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

ISOCOM COMPONENTS

ROHS COMPLIANT

OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

APPROVALS

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

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form : -
  - STD
  - G form
  - SMD approved to CECC 00802
- Certified to EN60950 by :-
  Nemko - Certificate No. P01102464

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.

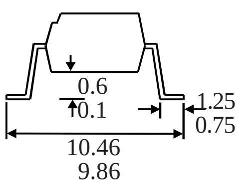
FEATURES

- 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

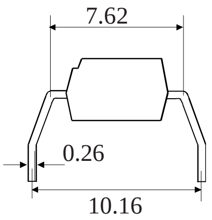
APPLICATIONS

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

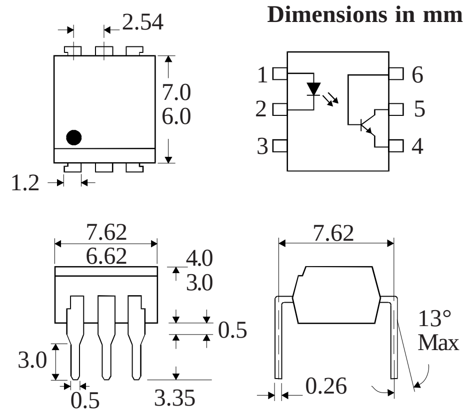
OPTION SM
SURFACE MOUNT



OPTION G



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	105mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}	30V
Collector-base Voltage BV_{CBO}	70V
Emitter-collector Voltage BV_{ECO}	6V
Collector Current	50mA
Power Dissipation	160mW

POWER DISSIPATION

Total Power Dissipation (derate linearly 2.67mW/°C above 25°C)	200mW

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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_{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
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)
	Output Rise Time, tr		2		µs	V_{CC}=5V , I_F=10mA
	Output Fall Time, tf		2		µs	R_L = 75Ω , (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.

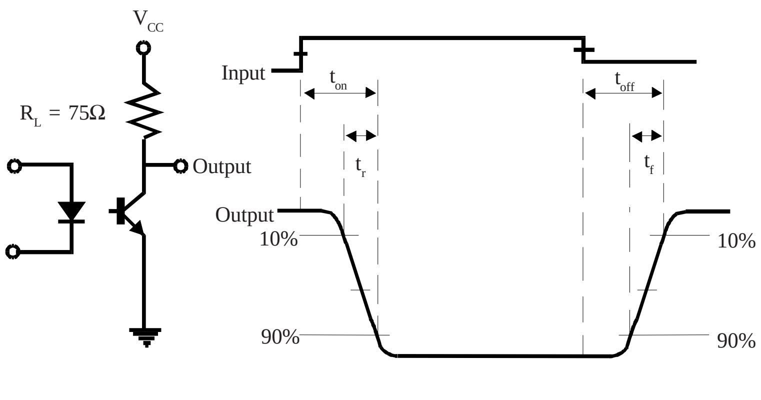
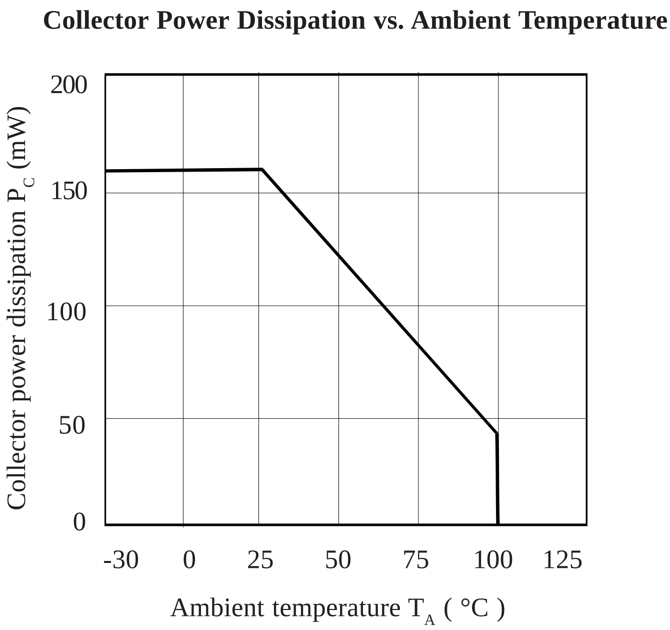
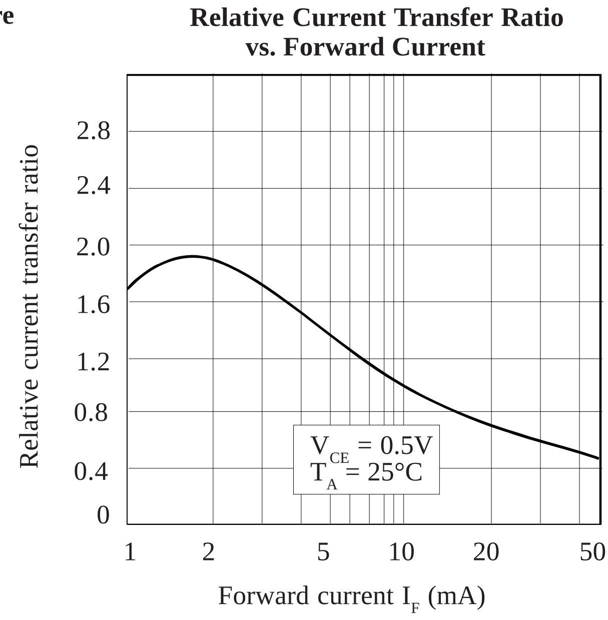


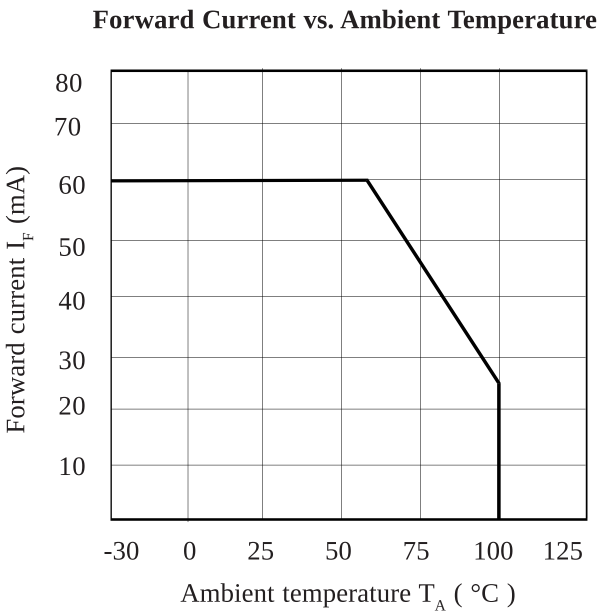
FIG 1



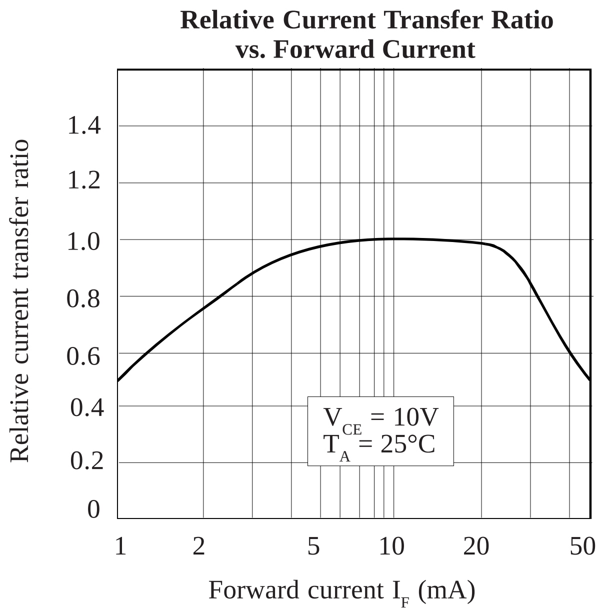
Collector Power Dissipation vs. Ambient Temperature
Collector power dissipation P_C (mW)
200
150
100
50
0
-30
0
25
50
75
100
125
Ambient temperature T_A (°C)



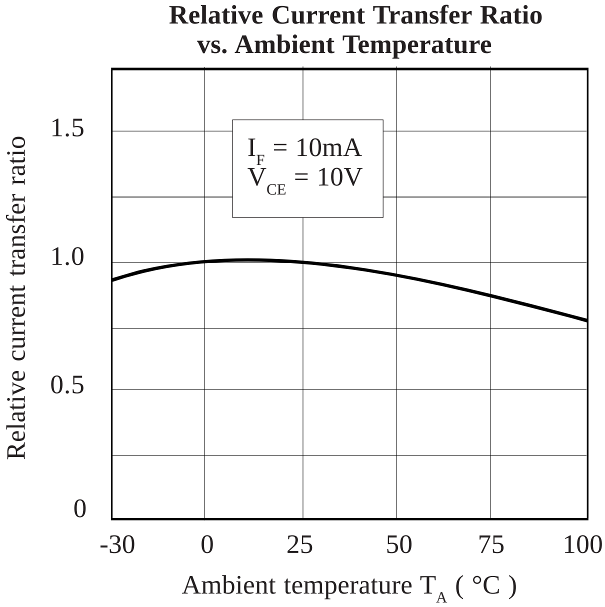
Relative Current Transfer Ratio vs. Forward Current
Relative current transfer ratio
2.8
2.4
2.0
1.6
1.2
0.8
0.4
0
V_CE = 0.5V
T_A = 25°C
1
2
5
10
20
50
Forward current I_F (mA)



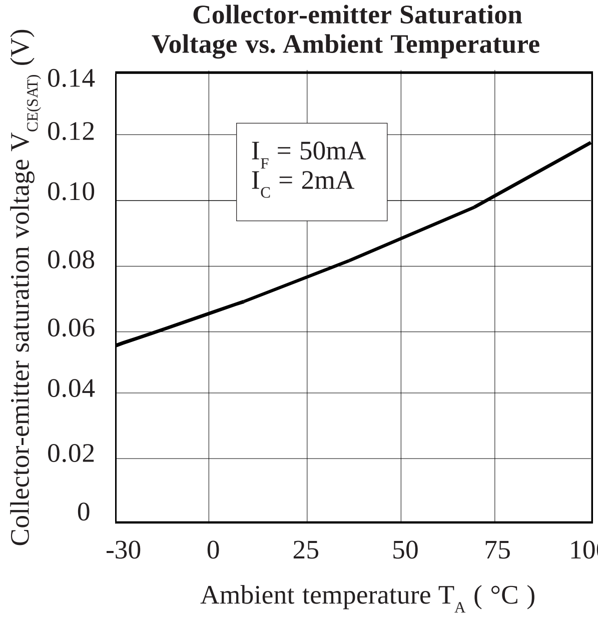
Forward Current vs. Ambient Temperature
Forward current I_F (mA)
80
70
60
50
40
30
20
10
-30
0
25
50
75
100
125
Ambient temperature T_A (°C)



Relative Current Transfer Ratio vs. Forward Current
Relative current transfer ratio
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
V_CE = 10V
T_A = 25°C
1
2
5
10
20
50
Forward current I_F (mA)



Relative Current Transfer Ratio vs. Ambient Temperature
Relative current transfer ratio
1.5
1.0
0.5
0
I_F = 10mA
V_CE = 10V
-30
0
25
50
75
100
Ambient temperature T_A (°C)



Collector-emitter Saturation Voltage vs. Ambient Temperature
Collector-emitter saturation voltage V_CE(SAT) (V)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0
I_F = 50mA
I_C = 2mA
-30
0
25
50
75
100
Ambient temperature T_A (°C)