SFH620-1X, SFH620-2X, SFH620-3X
SFH620-1, SFH620-2, SFH620-3

AC INPUT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- Certified to EN60950 by the following Test Bodies :-
  Nemko - Certificate No. P96102022
  Fimko - Registration No. 192313-01..25
  Semko - Reference No. 9639052 01
  Demko - Reference No. 305969
- VDE 0884 approval pending

DESCRIPTION

The SFH620 series of optically coupled isolators consist of inverse parallel infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

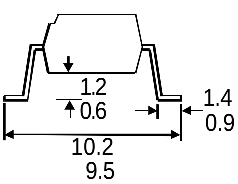
FEATURES

- Options :-
  10mm lead spread - add G after part no.
  Surface mount - add SM after part no.
  Tape&reel - add SMT&R after part no.
- Low input current ±1mA I_F
- High Current Transfer Ratios
- High Isolation Voltage (5.3kV$_{RMS}$,7.5kV$_{PK}$)
- High BV$_{CEO}$ (70V min)
- AC or polarity insensitive input
- All electrical parameters 100% tested
- Custom electrical selections available

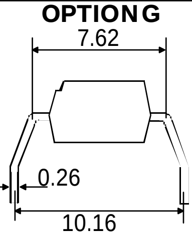
APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Telephone sets, Telephone exchanges
- Signal transmission between systems of different potentials and impedances

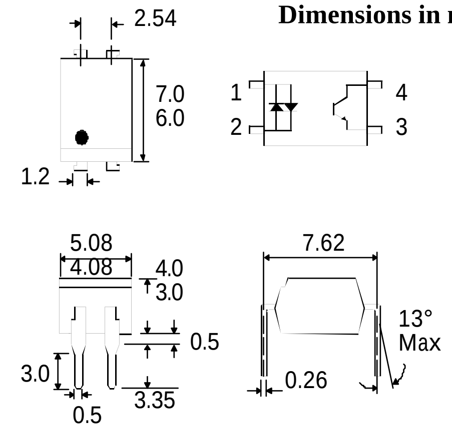
OPTION SM SURFACE MOUNT



OPTION G



Dimensions in mm



ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature	-55°C to + 125°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	±50mA
Power Dissipation	70mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV$_{CEO}$	70V
Emitter-collector Voltage BV$_{ECO}$	6V
Power Dissipation	150mW

POWER DISSIPATION

Total Power Dissipation	200mW
(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)			1.65	V	I_F = ±50mA
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	70			V	I_C = 1mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100μA
	Collector-emitter Dark Current (I_{CEO})					
	SFH620-1,2			50	nA	V_{CE} = 10V
	SFH620-3			100	nA	
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	SFH620-1	40		125	%	±10mA I_F , 5V V_{CE}
	SFH620-2	63		200	%	
	SFH620-3	100		320	%	
	SFH620-1	13			%	±1mA I_F , 5V V_{CE}
	SFH620-2	22			%	
	SFH620-3	34			%	
	Collector-emitter Saturation Voltage V_{CESAT}			0.4	V	±10mA I_F , 2.5mA 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}	$5x10^{10}$			Ω	V_{IO} = 500V (note 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.

SWITCHING CHARACTERISTICS

1. Linear Operation (without saturation) Fig 1.
I_F = 10mA, V_{CC} = 5V, R_L = 75Ω, T_A = 25°C

			UNITS
Turn-on Time	t_{on}	3.0	μs
Rise Time	t_r	2.0	μs
Turn-off Time	t_{off}	2.3	μs
Fall Time	t_f	2.0	μs
Cut-off Frequency	F_{CO}	250	kHz

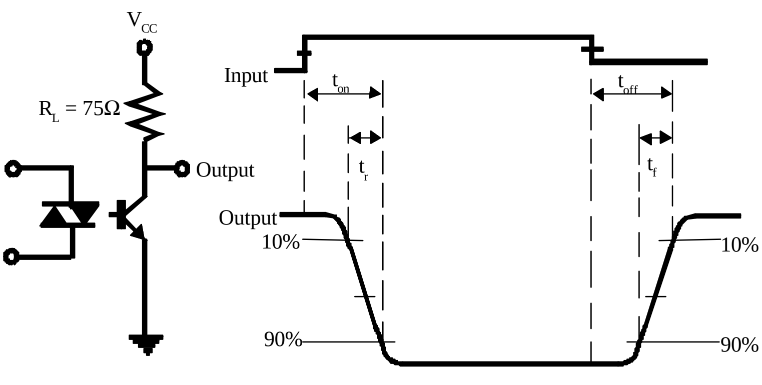
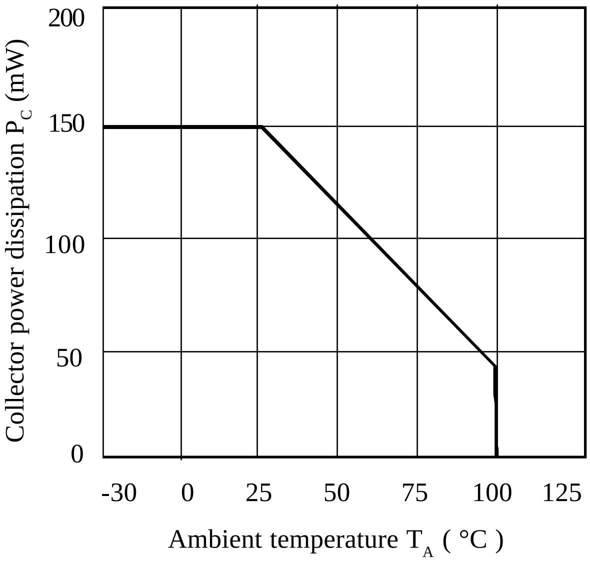
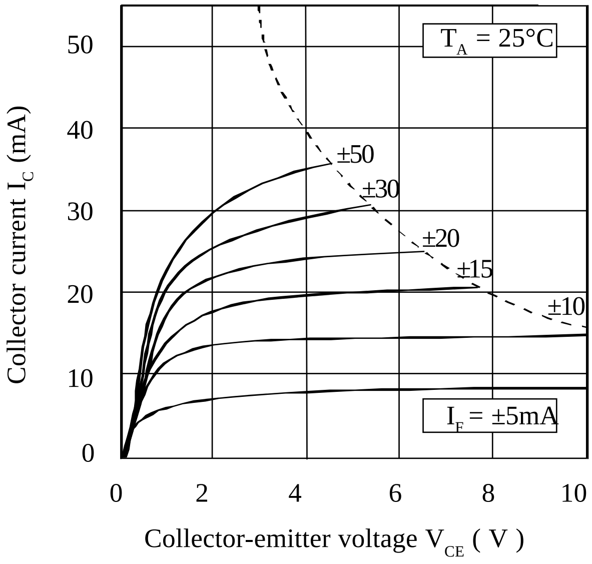


FIG 1

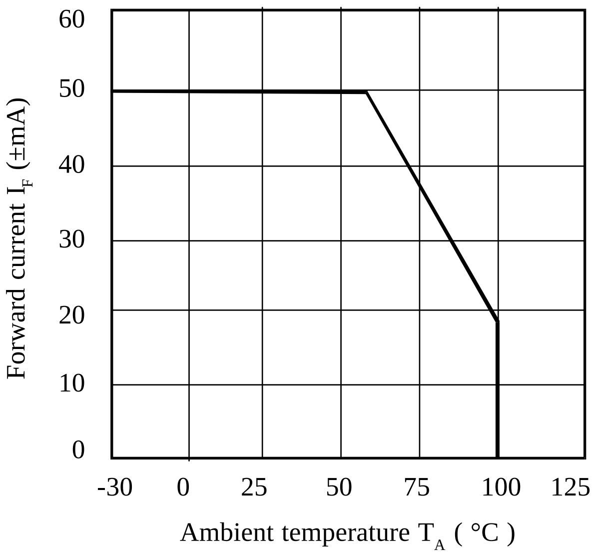
Collector Power Dissipation vs. Ambient Temperature



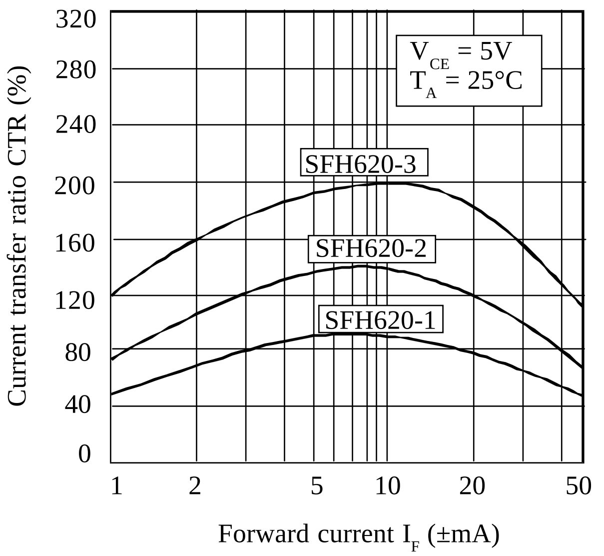
Collector Current vs. Collector-emitter Voltage (normalized to SFH620-2 & SFH620-3)



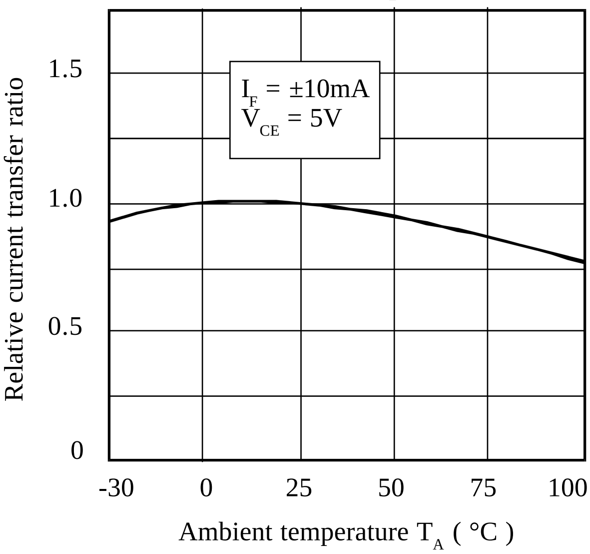
Forward Current vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature