

4N29F, 4N30F, 4N31F,  
4N32F,4N33F



# ISOCOM

COMPONENTS

## NON BASE LEAD OPTICALLY COUPLED ISOLATOR PHOTODARLINGTON OUTPUT



### APPROVALS

- UL recognised, File No. E91231  
Package Code " SS "
- Available in 3 lead forms : -
  - STD
  - G form
  - SMD approved to CECC 00802

### DESCRIPTION

The 4N29F,4N30F,4N31F,4N32F,4N33F series of optically coupled isolators consist of an infrared light emitting diode and NPN silicon photodarlington in a standard 6pin dual in line plastic package with the base pin unconnected.

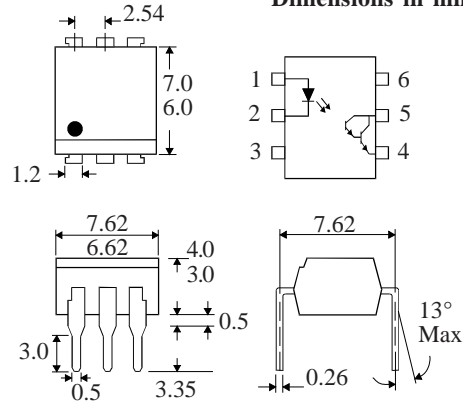
### FEATURES

- 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
- High Isolation Voltage (5.3kV<sub>RMS</sub>, 7.5kV<sub>PK</sub>)
- Basepin unconnected for improved noise immunity in high EMI environment
- Custom electrical selections available

### APPLICATIONS

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

### 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

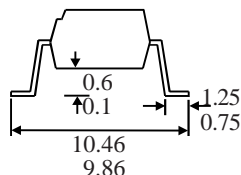
### OUTPUT TRANSISTOR

Collector-emitter Voltage  $V_{CEO}$  \_\_\_\_\_ 80V  
 Emitter-collector Voltage  $V_{ECO}$  \_\_\_\_\_ 6V  
 Collector Current \_\_\_\_\_ 80mA  
 Power Dissipation \_\_\_\_\_ 150mW

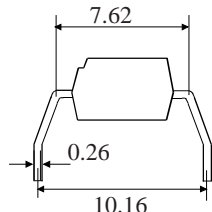
### POWER DISSIPATION

Total Power Dissipation \_\_\_\_\_ 170mW  
 (derate linearly 3.3mW/°C above 25°C)

### OPTION SM SURFACE MOUNT



### OPTION G



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**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	$\mu\text{A}$	$V_R = 4\text{V}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ )	30			V	$I_C = 1\text{mA}$ (note 2)
	Emitter-collector Breakdown ( $BV_{ECO}$ )	5			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ )			1	$\mu\text{A}$	$V_{CE} = 10\text{V}$
Coupled	Output Collector Current ( $I_C$ ) (Note 2)					
	4N32, 4N33	50			mA	$10\text{mA } I_F, 10\text{V } V_{CE}$
	4N29, 4N30	10			mA	$10\text{mA } I_F, 10\text{V } V_{CE}$
	4N31	5			mA	$10\text{mA } I_F, 10\text{V } V_{CE}$
	Collector-emitter Saturation Voltage					
	4N29, 4N30, 4N32, 4N33			1.0	V	$8\text{mA } I_F, 2\text{mA } I_C$
	4N31			1.2	V	$8\text{mA } I_F, 2\text{mA } I_C$
Input to Output Isolation Voltage $V_{ISO}$	5300				$V_{RMS}$	(note 1)
	7500				$V_{PK}$	(note 1)
Input-output Isolation Resistance $R_{ISO}$		$10^{11}$			$\Omega$	$V_{IO} = 500\text{V}$ (note 1)
Response Time (Rise), $t_r$		60			$\mu\text{s}$	$V_{CE} = 2\text{V}, I_C = 10\text{mA},$
Response Time (Fall), $t_f$		53			$\mu\text{s}$	$R_L = 100\Omega$ , 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.

**FIGURE 1**

