SAT450

AC Input
Optocoupler

DESCRIPTION

The SAT450 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 SAT450 provides an optically isolated method of controlling many interface applications such as telecommunications, industrial control and instrumentation circuitry.

FEATURES

- High input-to-output isolation package (3750 Vrms)
- Low input power consumption
- High stability
- AC/DC input control

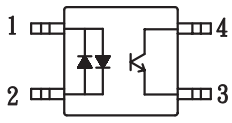
APPLICATIONS

- 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 beam printers, etc.

OPTIONS/SUFFIXES

- -TR Tape and Reel

SCHEMATIC DIAGRAM



1. Anode/ Cathode
2. Anode/ Cathode
3. Emitter
4. Collector

MAXIMUM RATINGS

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		125
Operating Temperature	°C	-40		100
Input Forward Current	mA			±50
Input Peak Forwad Current	A			±1
Reverse Input Voltage	V			6
Total Power Dissipation	mW			170

APPROVALS

- UL and C-UL Approved File#E201932

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SOLID STATE OPTRONICS

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ELECTRICAL CHARACTERISTICS - 25°

PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.4	If = 20mA
Terminal Capacitance	p F		30	250	V=0, f=1kHz
OUTPUT SPECIFICATIONS					
Collector-Emitter Breakdown Voltage	V	60			Ic = 1uA
Emitter-Collector Breakdown Voltage	V	5			Ie = 1uA
Dark Current	μ A			0.1	Vce = 20V
Floating Capacitance	p F		0.6	1	Vce = 0V, f=1MHz
Saturation Voltage	V		0.1	0.3	If = ±20mA, Ic = 1mA
Current Transfer Ratio	%	20		400	If = ±1mA, Vce = 5V
Rise Time	μ s		4		Ic = 2mA, Vce = 2V, Rc = 100 ohms
Fall Time	μ s		3		Ic = 2mA, Vce = 2V, Rc = 100 ohms
COUPLED SPECIFICATIONS					
Isolation Voltage	V	3750			T = 1 minute
Isolation Resistance	G Ω	50			

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Fig.1 Forward Current vs. Ambient Temperature

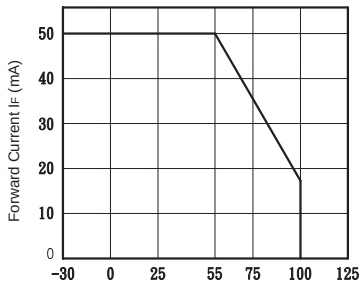


Fig.2 Diode Power Dissipation vs. Ambient Temperature

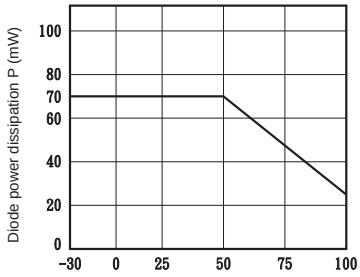


Fig.3 Collector Power Dissipation vs. Ambient Temperature

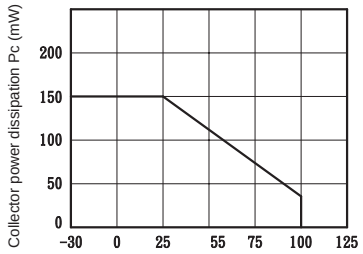


Fig.4 Total Power Dissipation vs. Ambient Temperature

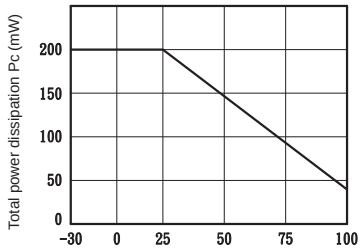


Fig.5 Peak Forward Current vs. Duty Ratio

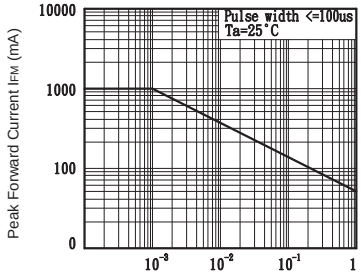


Fig.6 Forward Current vs. Forward Voltage

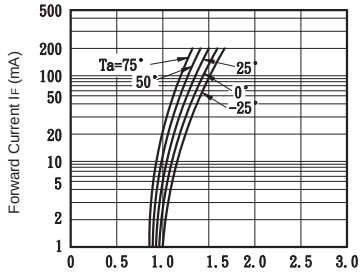


Fig.7 Current Transfer Ratio vs. Forward Current

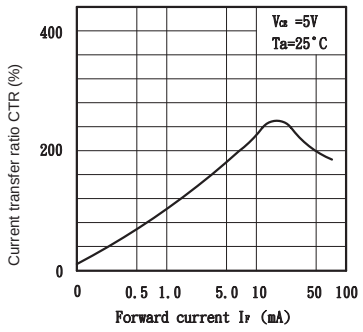


Fig.8 Collector Current vs. Collector-emitter Voltage

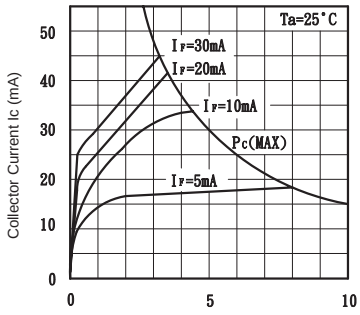


Fig.9 Relative Current Transfer Ratio vs. Ambient Temperature

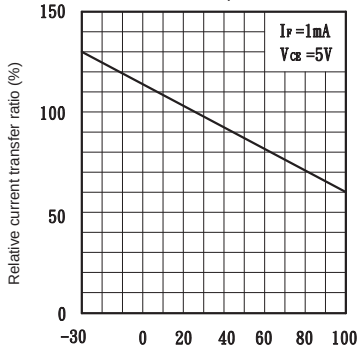


Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature

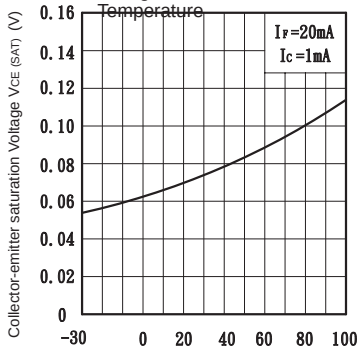


Fig.11 Collector Dark Current vs. Ambient Temperature

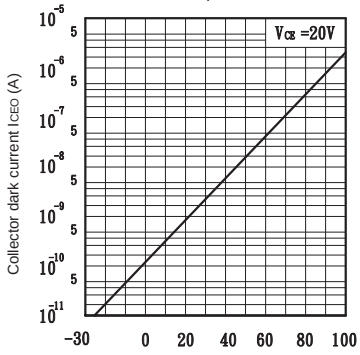
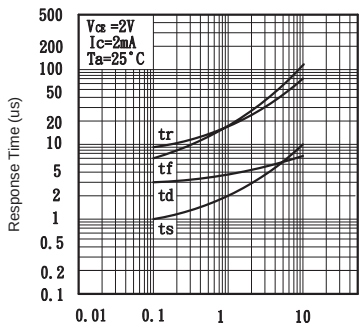


Fig.12 Response Time vs. Load Resistance



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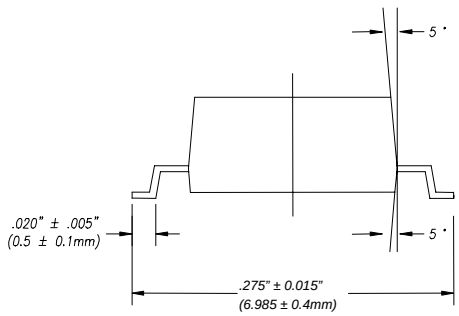
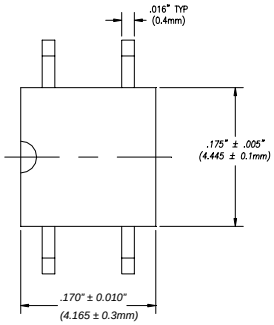
MECHANICAL DIMENSIONS

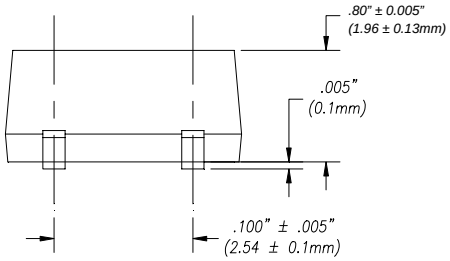
4 PIN SMALL OUTLINE PACKAGE



END VIEW



TOP VIEW



BACK VIEW

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