CEL

NEC's HIGH ISOLATION VOLTAGE SINGLE TRANSISTOR TYPE PHOTOCOUPLER SERIES

PS2501A
PS2501AL-1

FEATURES

- **HIGH ISOLATION VOLTAGE**
  BV: 5000 $V_{r.m.s}$
- **UL AWAITING APPROVAL**
- **ORDERING NUMBER OF TAPING PRODUCT**
  PS2501AL-1-E3, E4, F3, F4

DESCRIPTION

NEC's PS2501A-1 is an optically coupled isolator containing a GaAs light emitting diode and an NPN silicon phototransistor.

NEC's PS2501A-1 is in a plastic DIP (Dual In-line Package) and the PS2501AL-1 are lead bent type (Gull-wing) for surface mount.

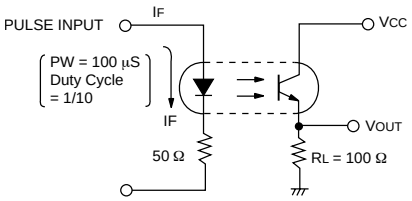
APPLICATIONS

- **POWER SUPPLY**
- **TELEPHONE / FAX**
- **FACTORY AUTOMATION**
- **PROGRAMMABLE LOGIC CONTROLLER**

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

PART NUMBER PACKAGE OUTLINE		PS2501A-1, PS2501AL-1			
SYMBOLS	**PARAMETERS AND CONDITIONS**	**UNITS**	**MIN**	**TYP**	**MAX**
DIODE					
V_F	Forward Voltage, I_F = 10 mA	V		1.1	1.4
I_R	Reverse Current, V_R = 5 V	μA			5
C_t	Terminal Capacitance, V= 0, f = 1.0 MHz	pF		10	
TRANSISTOR					
I_{CEO}	Collector to Emitter, Vce = 70 V, I_F = 0	nA			100
COUPLED					
CTR	Current Transfer Ratio (I_C/I_F) [1], I_F= 5 mA, V_{CE} = 5 V	%	50		400
$V_{CE\ (sat)}$	Collector Saturation Voltage, I_F = 10 mA, I_C = 2 mA	V		0.13	0.3
R_{I-O}	Isolation Resistance at V_{I-O} = 1.0 kVDC	Ω	10^{11}		
C_{I-O}	Isolation Capacitance at V = 0 V, f = 1.0 MHz	pF		0.4	
t_r	Rise Time [2], V_{CC} = 10 V, I_C = 2 mA, R_L = 100 Ω	μs		5	
t_f	Fall Time [2], V_{CC} = 10 V, I_C = 2 mA, R_L = 100 Ω			7	

Notes:
1. CTR rank
   N: 50 to 400 %
   H: 80 to 160 %
   W: 130 to 260 %
   Q: 100 to 200%
   L: 200 to 400 %
2.Test Circuit for Switching



ABSOLUTE MAXIMUM RATINGS[1] (T_A = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
DIODE			
V_R	Reverse Voltage	V	6
I_F	Forward Current	mA	30
ΔP_D/°C	Power Dissipation Derating	mW/°C	1.5
P_D	Power Dissipation	mW	150
$I_{F\ (PEAK)}$	Peak Forward Current[2]	A	0.5
TRANSISTOR			
V_{CEO}	Collector to Emitter Voltage	V	70
V_{ECO}	Emitter to Collector Voltage	V	5
I_C	Collector Current	mA	30
ΔP_C/°C	Power Dissipation Derating	mW/°C	1.5
P_C	Power Dissipation	mW	150
COUPLED			
BV	Isolation Voltage[3]	$V_{r.m.s.}$	5000
T_A	Operating Ambient Temp.	°C	-55 to +100
T_{STG}	Storage Temperature	°C	-55 to +150

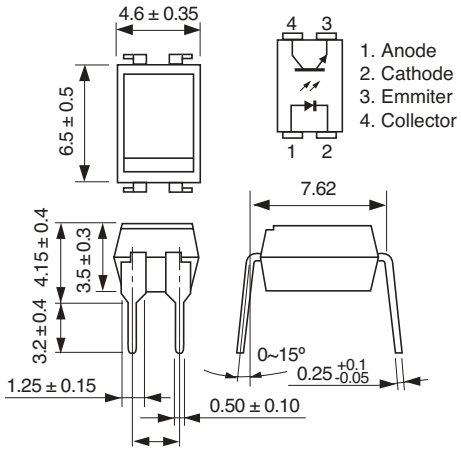
Notes:
1. Operation in excess of any one of these parameters may result in permanent damage.
2. PW = 100 μs, Duty Cycle = 1 %.
3. AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input and ouput.

ORDERING INFORMATION

PART NUMBER	PACKAGE	PACKAGE STYLE
PS2501A-1	4-PIN DIP	Magazine case 100 pcs
PS2501AL-1		
PS2501AL-1-E3	4-PIN DIP	Embossed tape 1000 pcs/reel
PS2501AL-1-E4		
PS2501AL-1-F3	4-PIN DIP	Embossed tape 2000 pcs/reel
PS2501AL-1-F4		

OUTLINE DIMENSIONS (Units in mm) **DIP TYPE**

PS2501A-1



OUTLINE DIMENSIONS (Units in mm) **LEAD BENDING TYPE**

PS2501A-1