



**HIGH DENSITY MOUNTING  
 PHOTOTRANSISTOR  
 OPTICALLY COUPLED ISOLATORS**

**APPROVALS**

- UL recognised, File No. E91231
- 'X' SPECIFICATION APPROVALS
- VDE 0884 in 3 available lead form : -  
 - STD  
 - G form  
 - SMD approved to CECC 00802
- Certified to EN60950 by the following  
 Test Bodies :-  
 Nemko - Certificate No. P01102465  
 Fimko - Certificate No. FI18162  
 Semko - Reference No. 0202041/01-25  
 Demko - Certificate No. 311161-01
- BSI approved - Certificate No. 8001

**DESCRIPTION**

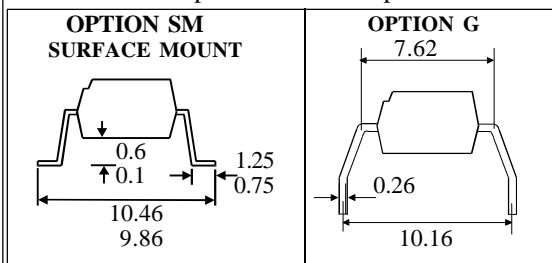
The PS2501-1, PS2501-2, PS2501-4 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

**FEATURES**

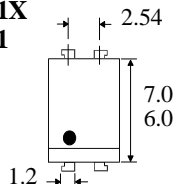
- Options :-  
 10mm lead spread - add G after part no.  
 Surface mount - add SM after part no.  
 Tape & reel - add SMT&R after part no.
- High Current Transfer Ratio ( 80% min)
- High Isolation Voltage ( 5.3kV<sub>RMS</sub>, 7.5kV<sub>PK</sub> )
- High BV<sub>CEO</sub> ( 80Vmin )
- All electrical parameters 100% tested
- Custom electrical selections available

**APPLICATIONS**

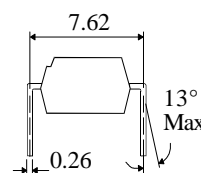
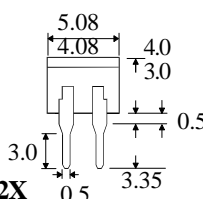
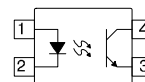
- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances



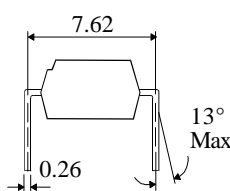
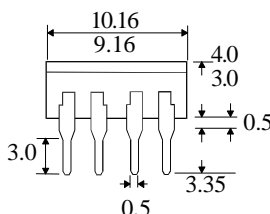
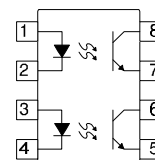
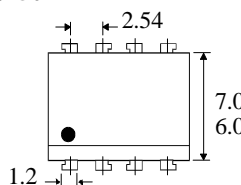
**PS2501-1X  
 PS2501-1**



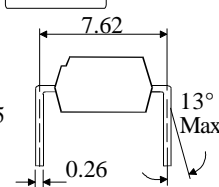
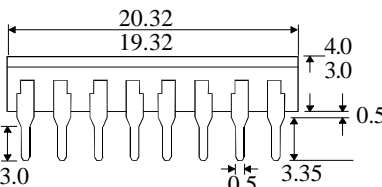
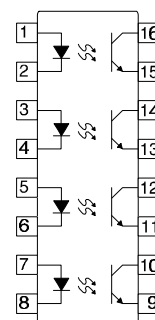
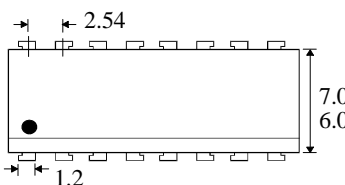
**Dimensions in mm**



**PS2501-2X  
 PS2501-2**



**PS2501-4X  
 PS2501-4**



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**ABSOLUTE MAXIMUM RATINGS**  
(25°C unless otherwise specified)

Storage Temperature	-55°C to + 125°C
Operating Temperature	-30°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
Power Dissipation	150mW

**POWER DISSIPATION**

Total Power Dissipation	200mW
(derate linearly 2.67mW/°C above 25°C)	

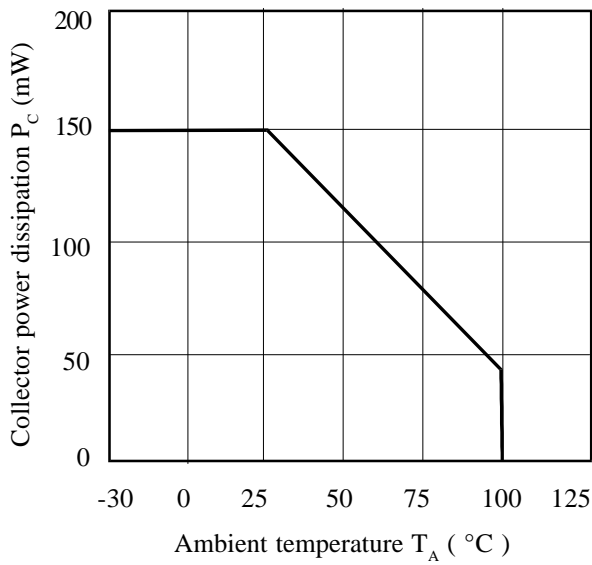
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )		1.2	1.4	V	$I_F = 20\text{mA}$
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$	$V_R = 4\text{V}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) ( Note 2 )	80			V	$I_C = 1\text{mA}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ )			100	nA	$V_{CE} = 20\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2) PS2501-1,PS2501-2,PS2501-4 GR	80 100		600 300	% %	$5\text{mA } I_F, 5\text{V } V_{CE}$ $5\text{mA } I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.3	V	$10\text{mA } I_F, 2\text{mA } I_C$
	Input to Output Isolation Voltage $V_{ISO}$	5300 7500			$V_{RMS}$ $V_{PK}$	See note 1 See note 1
	Input-output Isolation Resistance $R_{ISO}$	$5 \times 10^{10}$			$\Omega$	$V_{IO} = 500\text{V}$ (note 1)
	Output Rise Time tr		4		$\mu\text{s}$	$V_{CE} = 2\text{V},$
	Output Fall Time tf		3		$\mu\text{s}$	$I_C = 2\text{mA}, R_L = 100\Omega$

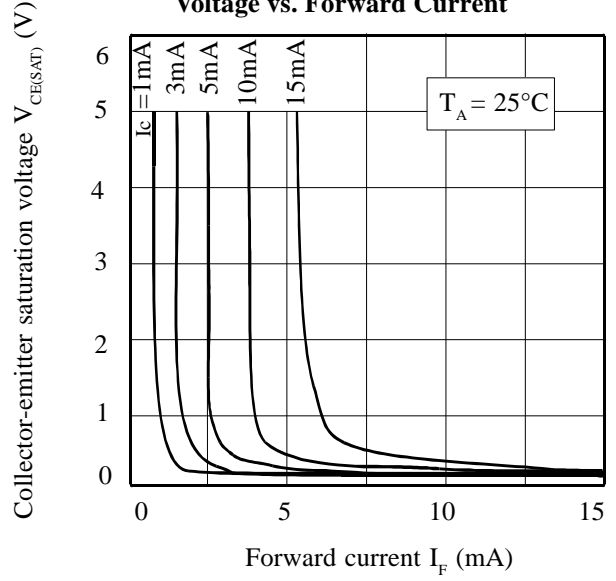
Note 1 Measured with input leads shorted together and output leads shorted together.

Note 2 Special Selections are available on request. Please consult the factory.

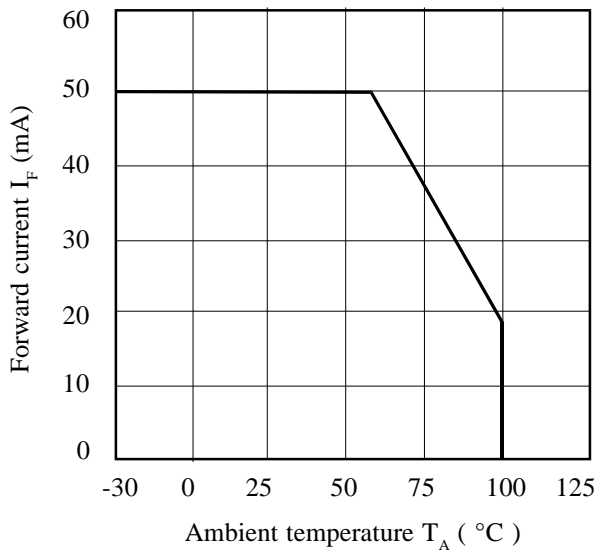
**Collector Power Dissipation vs. Ambient Temperature**



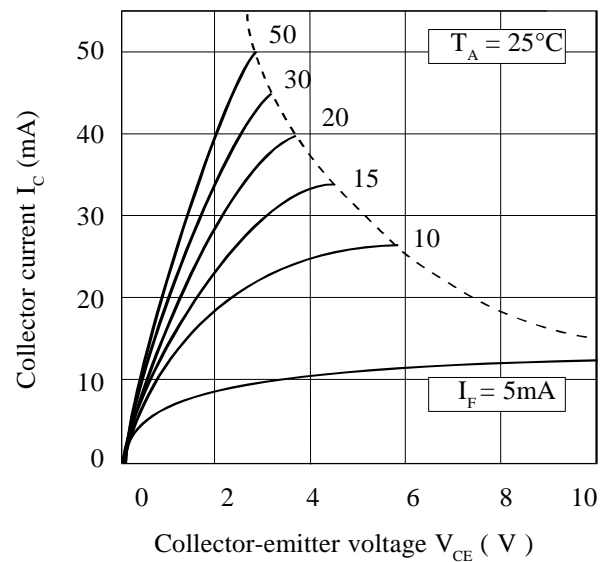
**Collector-emitter Saturation Voltage vs. Forward Current**



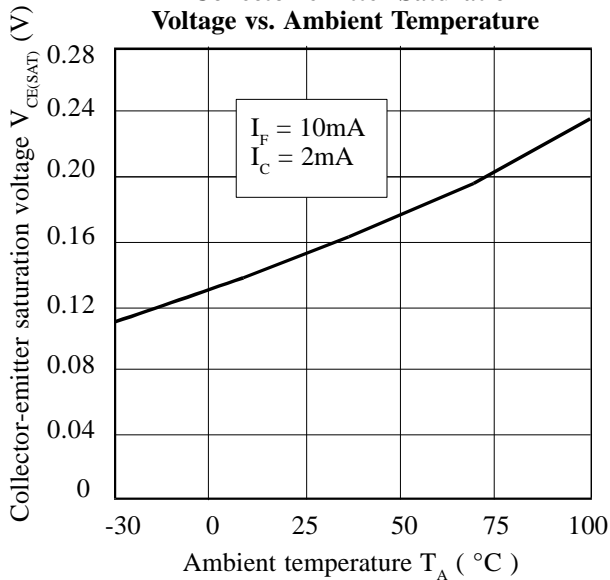
**Forward Current vs. Ambient Temperature**



**Collector Current vs. Collector-emitter Voltage**



**Collector-emitter Saturation Voltage vs. Ambient Temperature**



**Current Transfer Ratio vs. Forward Current**

