

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.

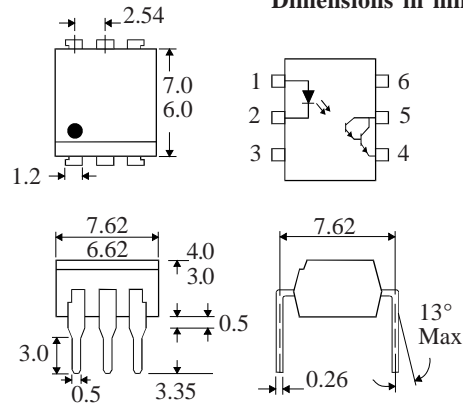
FEATURES

- 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 ($5.3kV_{RMS}$, $7.5kV_{PK}$)
- 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

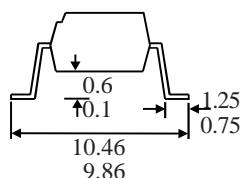
OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 80V
 Emitter-collector Voltage BV_{ECO} _____ 6V
 Collector Current _____ 80mA
 Power Dissipation _____ 150mW

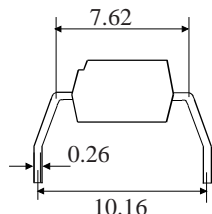
POWER DISSIPATION

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

OPTION SM SURFACE MOUNT



OPTION G



ISOCOM COMPONENTS LTD

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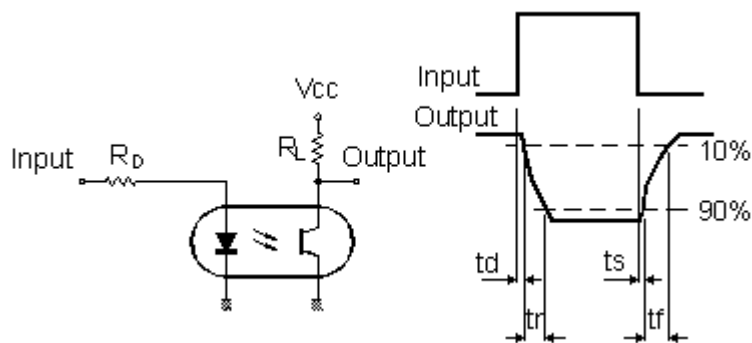
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

| 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 | μA | $V_R = 4\text{V}$ |
| 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 | μA | $V_{CE} = 10\text{V}$ |
| 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 7500 | | | | V_{RMS} V_{PK} | (note 1) (note 1) |
| Input-output Isolation Resistance R_{ISO} | | | 10^{11} | | Ω | $V_{IO} = 500\text{V}$ (note 1) |
| Response Time (Rise), t_r | | | 60 | | μs | $V_{CE} = 2\text{V}, I_C = 10\text{mA},$ $R_L = 100\Omega$, fig.1 |
| Response Time (Fall), t_f | | | 53 | | 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.

FIGURE 1



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