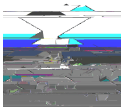
6-pin General purpose phototransistor Optocouplers

4N35

PDIP6
M TYPE
CASE 646CG

PDIP6
STD TYPE
CASE 646CU



PDIP6
S TYPE
CASE 646CV

Description

The general purpose optocouplers consist of a gallium arsenide infrared emitting diode driving a silicon phototransistor in a standard plastic 6−pin dual−in−line package.

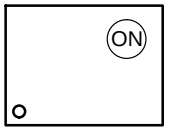
Features

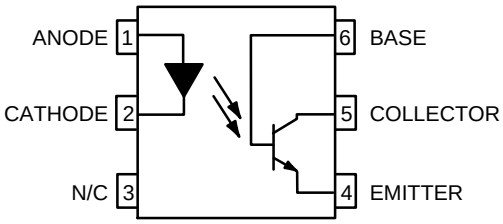
- Minimum Current Transfer Ratio at I_F = 10 mA, V_{CE} = 10 V:
- 100% for 4N35
- Safety and Regulatory Approvals:
  - UL1577, 5,000 VAC_{RMS} for 1 Minute
  - DIN−EN/IEC60747−5−5, 850 V Peak Working Insulation Voltage (Pending)

Applications

- Power Supply Regulators
- Digital Logic Inputs
- Microprocessor Inputs

MARKING DIAGRAM





ORDERING INFORMATION

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this data sheet.

This document contains information on a product under development. **onsemi** reserves the right to change or discontinue this product without notice.

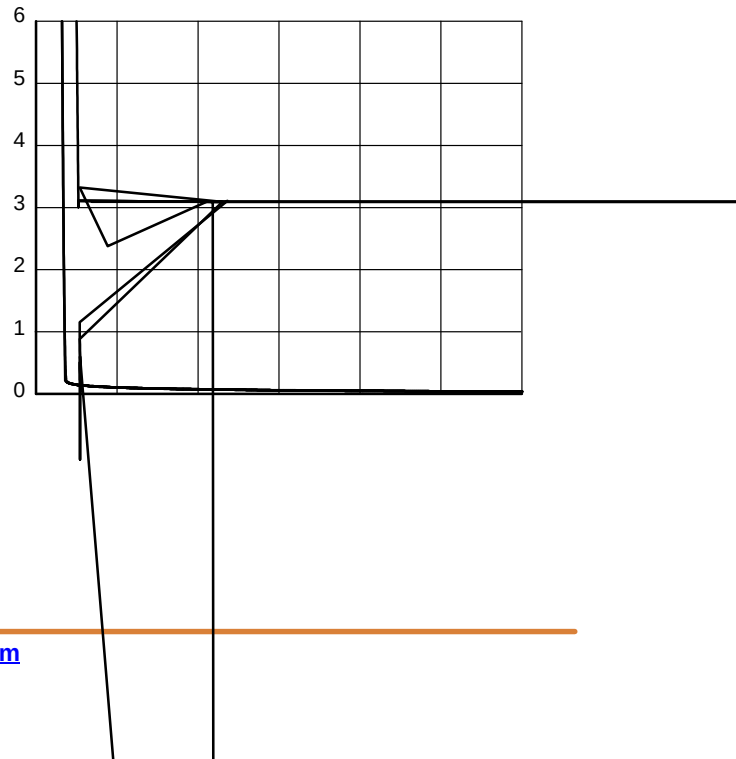
SAFETY AND INSULATION RATINGS (As per DIN EN/IEC 60747−5−5, this optocoupler is suitable for “safe electrical insulation” only within the safety limit data. Compliance with the safety ratings shall be ensured by means of protective circuits.)

Parameter		Characteristics
Installation Classifications per DIN VDE 0110/1.89 Table 1, For Rated Mains Voltage	<150 V_{RMS}	I–IV

ELECTRICAL CHARACTERISTICS − INDIVIDUAL COMPONENT CHARACTERISTICS (T_A = 25°C unless otherwise noted)

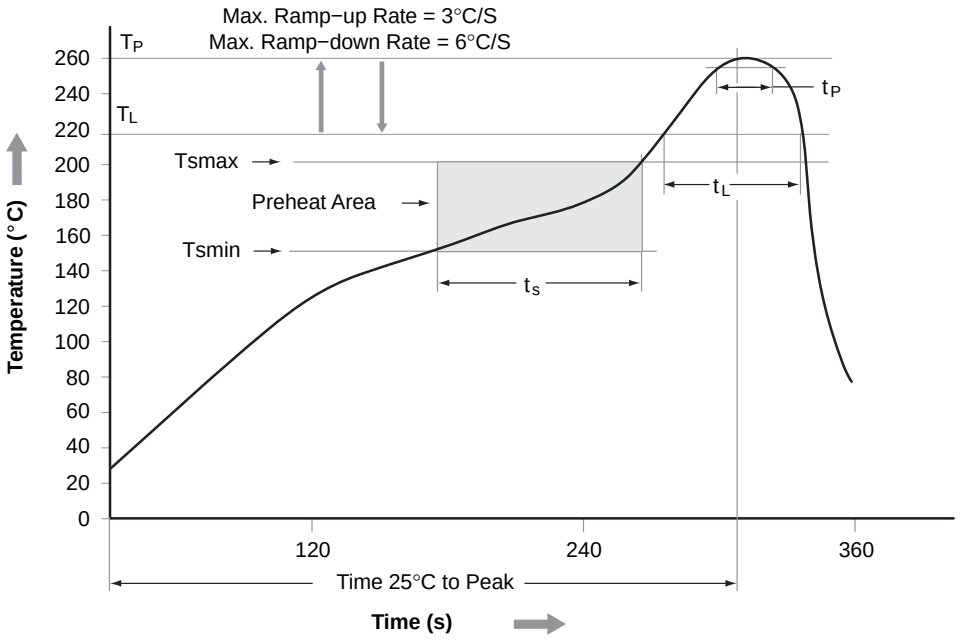
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
EMITTER						
V_F	Input Forward Voltage	I_F = 10 mA	−	1.20	1.50	V
I_R	Reverse Leakage Current	V_R = 6.0 V	−	−	10	μA
C_{in}	Input Capacitance	V = 0, f = 1 MHz	−	30	−	pF
DETECTOR						
BV_{CEO}	Collector−to−Emitter Breakdown Voltage	I_C = 1.0 mA, I_F = 0	80	−	−	V
BV_{CBO}	Collector−to−Base Breakdown Voltage	I_C = 0.1 mA, I_F = 0	80	−	−	V
BV_{ECO}	Emitter−to−Collector Breakdown Voltage	I_E = 0.1 mA, I_F = 0	7	−	−	V
BV_{EBO}	Emitter−to−Base Breakdown Voltage	I_E = 0.1 mA, I_F = 0	7	−	−	V

TYPICAL PERFORMANCE CURVES



4N35

REFLOW PROFILE



Profile Feature	Pb−Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (t_S) from (Tsmin to Tsmax)	60–120 seconds
Ramp−up Rate (t_L to t_P)	3°C/second max.
Liquidous Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60 − 150 seconds
Peak Body Package Temperature	260°C +0°C / –5°C
Time (t_P) within 5°C of 260°C	30 seconds
Ramp−down Rate (T_P to T_L)	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Figure 16. Reflow Profile

ORDERING INFORMATION

Part Number	Package	Shipping†
4N35		

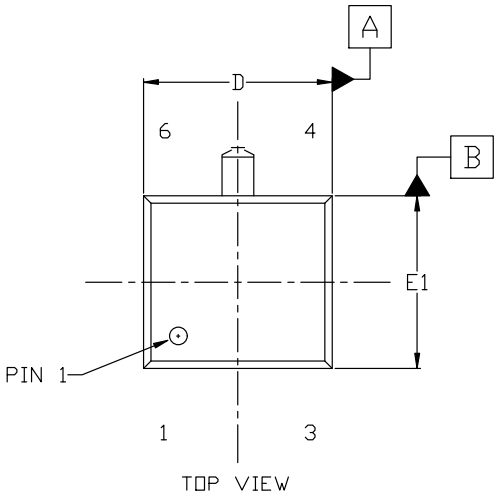
PACKAGE DIMENSIONS

PDIP6 7.12x6.50, 2.54P (M TYPE)

CASE 646CG
ISSUE O042 Tw(M TYPE)

PACKAGE DIMENSIONS

PDIP6 7.12x6.50, 2.54P (STD TYPE)
CASE 646CU
ISSUE O



NOTES:
A) NO STANDARD A