



DESCRIPTION

The SAT400 consists of a phototransistor optically coupled to a pair of light emitting diodes for AC input operation. Optical coupling between the input LEDs and output phototransistor allows for high isolation levels while maintaining low-level AC signal control capability. The SAT400 provides an optically isolated method of controlling many interface applications such as telecommunications, industrial control and instrumentation circuitry.

FEATURES

- AC/DC input control
- High input-to-output isolation (5kVrms MIN)
- Low input power consumption
- High stability
- Miniature 4 pin DIP package

APPLICATIONS

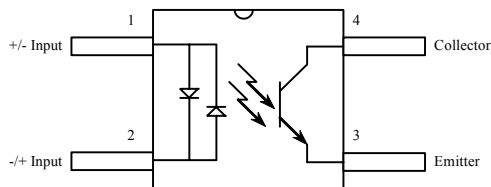
- Registers, copiers, Automatic Vending Machines
- System appliances, measuring instruments
- Computer terminals, PLCs
- Telecommunications, telephones
- Home Appliances
- Digital logic inputs
- Microprocessor inputs
- Switching power supply, laser printers, etc...

OPTIONS/SUFFIXES*

- -S Surface Mount Option
- -TR Tape and Reel Option
- -H .04" (10.16mm) lead spacing (VDE0884)

NOTE: Suffixes listed above are not included in marking on device for part number identification.

SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS*

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		125
Operating Temperature	°C	-40		100
Input Forward Current	mA			50
Input Peak Forward Current	A			1
Reverse Input Control Voltage	V			6
Total Power Dissipation	mW			200

*The values indicated are absolute stress ratings. Functional operation of the device is not implied at these or any conditions in excess of those defined in electrical characteristics section of this document. Exposure to Absolute Ratings may cause permanent damage to the device and may adversely affect reliability.

APPROVALS

- UL and C-UL Approved, File #E201932
- VDE Approved, Lic. # 40011227

ELECTRICAL CHARACTERISTICS - 25°C

PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.4	If = ~20mA
Peak Forward Voltage	V			3	Ifm = ~0.5A
OUTPUT SPECIFICATIONS					
Collector-Emitter Breakdown Voltage	V	60			Ic = 1uA
Emitter-Collector Breakdown Voltage	V	6			Ie = 1uA
Dark Current	μ A			0.1	Vce = 20V
Floating Capacitance	p F		0.6	1	Vce = 0V, f=1.0MHz
Saturation Voltage	V		0.1	0.3	If = 20mA, Ic = 1mA
Current Transfer Ratio	%	60		600	If = 1mA, Vce = 5V
Rise Time	μ s		5		If = 2mA, Vcc = 5V, Rc = 100 ohms
Fall Time	μ s		4		If = 2mA, Vcc = 5V, Rc = 100 ohms
COUPLED SPECIFICATIONS					
Isolation Voltage	V	5000			T = 1 minute
Isolation Resistance	G Ω	50			
CTR CLASSIFICATION					
A:	%	60		600	
B:	%	60		300	

PERFORMANCE DATA

Fig.1: Response (Rise) Time vs. Load Resistance

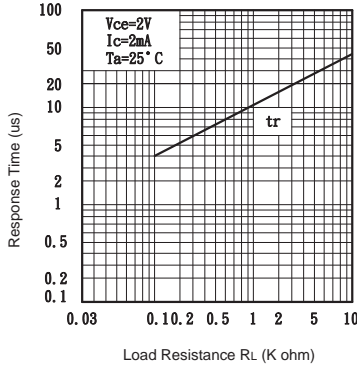


Fig.2: Response (Fall) Time vs. Load Resistance

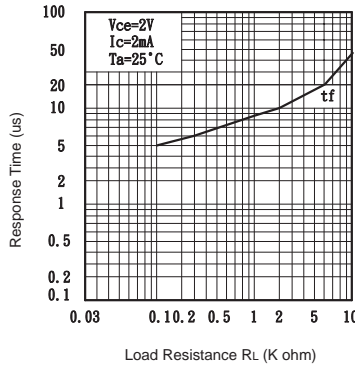


Fig.3: Forward Current vs. Ambient Temperature

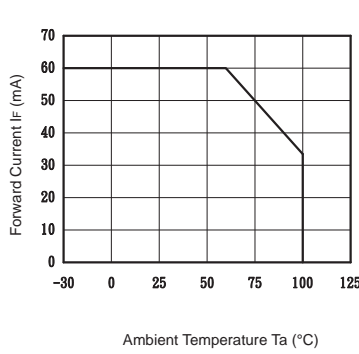


Fig.4: Forward Current vs. Forward Voltage

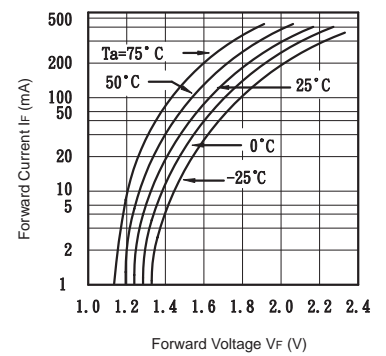


Fig.5: Current Transfer Ratio vs. Forward Current

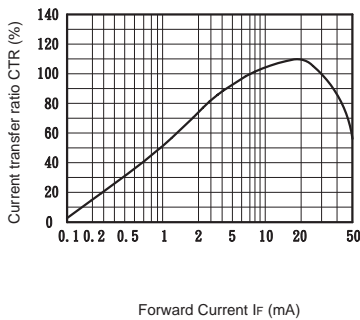


Fig.6: Relative Current Transfer Ratio vs. Ambient Temperature

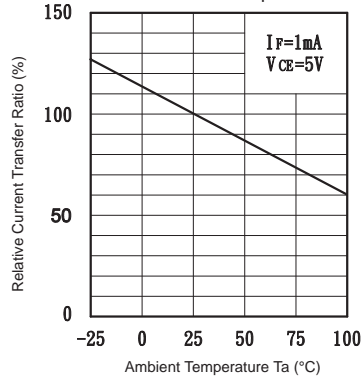


Fig.7: Collector Power Dissipation vs. Ambient Temperature

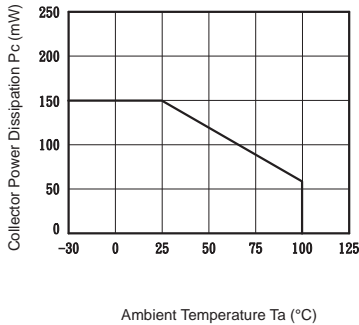


Fig.8: Collector Dark Current vs. Ambient Temperature

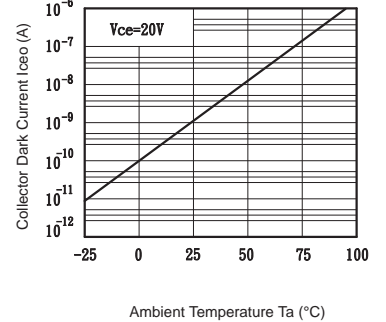


Fig.9: Collector Current vs. Collector-Emitter Voltage

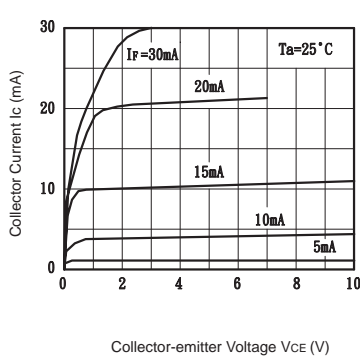


Fig.10: Collector-Emitter Saturation Voltage vs. Ambient Temperature

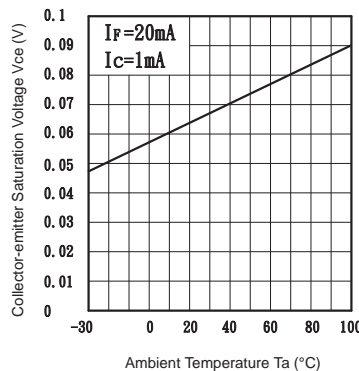
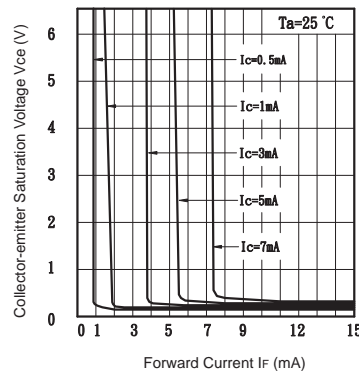
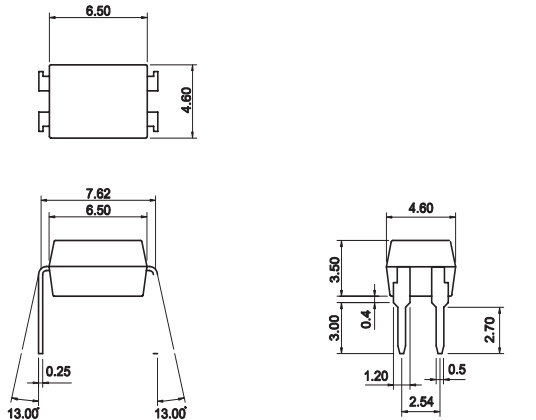


Fig.11: Collector-Emitter Saturation Voltage vs. Forward Current



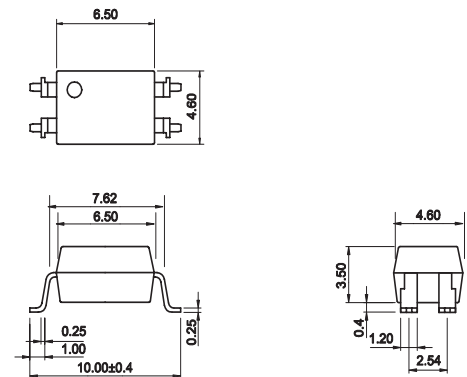
MECHANICAL DIMENSIONS

4 PIN DUAL IN-LINE PACKAGE (SAT400)



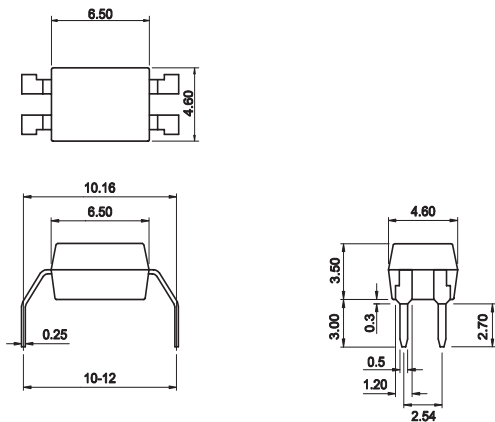
TOLERANCE : $\pm 0.2\text{mm}$

4 PIN SURFACE MOUNT DEVICE (SAT400-S)



TOLERANCE : $\pm 0.2\text{mm}$

4 PIN H TYPE WITH 0.4" LEAD SPACING (SAT400-H)



TOLERANCE : $\pm 0.2\text{mm}$

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