

4N35X, 4N36X, 4N37X,  
4N35, 4N36, 4N37,



# ISOCOM

COMPONENTS



## OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

### APPROVALS

- UL recognised, File No. E91231  
Package System "GG"
- 'X' SPECIFICATION APPROVALS
- VDE 0884 in 3 available lead forms :-  
- STD  
- G form  
- SMD approved to CECC 00802

### DESCRIPTION

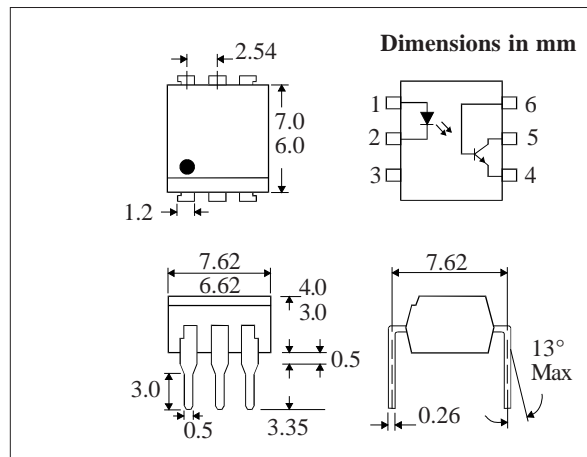
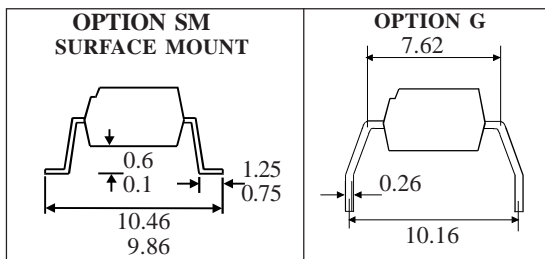
The 4N35, 4N36, 4N37 series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

### 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 Current Transfer Ratio (100% min.)
- High Isolation Voltage (5.3kV<sub>RMS</sub>, 7.5kV<sub>PK</sub>)
- 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



### 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 \_\_\_\_\_ 200mW  
(derate linearly 2.67mW/°C above 25°C)

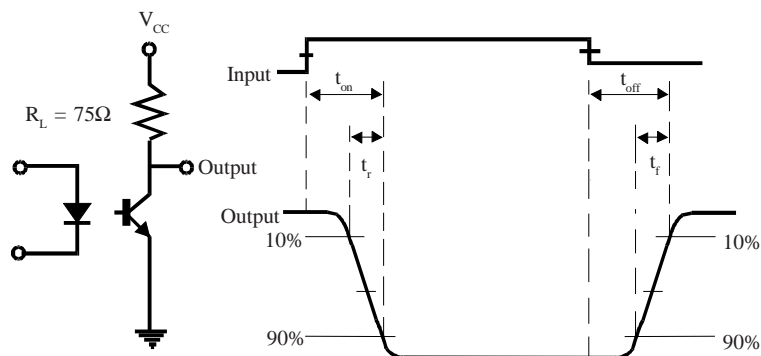
### ISOCOM COMPONENTS 2004 LTD

Unit 25B, Park View Road West,  
Park View Industrial Estate, Brenda Road  
Hartlepool, Cleveland, TS25

**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

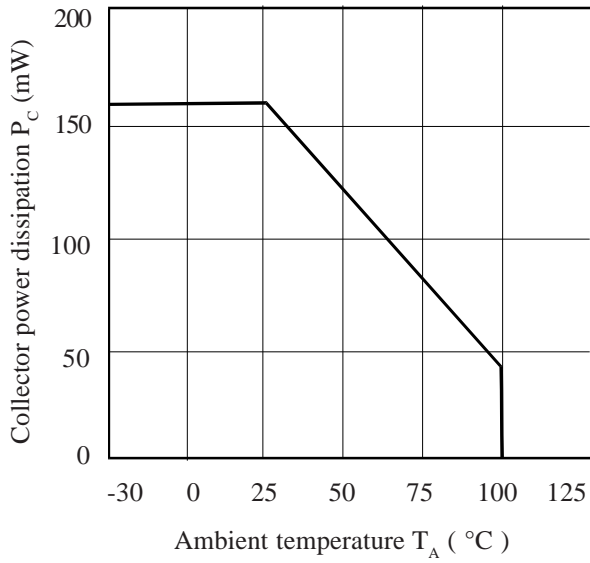
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )		1.2	1.5	V	$I_F = 10\text{mA}$
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$	$V_R = 6\text{V}$
Output	Collector-emitter Breakdown ( $BV_{CE0}$ ) (Note 2)	30			V	$I_C = 1\text{mA}$
	Collector-base Breakdown ( $BV_{CBO}$ )	70			V	$I_C = 100\mu\text{A}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			V	$I_E = 10\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ )			50	nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (CTR)	100			%	$10\text{mA } I_F, 10\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.3	V	$10\text{mA } I_F, 0.5\text{mA } I_C$
	Input to Output Isolation Voltage $V_{ISO}$	5300 7500			$V_{RMS}$ $V_{PK}$	See note 1 See note 1
	Input-output Isolation Resistance $R_{ISO}$	$5 \times 10^{10}$			$\Omega$	$V_{IO} = 500\text{V}$ (note 1)
	Output Rise Time $t_r$ Output Fall Time $t_f$		2 2		$\mu\text{s}$ $\mu\text{s}$	$V_{CC} = 5\text{V}, I_F = 10\text{mA}$ $R_L = 75\Omega$ (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.

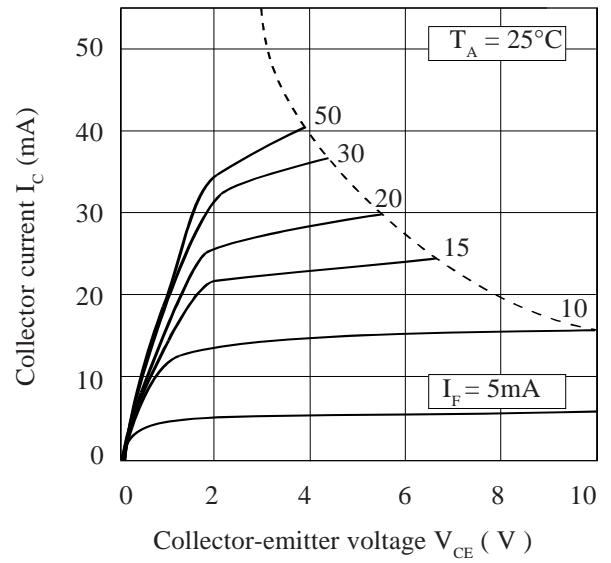


**FIG 1**

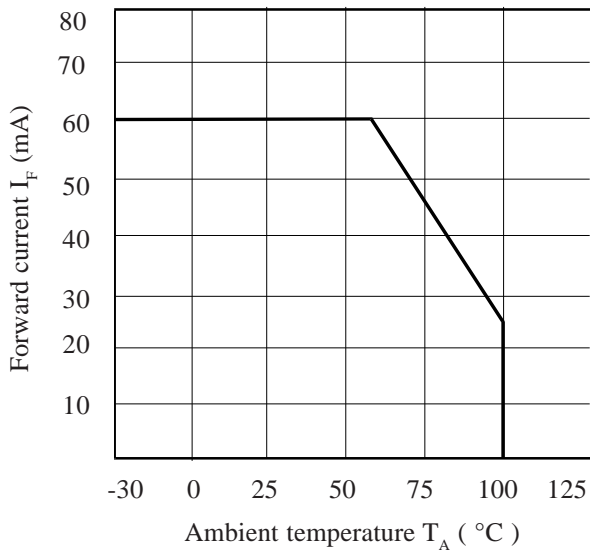
**Collector Power Dissipation vs. Ambient Temperature**



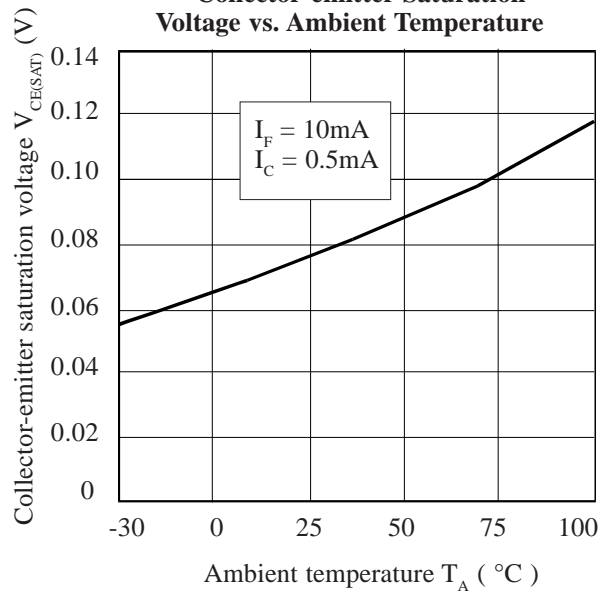
**Collector Current vs. Collector-emitter Voltage**



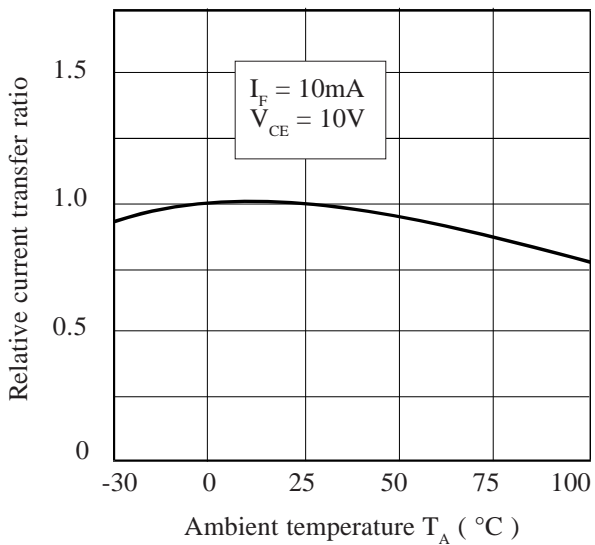
**Forward Current vs. Ambient Temperature**



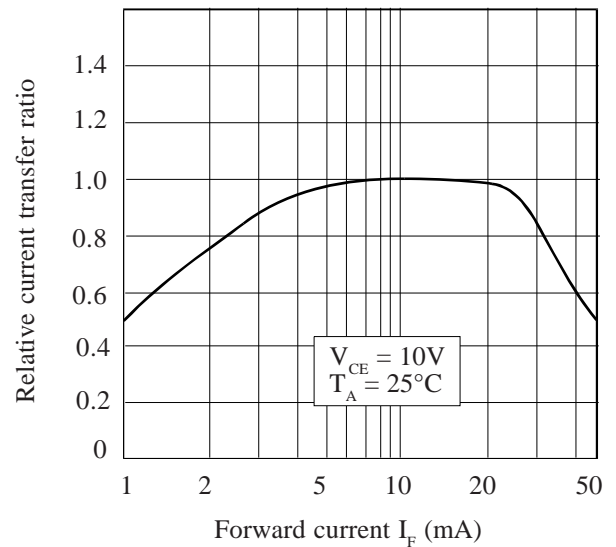
**Collector-emitter Saturation Voltage vs. Ambient Temperature**



**Relative Current Transfer Ratio vs. Ambient Temperature**



**Relative Current Transfer Ratio vs. Forward Current**



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