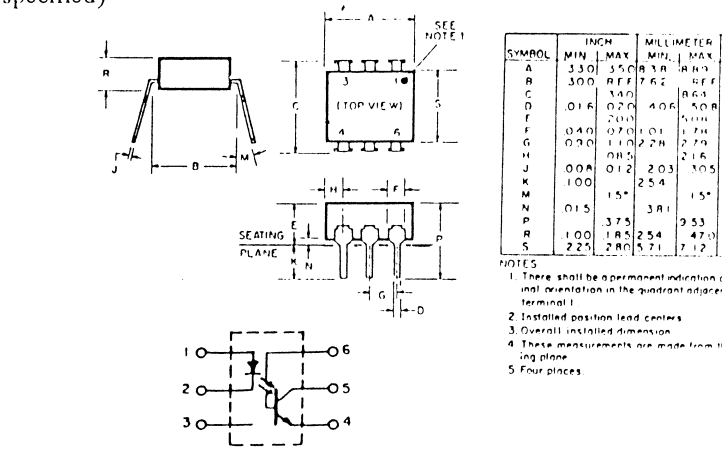


# Photon Coupled Isolator 4N35

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

INFRARED EMITTING DIODE			
• Power Dissipation	$T_A = 25^\circ\text{C}$	☆100	milliwatts
• Power Dissipation	$T_C = 25^\circ\text{C}$	☆100	milliwatts
(T <sub>C</sub> 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	$T_A = 25^\circ\text{C}$	☆☆300	milliwatts
• Power Dissipation	$T_C = 25^\circ\text{C}$	☆☆500	milliwatts
(T <sub>C</sub> indicates collector lead temperature 1/32" from case)			
• V <sub>CEO</sub>		30	volts
• V <sub>CBO</sub>		70	volts
• V <sub>ECO</sub>		7	volts
• Collector Current (Continuous)		100	milliamps
☆☆Derate 4.0mW/°C above 25°C			
☆☆☆Derate 6.7mW/°C above 25°C			

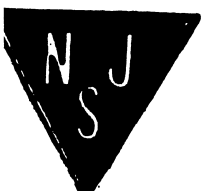


TOTAL DEVICE	
• Storage Temperature	-55 to 150°C
• Operating Temperature	-55 to 100°C
• Lead Soldering Time (at 260°C)	10 seconds.
• Relative Humidity	85%@85°C
• Input to Output Isolation Voltage	
4N35	2500 V <sub>(RMS)</sub> 3550 V <sub>(peak)</sub>

\* Indicates JEDEC registered values

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

INFRARED EMITTING DIODE					PHOTO-TRANSISTOR					
SYMBOL	MIN.	MAX.	UNITS	SYMBOL	MIN.	TYP.	MAX.	UNITS		
• Forward Voltage (I <sub>F</sub> = 10 mA)	V <sub>F</sub>	.8	1.5	volts	• Breakdown Voltage (I <sub>C</sub> = 10 mA, I <sub>F</sub> = 0)	V <sub>(BR) CEO</sub>	30	-	-	volts
• Forward Voltage (I <sub>F</sub> = 10 mA, T <sub>A</sub> = -55°C)	V <sub>F</sub>	.9	1.7	volts	• Breakdown Voltage (I <sub>C</sub> = 100uA, I <sub>F</sub> = 0)	V <sub>(BR) CBO</sub>	70	-	-	volts
• Forward Voltage (I <sub>F</sub> = 10 mA, T <sub>A</sub> = +100°C)	V <sub>F</sub>	.7	1.4	volts	• Breakdown Voltage (I <sub>F</sub> = 100uA, I <sub>F</sub> = 0)	V <sub>(BR) ECO</sub>	7	-	-	volts
• Reverse Current (V <sub>R</sub> = 6V)	I <sub>R</sub>	-	10	microamps	Collector Dark Current (V <sub>CE</sub> = 10V, I <sub>F</sub> = 0)	I <sub>CEO</sub>	-	5	50	nanoamps
Capacitance (V=0, f=1 MHz)	C <sub>J</sub>		100	picofarads	• Collector Dark Current (V <sub>CE</sub> = 30V, I <sub>F</sub> = 0, T <sub>A</sub> = 100°C)	I <sub>CEO</sub>	-		500	microamps
					Capacitance (V <sub>CE</sub> = 10V, f = 1MHz)	C <sub>CE</sub>	-	2	-	picofarads



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

	MIN.	TYP.	MAX.	UNITS
• DC Current Transfer Ratio ( $I_F = 10\text{mA}$ , $V_{CE} = 10\text{V}$ )	100	—	—	%
• DC Current Transfer Ratio ( $I_F = 10\text{mA}$ , $V_{CE} = 10\text{V}$ ) $T_A = -55^\circ\text{C}$	40	—	—	%
• DC Current Transfer Ratio ( $I_F = 10\text{mA}$ , $V_{CE} = 10\text{V}$ ) $T_A = +100^\circ\text{C}$	40	—	—	%
• Saturation Voltage—Collector To Emitter ( $I_F = 10\text{mA}$ , $I_C = 0.5\text{mA}$ )	—	—	0.3	volts
• Input to Output Isolation Current (Pulse Width = 8 msec) (See Note 1) Input to Output Voltage = 3550 V <sub>(peak)</sub> 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, $f = 1\text{MHz}$ - See Note 1)	—	—	2.5	picofarads
• Turn on Time – $t_{on}$ ( $V_{CC} = 10\text{V}$ , $I_C = 2\text{MA}$ , $R_L = 100\Omega$ ) (See Figure 1)	—	5	10	microseconds
• Turn off Time – $t_{off}$ ( $V_{CC} = 10\text{V}$ , $I_C = 2\text{MA}$ , $R_L = 100\Omega$ ) (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.