

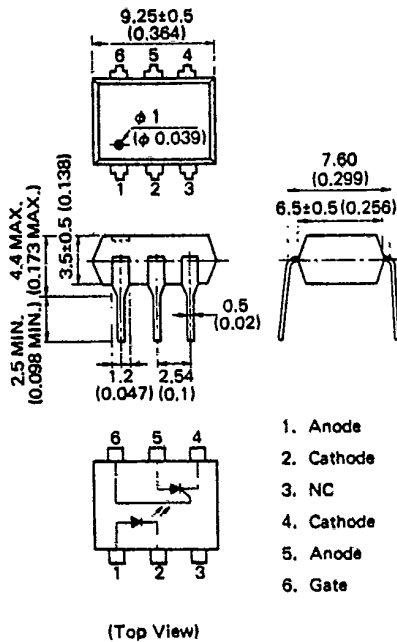
PHOTO SCR COUPLERS PS3001(1), PS3002(1)

PHOTO SCR COUPLER

DESCRIPTION

The PS3001 and PS3002 are optically coupled isolators containing GaAs infrared emitting diode and a PNP silicon photo SCR.

PACKAGE DIMENSIONS in millimeters (inches)



FEATURES

- High Voltage Isolation 2 500 VDC MIN.
- Low Turn on Current 12 mA MAX.
- Plastic dual-in-line package
- High Speed Switching
- Economical, Compact.

APPLICATIONS

- Interface circuit for various instrumentations, control equipments
- Replaceable from a reed relay

ABSOLUTE MAXIMUM RATINGS (Ta=25 °C)

Diode

Reverse Voltage	V _R	6 V.
Forward Current (DC)	I _F	80 mA
Peak Forward Current	I _{FP}	3 A
Power Dissipation	P _D	100 mW

SCR

Peak Off and Reverse Voltage	V _{ORM} , V _{RRM}	PS3001 200 V PS3002 400 V
Direct On-State Current	I _T	300 mA
Peak pulse current *1	I _{TP}	3 A
Peak surge on Current	I _{TSM}	3 A
Power Dissipation	P _{SCR}	350 mW
Isolation Voltage *2	BV	2500 V _{AC}
Storage Temperature	T _{stg}	-55 to +125 °C
Operation Temperature	T _{opt}	-55 to +100 °C
Lead Soldering Time (at 260 °C)		10 s.

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ELECTRICAL CHARACTERISTICS (Ta=25 °C)

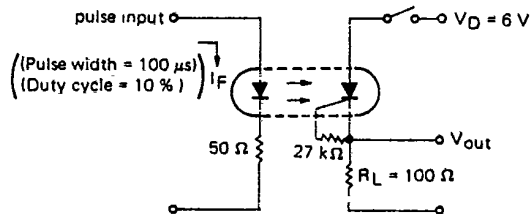
CHARACTERISTIC		SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Diode	Forward Voltage	V _F		1.1	1.4	V	I _F =20 mA
	Reverse Current	I _R			10	μA	V _R =6 V
	Junction Capacitance	C _t		50		pF	V=0, f=1.0 MHz
Photo SCR	Peak Off-State Current	I _{DRM}			10	μA	V _{DRM} =Rated RGK=27 kΩ Ta=100 °C
	Reverse Current	I _{RRM}			10	μA	Ta=100 °C
	On State Voltage	V _{TM}			1.3	V	I _T =300 mA
	Holding Current	I _H		0.2	1	mA	RGK=27 kΩ, V _D =24 V
Coupled	Rate of rise of forward blocking Voltage	dV/dt	0.5	1.0		V/μs	V _{DRM} =Rated RGK=27 kΩ, Ta=100 °C
	Turn on Current *3	I _{FT}		5	12	mA	V _D =6 V, RGK=27 kΩ
	Isolation breakdown Voltage	V ₁₋₂	2500			V _{DC}	DC/1 minute
	Isolation Resistance	R ₁₋₂	10 ¹¹			Ω	V _{in-out} =1.0 kV
	Isolation Capacitance	C ₁₋₂		0.8		pF	V=0, f=1.0 MHz
	Turn on Time *4	t _{on}		10		μs	I _{FT} =50 mA, V _D =6 V RGK=27 kΩ, R _L =100 Ω

*1 pulse width = 100 μs
Repetitive Frequency = 100 Hz

*2 Measuring Condition
DC voltage for 1 minute at Ta = 25 °C; RH = 60 %
Between input (pin No. 1, 2 and No. 3 Common)
and output (pin No. 4, 5 and No. 6 Common)

*3 I_{FT} rank
KX : to 12 mA
LX : to 7 mA

*4 Turn on Time Test Circuit



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TYPICAL CHARACTERISTICS (Ta=25 °C)

