F$, $0.5\text{mA } I_C$, $R_{\text{BE}} = 1\text{M}\Omega$
	Input to Output Isolation Voltage V_{ISO}	5300			V_{RMS}	See note 1
		7500			V_{PK}	See note 1
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	$V_{\text{IO}} = 500\text{V}$ (note 1)
	Turn-on Time t_{on}		5		μs	$V_{\text{CC}} = 10\text{V}$, $I_C = 2\text{mA}$, $R_L = 100\Omega$, fig 1
	Turn-off Time t_{off}		5		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.

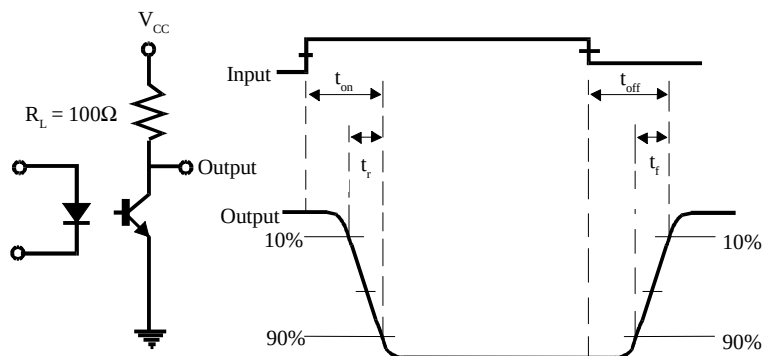
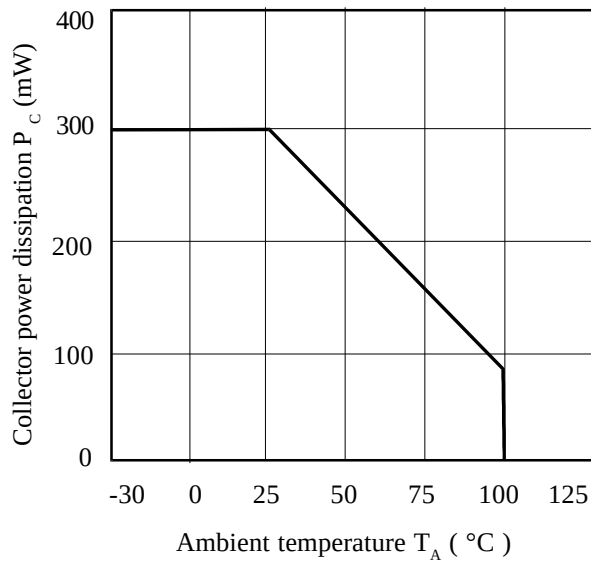
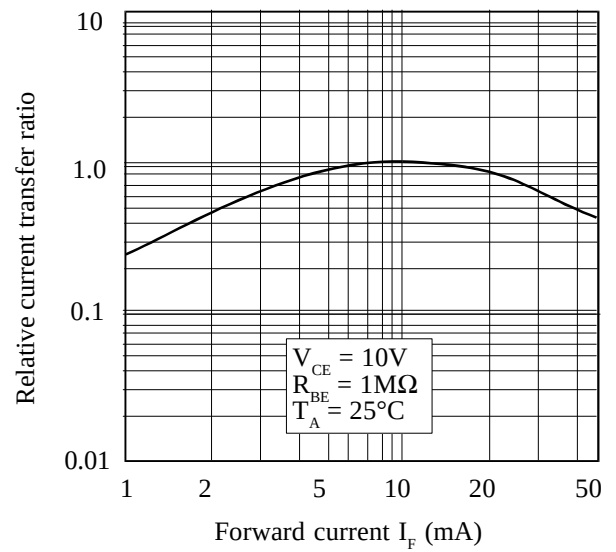


FIG 1

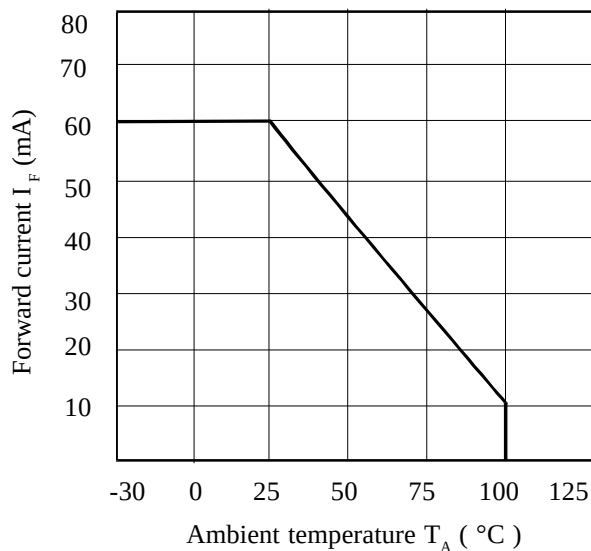
Collector Power Dissipation vs. Ambient Temperature



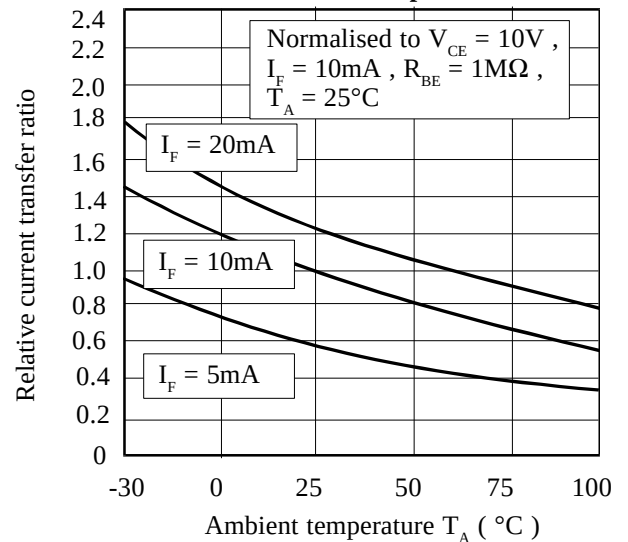
Relative Current Transfer Ratio vs. Forward Current (normalised to 10mA I_F)



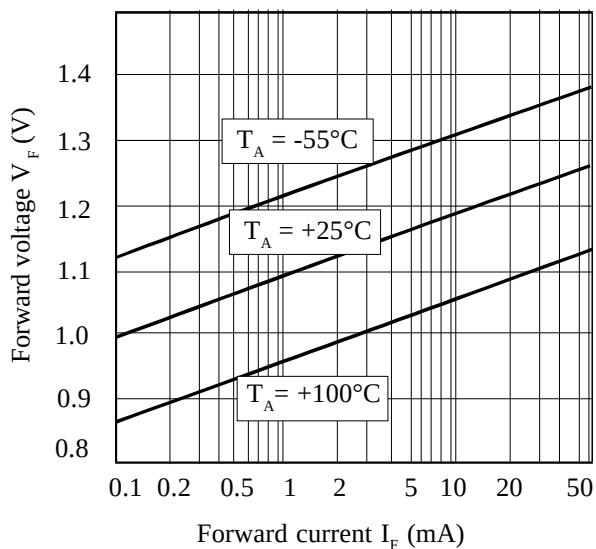
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature



Forward Voltage vs. Forward Current



Collector-base Current vs. Ambient Temperature

