



# THE DATASHEET OF PS2505-4X



PS2505-1X, PS2505-2X, PS2505-4X  
 PS2505-1, PS2505-2, PS2505-4



**HIGH DENSITY A.C. INPUT  
 PHOTOTRANSISTOR OPTICALLY  
 COUPLED ISOLATORS**

**APPROVALS**

- UL recognised, File No. E91231  
 Package code "EE "

**'X' SPECIFICATION APPROVALS**

- VDE 0884 in 3 available lead form : -  
 - STD  
 - G form  
 - SMD approved to CECC 00802
- Certified to EN60950 by  
 Nemko - Certificate No. P01102465

**DESCRIPTION**

The PS2505-1, PS2505-2, PS2505-4 series of optically coupled isolators consist of two infrared light emitting diodes connected in inverse parallel and NPN silicon photo transistors in space efficient dual in line plastic packages.

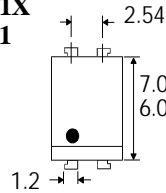
**FEATURES**

- 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 Isolation Voltage ( $5.3kV_{RMS}, 7.5kV_{PK}$ )
- AC or polarity insensitive input
- All electrical parameters 100% tested
- Custom electrical selections available

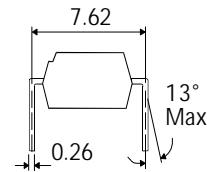
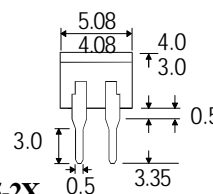
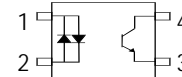
**APPLICATIONS**

- Computer terminals
- Industrial systems controllers
- Telephone sets, Telephone exchangers
- Signal transmission between systems of different potentials and impedances

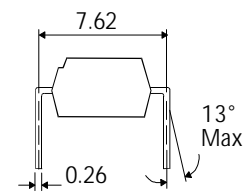
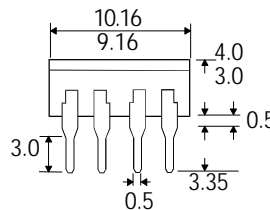
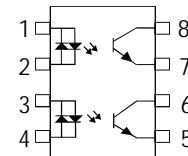
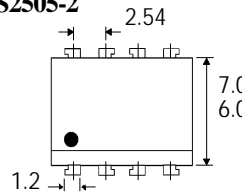
**PS2505-1X  
 PS2505-1**



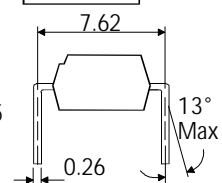
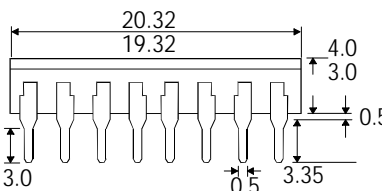
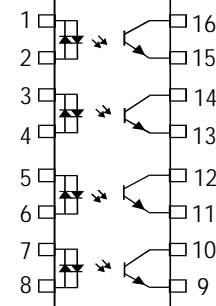
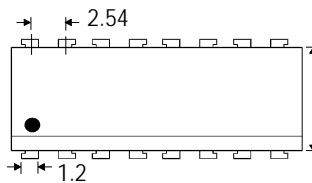
**Dimensions in mm**



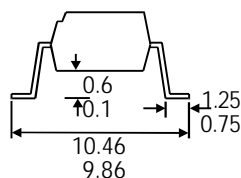
**PS2505-2X  
 PS2505-2**



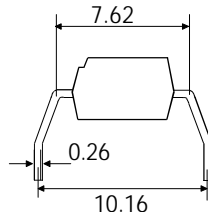
**PS2505-4X  
 PS2505-4**



**OPTION SM  
 SURFACE MOUNT**



**OPTION G**



**ISOCOM COMPONENTS LTD**

Unit 25B, Park View Road West,  
 Park View Industrial Estate, Brenda Road  
 Hartlepool, Cleveland, TS25 1YD  
 Tel: (01429) 863609 Fax :(01429) 863581

**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  
 Power Dissipation ————— 70mW

**OUTPUT TRANSISTOR**

Collector-emitter Voltage  $BV_{CEO}$  ——— 80V  
 Emitter-collector Voltage  $BV_{ECO}$  ——— 6V  
 Collector Current ————— 50mA  
 Power Dissipation ————— 150mW

**POWER DISSIPATION**

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

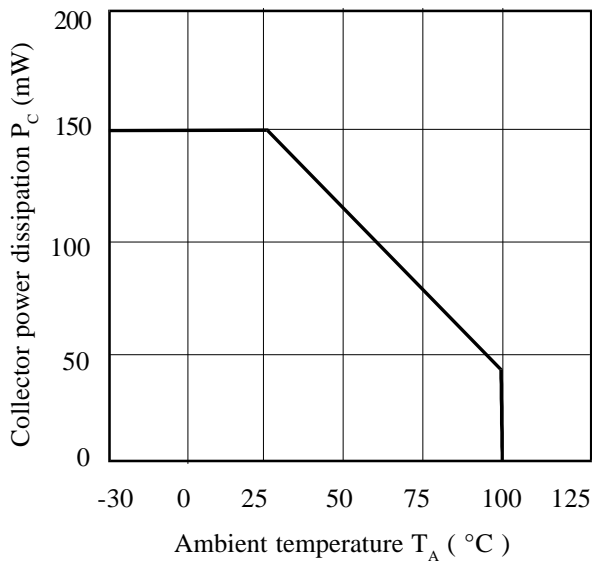
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )		1.2	1.4	V	$I_F = \pm 10\text{mA}$
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) PS2505-1, PS2505-2, PS2505-4	80		600	%	$\pm 5\text{mA} I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.3	V	$\pm 10\text{mA} I_F, 2\text{mA} I_C$
	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 $t_r$ Output Fall Time $t_f$		4 3		$\mu\text{s}$ $\mu\text{s}$	$V_{CE} = 2\text{V},$ $I_C = 2\text{mA}, R_L = 100\Omega$

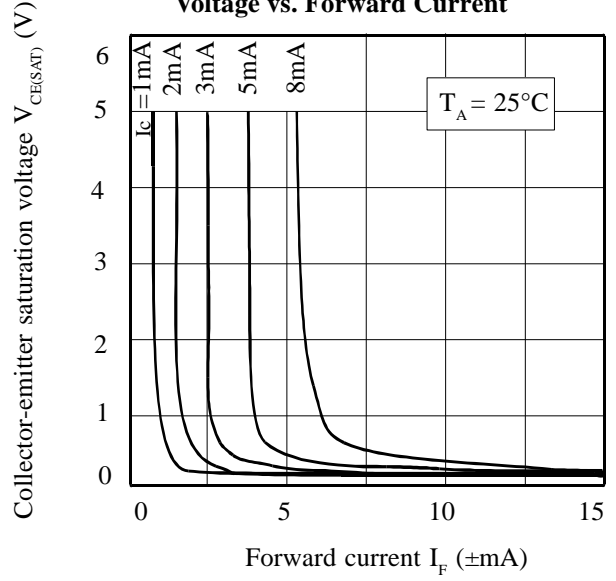
Note 1 Measured with input leads shorted together and output leads shorted together.

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

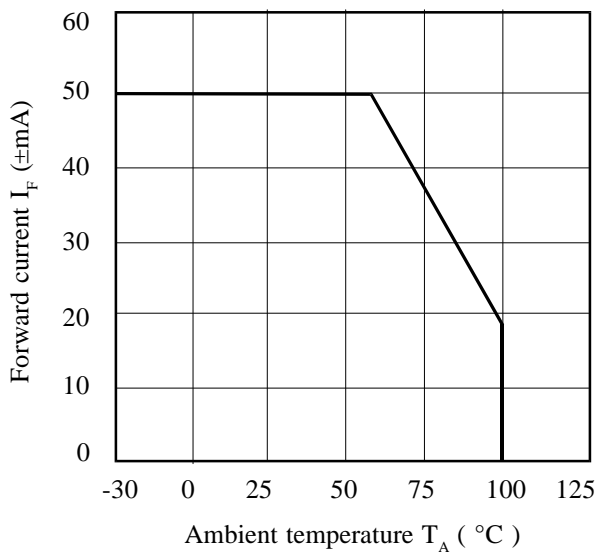
**Collector Power Dissipation vs. Ambient Temperature**



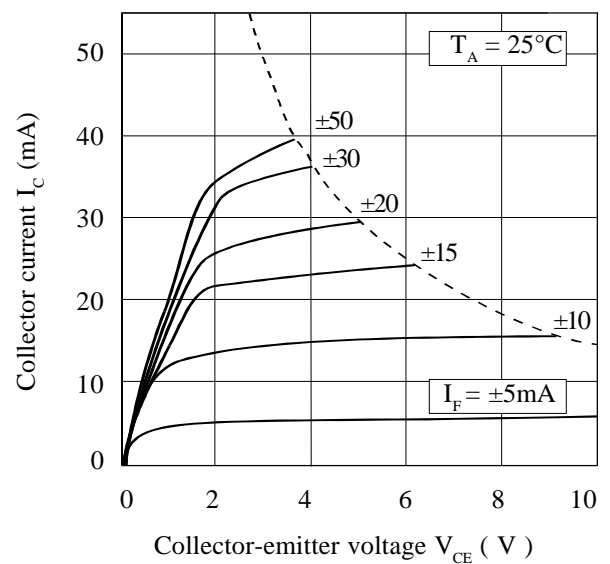
**Collector-emitter Saturation Voltage vs. Forward Current**



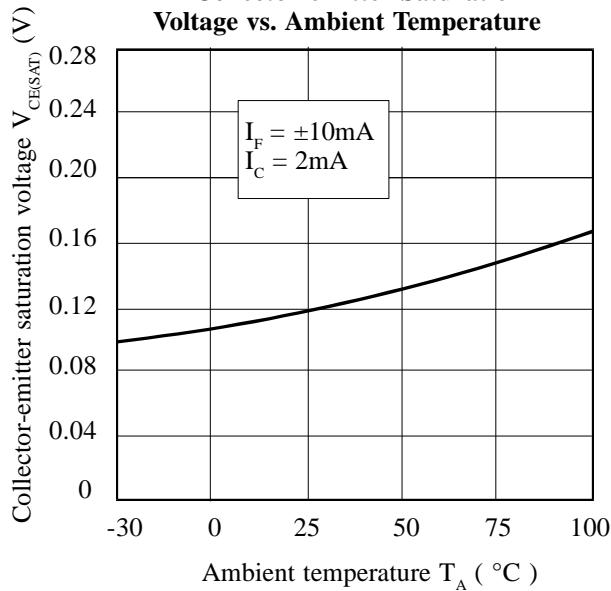
**Forward Current vs. Ambient Temperature**



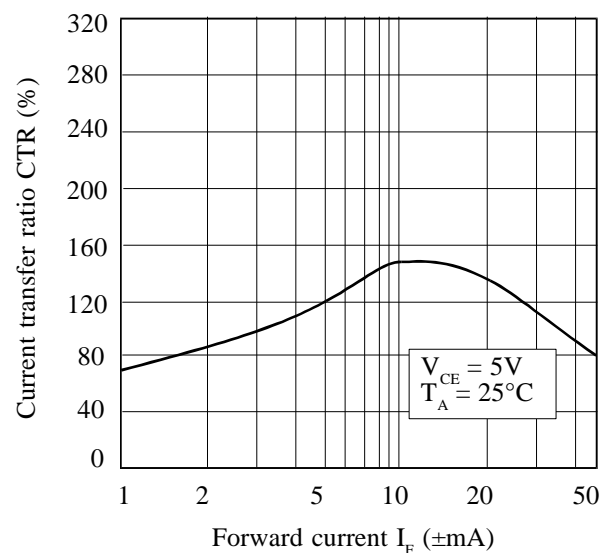
**Collector Current vs. Collector-emitter Voltage**



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




**Current Transfer Ratio vs. Forward Current**



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-  [Isocom Components 2004 LTD Information](#)

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