SOLID STATE OPTRONICS

SAT600

AC Input
Optocoupler

RoHS compliant

DESCRIPTION

The SAT600 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 SAT600 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-isolation package (5000 Vrms)
- Low input power consumption
- High stability
- 6 Pin DIP Package w/ Output for Base Connection

APPLICATIONS

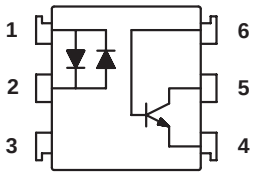
- Home Appliances
- Office Automation Equipment
- Telecom / Datacom
- Vending Machines
- Power Supplies

OPTIONS/SUFFIXES*

- -H .04" (10.16mm) lead spacing (VDE 0884)
- -S Surface Mount Leadform Option
- -TR Tape and Reel Option

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

SCHEMATIC DIAGRAM



1. Anode, Cathode
2. Anode, Cathode
3. NC
4. Emitter
5. Collector
6. Base

ABSOLUTE MAXIMUM RATINGS*

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		125
Operating Temperature	°C	-40		100
Continuous Input Current	mA			50
Transient Input Current	A			1
Reverse Input Control Voltage	V			6
Output Power Dissipation	mW			500

*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 / C-UL Approved, Fie # 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
Reverse Current	μ A			10	Vr = 4V
Peak Forward Voltage	V			3	Ifm = ±0.5A
Terminal Capacitance	p F		30		V = 0, f = 1kHz
OUTPUT SPECIFICATIONS					
Collector-Emitter Breakdown Voltage	V	60			Ic = 10uA
Emitter-Collector Breakdown Voltage	V	6			Ie = 10uA
Collector Dark Current	μ A			0.1	Vce = 20V, If = 0
Floating Capacitance	p F		0.6	1	Vce = 0V, f = 1.0MHz
Saturation Voltage (Collector - Emitter)	V		0.1	0.3	If = 20mA, Ic = 1mA
Current Transfer Ratio	%	60		600	If = 2mA, Vce = 5V
Rise Time	μ s		5	20	If = 2mA, Vcc = 5V, Rc = 100 ohms
Fall Time	μ s		4	20	If = 2mA, Vcc = 5V, Rc = 100 03A9ohms
COUPLED SPECIFICATIONS					
Isolation Voltage	V	5000			T = 1 minute
Isolation Resistance	G Ω	50			
Cut-off Frequency	k H z		80		Vcc = 5V, Ic = 2mA, RL = 100 ohms
CTR CLASSIFICATION					
-A	%	60		600	
-B	%	60		300	

PERFORMANCE DATA

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

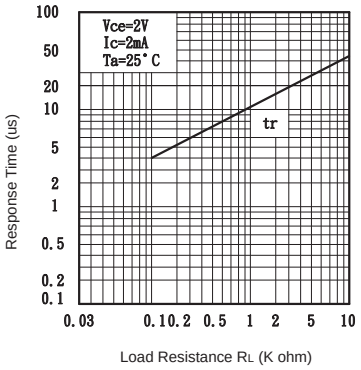


Fig.2: Response (Fall)Time vs. Load Resistance

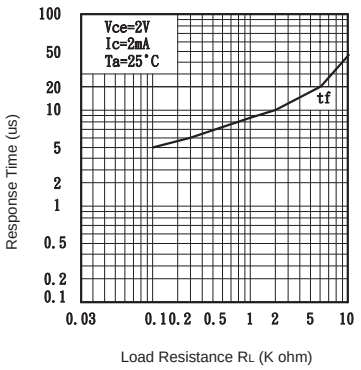


Fig.3: Forward Current vs. Ambient Temperature

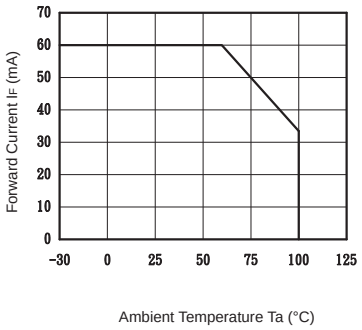


Fig.4: Forward Current vs. Forward Voltage

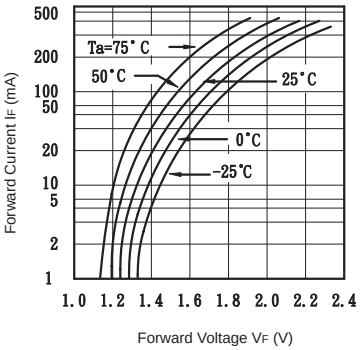


Fig.5: Current Transfer Ratio vs. Forward Current

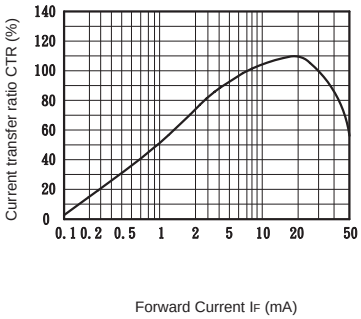


Fig.6: Relative Current Transfer Ratio vs. Ambient Temperature

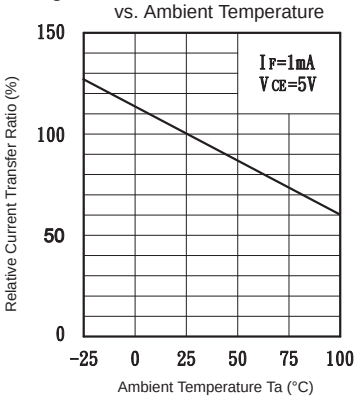


Fig.7: Collector Power Dissipation vs. Ambient Temperature

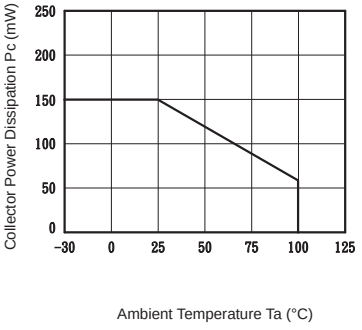


Fig.8: Collector Dark Current vs. Ambient Temperature

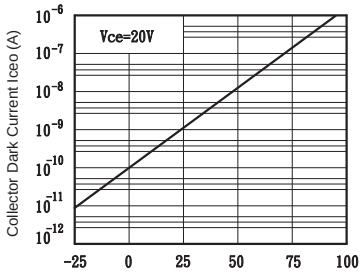


Fig.9: Collector Current vs. Collector-Emitter Voltage

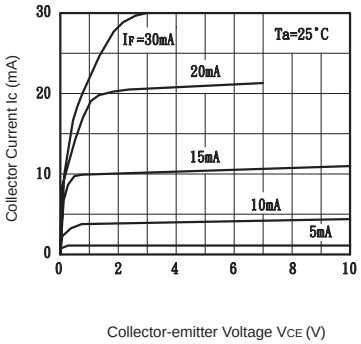


Fig.10: Collector-Emitter Saturation Voltage vs. Ambient Temperature

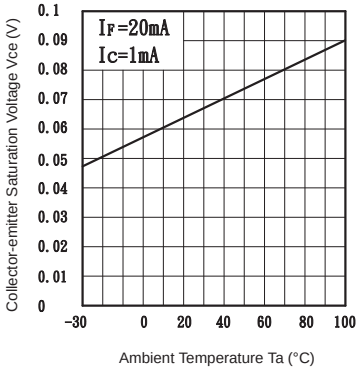
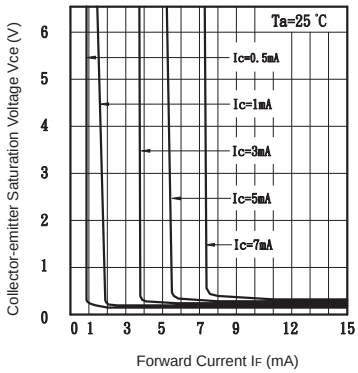
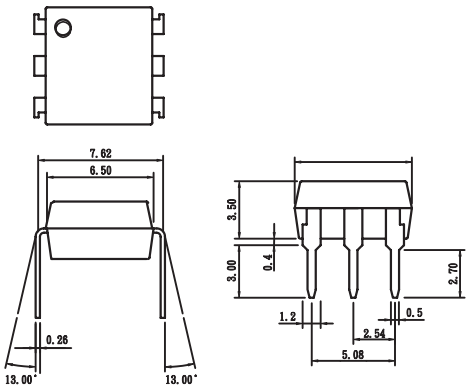


Fig.11: Collector-Emitter Saturation Voltage vs. Forward Current



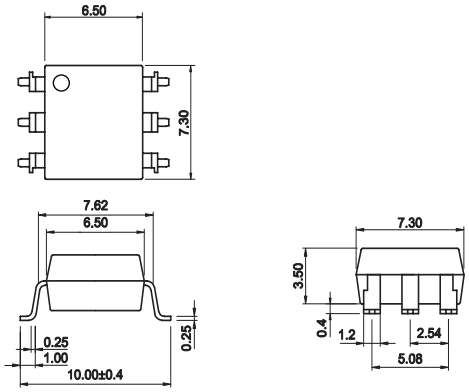
MECHANICAL DIMENSIONS

6 PIN DUAL-IN-LINE PACKAGE (Through-hole)

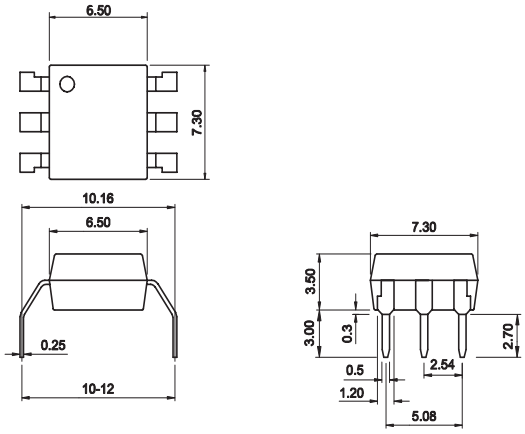


TOLERANCE :± 0.25mm

6 PIN SURFACE MOUNT DEVICE (SMD)



-H Suffix (0.4" / 10mm Lead Spacing)



Unit (mm)

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