4N25X, 4N26X, 4N27X, 4N28X
4N25, 4N26, 4N27, 4N28

OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead forms : -
  - STD
  - G form
  - SMD approved to CECC 00802
- Certified to EN60950 by the following Test Bodies :-
  Nemko - Certificate No. P96101299
  Fimko - Registration No. 190469-01..22
  Semko - Reference No. 9620076 01
  Demko - Reference No. 305567

DESCRIPTION

The 4N25, 4N26, 4N27, 4N28 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.

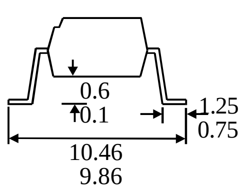
FEATURES

- 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 ($5.3kV_{RMS}$, $7.5kV_{PK}$)
- All electrical parameters 100% tested
- Custom electrical selections available

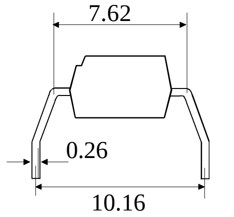
APPLICATIONS

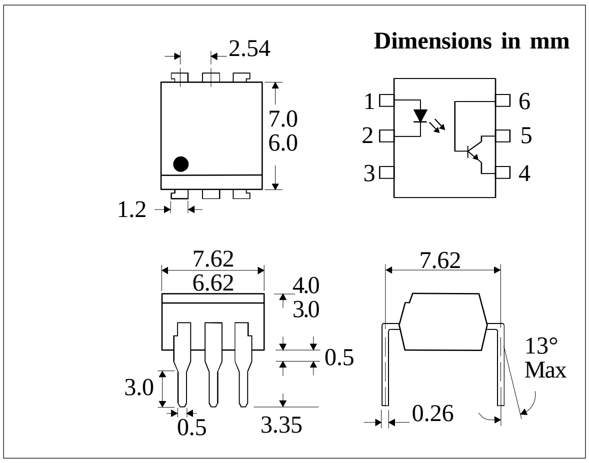
- DC motor controllers
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

OPTION SM
SURFACE MOUNT



OPTION G





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	105mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}	30V
Collector-base Voltage BV_{CBO}	70V
Emitter-collector Voltage BV_{ECO}	6V
Power Dissipation	160mW

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)		1.2	1.5	V	I_F = 10mA
	Reverse Voltage (V_R)	6			V	I_R = 10μA
	Reverse Current (I_R)			10	μA	V_R = 6V
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	30			V	I_C = 1mA
	Collector-base Breakdown (BV_{CBO})	70			V	I_C = 100μA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100μA
	Collector-emitter Dark Current (I_{CEO})			50	nA	V_{CE} = 10V
	Collector-base Dark Current (I_{CBO})			20	nA	V_{CE} = 10V
Coupled	Current Transfer Ratio (CTR)					
	4N25, 4N26	20			%	10mA I_F , 10V V_{CE}
	4N27, 4N28	10			%	10mA I_F , 10V V_{CE}
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.5	V	50mA I_F , 2mA 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)
	Turn-on Time ton		4		μs	V_{CC} = 10V ,
	Turn-off Time toff		3		μs	I_F= 10mA, R_L = 100Ω
	Output Rise Time tr		2		μs	(FIG 1)
	Output Fall Time tf		2		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.

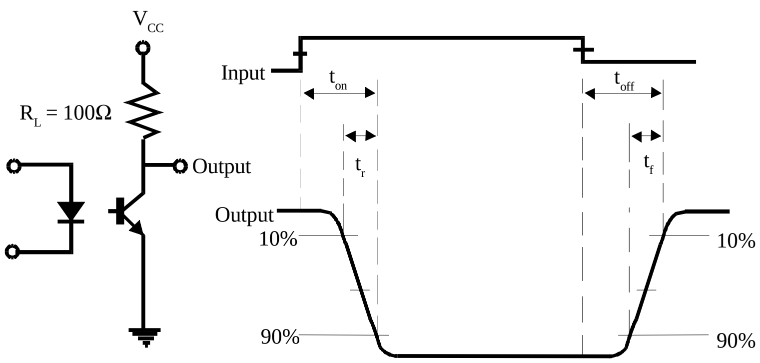
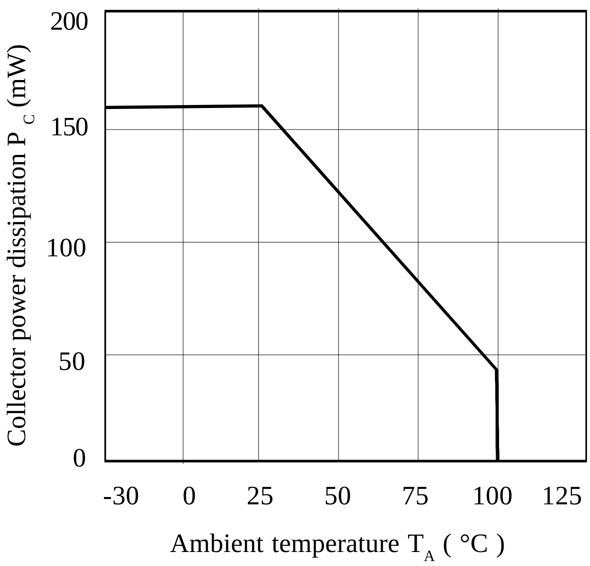
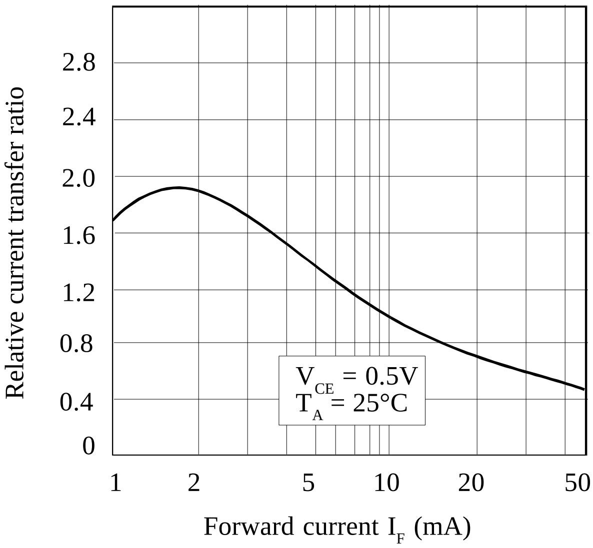


FIG 1

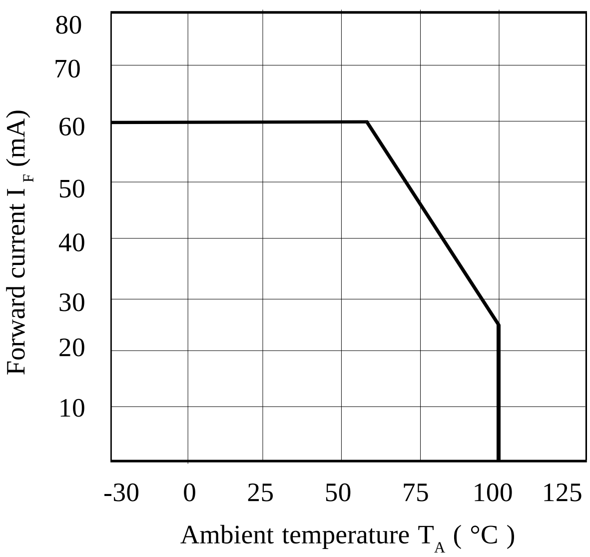
Collector Power Dissipation vs. Ambient Temperature



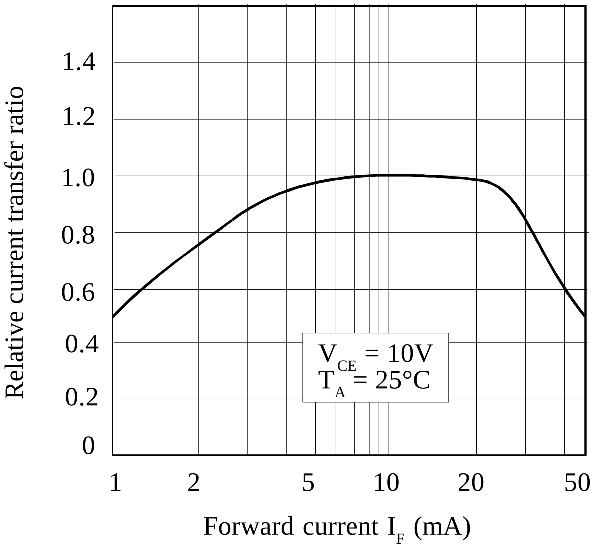
Relative Current Transfer Ratio vs. Forward Current



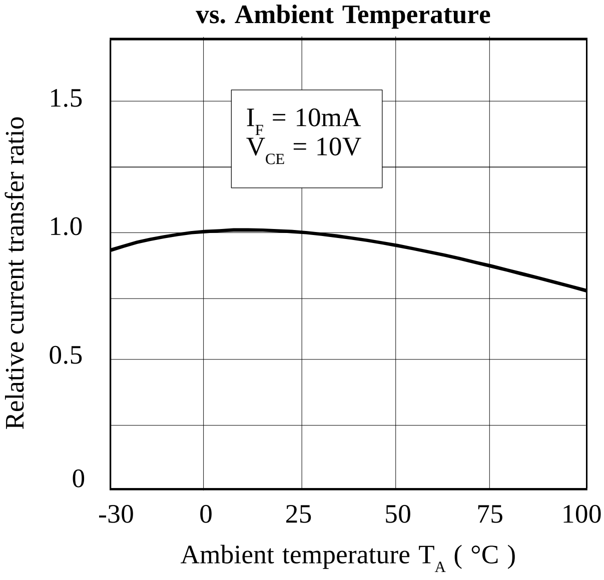
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature