New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

Photon Coupled Isolator 4N35

absolute maximum ratings: (25°C) (unless otherwise specified)

INFRARED EMITTING DIODE

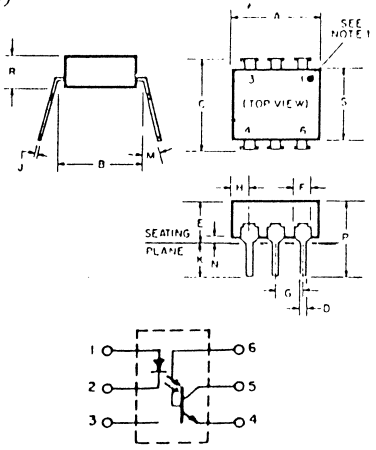
- Power Dissipation — T_A = 25°C — ☆100 — milliwatts
- Power Dissipation — T_C = 25°C — ☆100 — milliwatts
  (T_C indicates collector lead temperature 1/32" from case)
- Forward Current (Continuous) — 60 — milliamps
- Forward Current (Peak) — 3 — ampere
  (Pulse width 1 usec, 300 pps)
- Reverse Voltage — 6 — volts

☆Derate 1.33mW/°C above 25°C

PHOTO-TRANSISTOR

- Power Dissipation — T_A = 25°C — ☆☆300 — milliwatts
- Power Dissipation — T_C = 25°C — ☆☆☆500 — milliwatts
  (T_C indicates collector lead temperature 1/32" from case)
- V_{CEO} — 30 — volts
- V_{CBO} — 70 — volts
- V_{ECO} — 7 — volts
- Collector Current (Continuous) — 100 — milliamps

☆☆Derate 4.0mW/°C above 25°C
☆☆☆Derate 6.7mW/°C above 25°C



SYMBOL	INCH MIN.	INCH MAX.	MILLIMETER MIN.	MILLIMETER MAX.
A	.330	.350	8.38	8.89
B	.300	REF	7.62	REF
C		.340		8.64
D	.016	.020	.406	.508
F		.200		5.08
F	.040	.070	1.01	1.78
G	.090	.110	2.29	2.79
H		.085		2.16
J	.008	.012	.203	.305
K	.100		2.54	
M		15°		15°
N	.015		.381	
P		.375		9.53
R	.100	.185	2.54	4.70
S	.225	.280	5.71	7.12

NOTES
1. There shall be a permanent indication of pin1 orientation in the quadrant adjacent terminal 1.
2. Installed position lead centers.
3. Overall installed dimension.
4. These measurements are made from the seating plane.
5. Four places.

TOTAL DEVICE

- Storage Temperature -55 to 150°C
- Operating Temperature -55 to 100°C.
- Lead Soldering Time (at 260°C) 10 seconds.
- Relative Humidity 85%@85°C
- Input to Output Isolation Voltage
  4N35 — 2500 $V_{(RMS)}$ — 3550 $V_{(peak)}$

• Indicates JEDEC registered values

individual electrical characteristics (25°C) (unless otherwise specified)

INFRARED EMITTING DIODE	SYMBOL	MIN.	MAX.	UNITS
• Forward Voltage (I_F = 10 mA)	V_F	.8	1.5	volts
• Forward Voltage (I_F = 10 mA) T_A = -55°C	V_F	.9	1.7	volts
• Forward Voltage (I_F = 10 mA) T_A = +100°C	V_F	.7	1.4	volts
• Reverse Current (V_R = 6V)	I_R	–	10	microamps
Capacitance (V=O, f=1 MHz)	C_J		100	picofarads

PHOTO-TRANSISTOR	SYMBOL	MIN.	TYP.	MAX.	UNITS
• Breakdown Voltage (I_C = 10 mA, I_F = O)	$V_{(BR)\ CEO}$	30	–	–	volts
• Breakdown Voltage (I_C = 100uA, I_F = O)	$V_{(BR)\ CBO}$	70	–	–	volts
• Breakdown Voltage (I_F = 100uA, I_F = O)	$V_{(BR)\ ECO}$	7	–	–	volts
Collector Dark Current (V_{CE} = 10V, I_F = O)	I_{CEO}	–	5	50	nanoamps
• Collector Dark Current (V_{CE} = 30V, I_F = O) T_A = 100°C	I_{CEO}	–		500	microamps
Capacitance (V_{CE} = 10V, f = 1MHz)	C_{CE}	–	2	–	picofarads

coupled electrical characteristics (25°C) (unless otherwise specified)

	MIN.	TYP.	MAX.	UNITS
* DC Current Transfer Ratio (I_F = 10mA, V_{CE} = 10V)	100	–	–	%
* DC Current Transfer Ratio (I_F = 10mA, V_{CE} = 10V) T_A = -55°C	40	–	–	%
* DC Current Transfer Ratio (I_F = 10mA, V_{CE} = 10V) T_A = +100°C	40	–	–	%
* Saturation Voltage–Collector To Emitter (I_F = 10mA, I_C = 0.5mA)	–	–	0.3	volts
* Input to Output Isolation Current (Pulse Width = 8 msec) (See Note 1) Input to Output Voltage = 3550 $V_{(peak)}$ 4N35	–	–	100	microamps
* Input to Output Resistance (Input to Output Voltage = 500V - See Note 1)	100	–	–	gigaohms
* Input to Output Capacitance (Input to Output Voltage = 0, f = 1MHz - See Note 1)	–	–	2.5	picofarads
* Turn on Time – t_{on} (V_{CC} = 10V, I_C = 2MA, R_L = 100Ω) (See Figure 1)	–	5	10	microseconds
* Turn off Time – t_{off} (V_{CC} = 10V, I_C = 2MA, R_L = 100Ω) (See Figure 1)	–	5	10	microseconds

Note 1: Tests of input to output isolation current resistance, and capacitance are performed with the input terminals (diode) shorted together and the output terminals (transistor) shorted together

* Indicates JEDEC registered values.