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

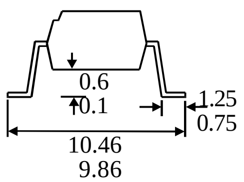
DESCRIPTION

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.

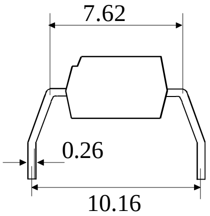
FEATURES
- Options :-
  10mm lead spread - add G after part no.
  Surface mount - add SM after part no.
  Tape&reel - add SMT&R after part no.
- High Isolation Voltage (5.3kV_{RMS} ,7.5kV_{PK})
- High BV_{CER} (300V - H11D1, H11D2)
  (200V - H11D3, H11D4)
- All electrical parameters 100% tested
- Custom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

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

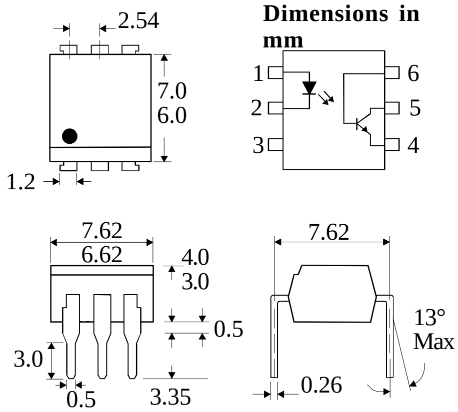
OPTION SM
SURFACE MOUNT



OPTION G



Dimensions in mm



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	150mW

POWER DISSIPATION

Total Power Dissipation	250mW
(derate linearly 2.67mW/°C above 25°C)	

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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	1.5	V	I_F = 10mA
	Reverse Current (I_R)			10	µA	V_R=6V
Output	Collector-emitter Breakdown (BV_{CER})					
	H11D1, H11D2	300			V	I_C = 1mA, R_{BE} = 1MΩ
	H11D3, H11D4	200			V	(note 2)
	Collector-base Breakdown (BV_{CBO})					
	H11D1, H11D2	300			V	I_C = 100µA
	H11D3, H11D4	200			V	
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CER})					
	H11D1, H11D2			100	nA	V_{CE} = 200V,R_{BE}=1MΩ
				250	µA	V_{CE}= 200V,R_{BE}=1MΩ, T_A=100°C
	H11D3, H11D4			100	nA	V_{CE} = 100V,R_{BE}=1MΩ
				250	µA	V_{CE}= 100V,R_{BE}=1MΩ, T_A=100°C
Coupled	Current Transfer Ratio (CTR)	20			%	10mA I_F, 10V V_{CE}, R_{BE} = 1MΩ
	Collector-emitter Saturation Voltage$V_{CE(SAT)}$			0.4	V	10mA I_F, 0.5mA I_C, R_{BE} = 1MΩ
	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}	$5x10^{10}$			Ω	V_{IO} = 500V (note 1)
	Turn-on Time ton		5		µs	V_{CC} = 10V, I_C= 2mA,
	Turn-off Time toff		5		µs	R_L = 100Ω , fig 1

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.

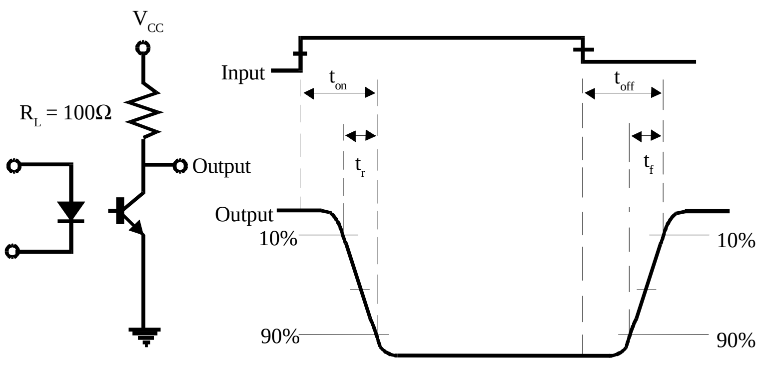
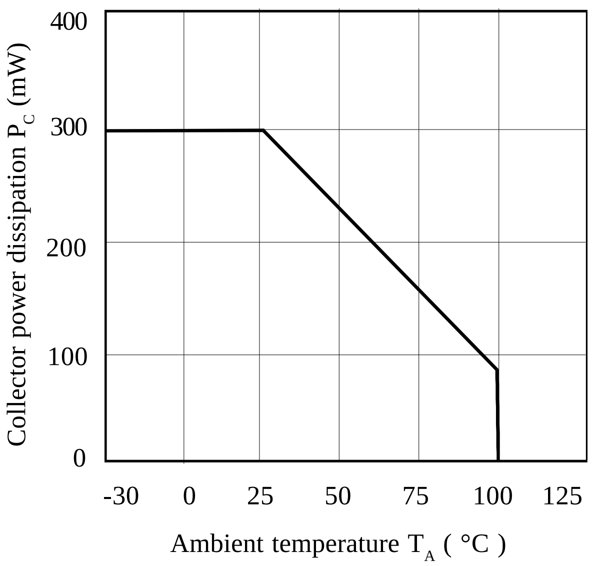
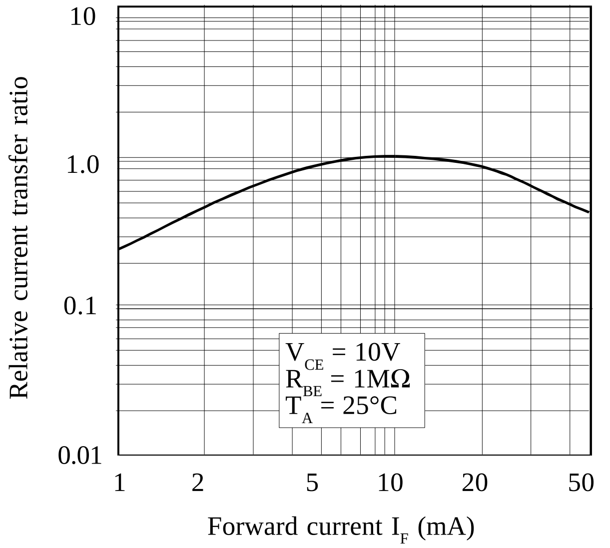


FIG 1

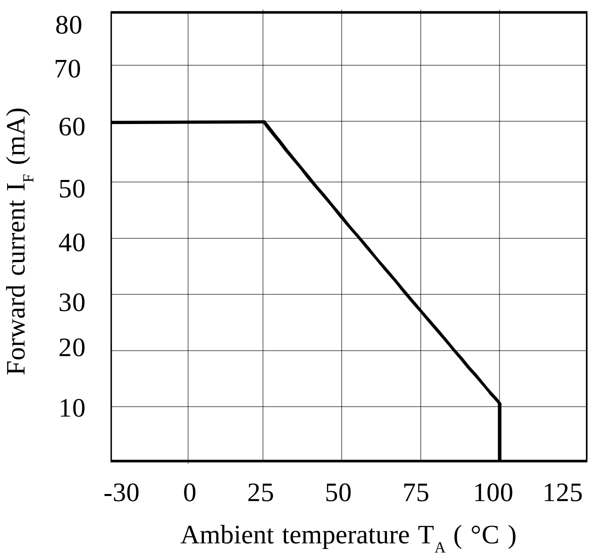
Collector Power Dissipation vs. Ambient Temperature



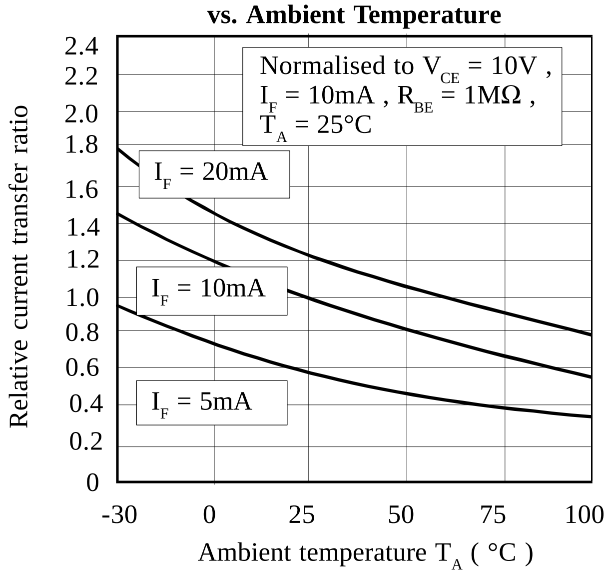
Relative Current Transfer Ratio vs. Forward Current (normalised to 10mA I_F)



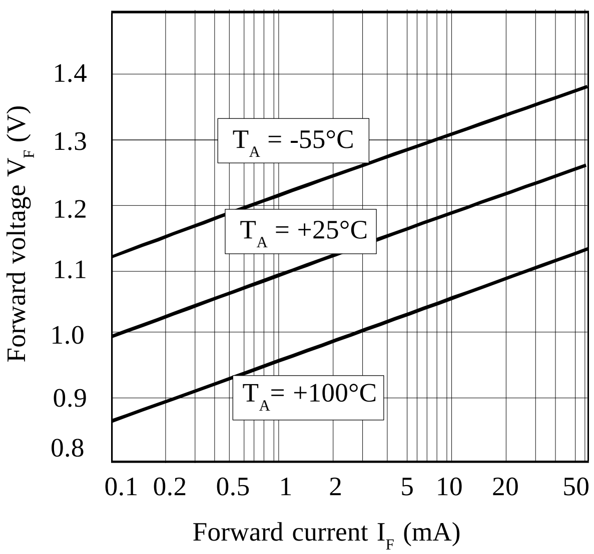
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature



Forward Voltage vs. Forward Current



Collector-base Current vs. Ambient Temperature