H11G1, H11G2, H11G3
H11G1X

ISOCOM COMPONENTS

ROHS COMPLIANT

HIGH VOLTAGE DARLINGTON OUTPUT OPTICALLY COUPLED ISOLATOR

APPROVALS

- UL recognised, File No. E91231
  Package Code " JJ "

'X' SPECIFICATION APPROVALS

- H11G1X VDE 0884 in 3 available lead form :
  - STD
  - G form
  - SMD approved to CECC 00802

DESCRIPTION

The H11G_ series are optically coupled isolators consisting of an infrared light emitting diode and a high voltage NPN silicon photo darlington which has an integral base-emitter resistor to optimise switching speed and elevated temperature characteristics in a standard 6pin dual in line plastic package.

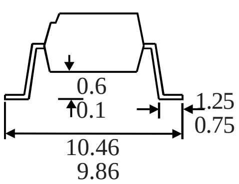
FEATURES

- 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 Current Transfer Ratio (1000% min)
- High BV$_{CEO}$ (H11G1 - 100V min.)
- Low collector dark current :-
  100nA max. at 80V V$_{CE}$
- Low input current 1mA I$_F$

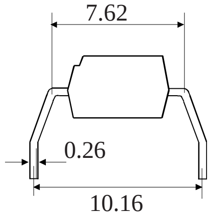
APPLICATIONS

- Modems
- Copiers, facsimiles
- Numerical control machines
- Signal transmission between systems of different potentials and impedances

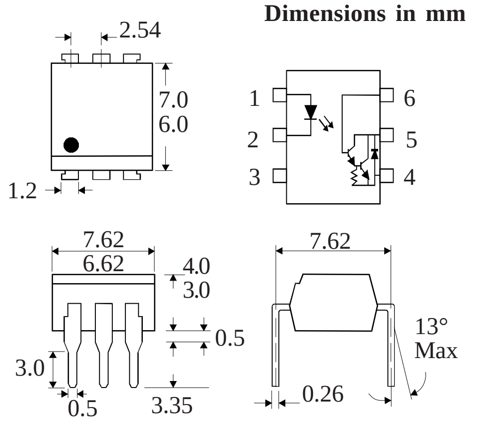
OPTION SM
SURFACE MOUNT



OPTION G



Dimensions in mm



ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature	-40°C to + 125°C
Operating Temperature	-25°C to + 100°C
Lead Soldering Temperature (1/16 inch (1.6mm) from case for 10 secs)	260°C

INPUT DIODE

Forward Current	50mA
Reverse Voltage	6V
Power Dissipation	70mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV$_{CEO}$ H11G3,H11G2,H11G1	55,80,100V
Collector-base Voltage BV$_{CBO}$ H11G3,H11G2,H11G1	55,80,100V
Emitter-base Voltage BV$_{EBO}$	6V
Collector Current	150mA
Power Dissipation	300mW

POWER DISSIPATION

Total Power Dissipation	350mW

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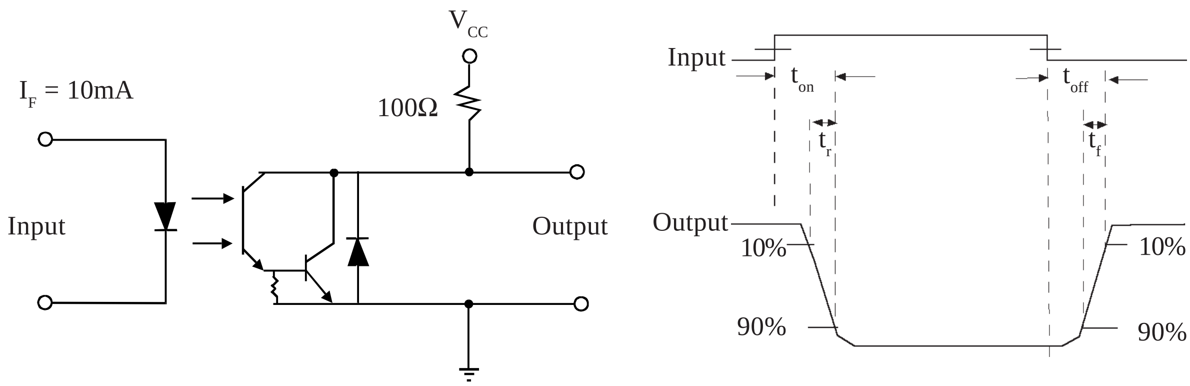
ELECTRICAL CHARACTERISTICS (T_A= 25°C Unless otherwise noted)

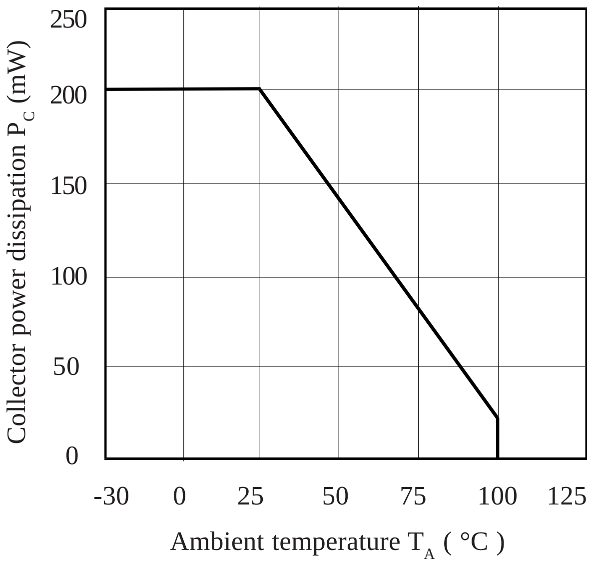
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.5	V	I_F = 10mA
	Reverse Current (I_R)			10	µA	V_R =4V
Output	Collector-emitter Breakdown (BV_{CEO})					
	H11G1	100			V	I_C = 1mA
	H11G2	80			V	I_C = 1mA
	H11G3	55			V	I_C = 1mA
	Collector-base Breakdown (BV_{CBO})					
	H11G1	100			V	I_C = 100µA
	H11G2	80			V	I_C = 100µA
	H11G3	55			V	I_C = 100µA
	Emitter-base Breakdown (BV_{EBO})	6			V	I_E = 0.1mA
	Collector-emitter Dark Current (I_{CEO})					
	H11G1			100	nA	V_{CE} = 80V
	H11G2			100	nA	V_{CE} = 60V
	H11G3			100	nA	V_{CE} = 30V
Coupled	Collector Output Current (I_C)					
	H11G1,H11G2	100			mA	10mA I_F, 1.2V V_{CE}
	H11G1,H11G2	5			mA	1mA I_F, 5V V_{CE}
	H11G3	2			mA	1mA I_F, 5V V_{CE}
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$					
	H11G1,H11G2			1.0	V	1mA I_F, 1mA I_C
	H11G1,H11G2			1.2	V	16mA I_F, 50mA I_C
	H11G3			1.2	V	20mA I_F, 50mA I_C
	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}	$5x10^{10}$	10^{11}		Ω	V_{IO} = 500V (note 1)
	Input-output Capacitance Cf		0.6		pF	V = 0, f = 1MHz
	Response time (Rise), tr		100		µs	I_C=20mA, V_{CE} = 2V,
	Response time (Fall), tf		20		µs	R_L = 100Ω

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.

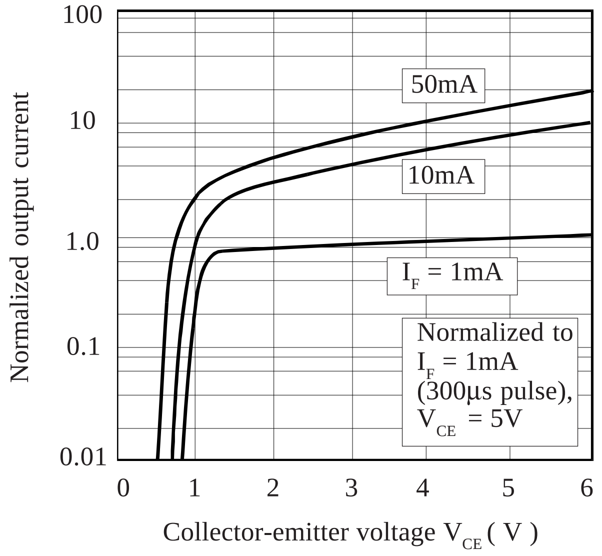
FIGURE 1



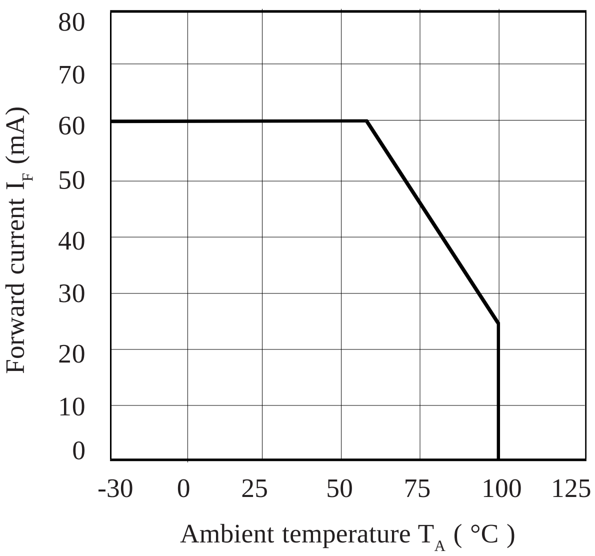
Collector Power Dissipation vs. Ambient Temperature



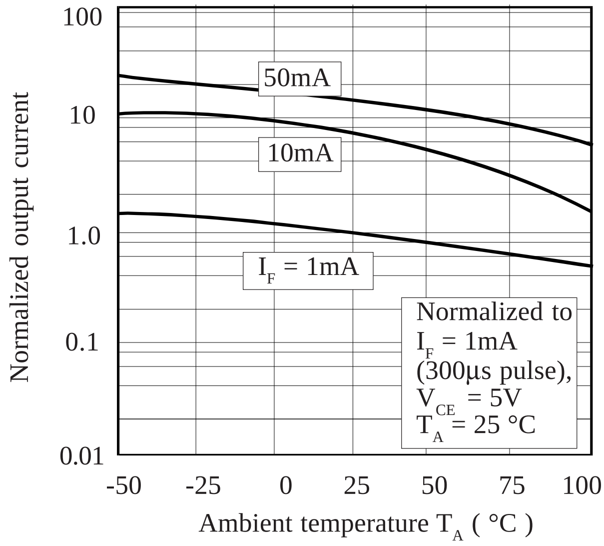
Normalized Output Current vs. Collector-emitter Voltage



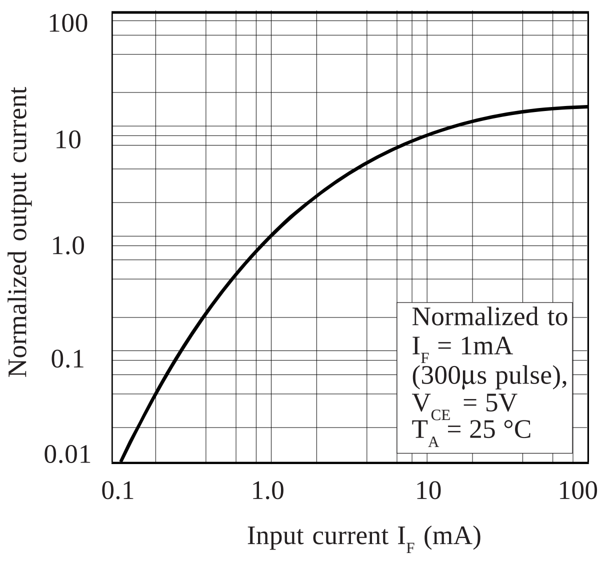
Forward Current vs. Ambient Temperature



Normalized Output Current vs. Ambient Temperature



Normalized Output Current vs. Input Current



Collector Dark Current vs. Ambient Temperature