SDT470

DC Input
Optocoupler

DESCRIPTION

The SDT470 consists of a phototransistor optically coupled to a light emitting diode. Optical coupling between the input LED and output phototransistor allows for high isolation levels while maintaining low-level DC signal control capability. The SDT470 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 (2500 Vrms)
- Low input power consumption
- High stability
- Ultra miniature 4-pin small outline package
- CTR: 80%-600%

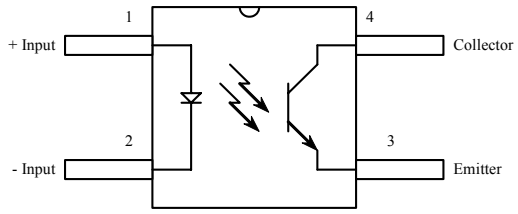
APPLICATIONS

- 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



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
Output Power Dissipation	mW			120

APPROVALS

- UL and C-UL approved File #E201932

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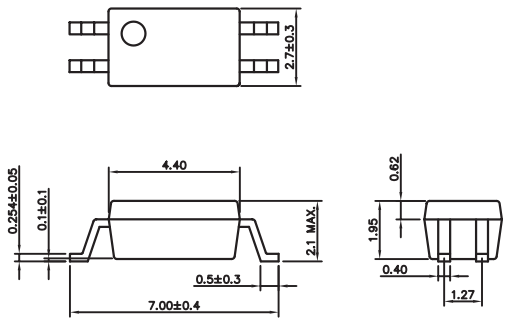
ELECTRICAL CHARACTERISTICS - 25°

PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
Forward Voltage	V		1.2	1.4	If = 5mA
Reverse Current	μ A			5	Vr = 5V
OUTPUT SPECIFICATIONS					
Collector-Emitter Breakdown Voltage	V	80			Ic = 1uA
Emitter-Collector Breakdown Voltage	V	5			If = 100uA
Dark Current	μ A			0.1	Vce = 20V, IF=0
Floating Capacitance	p F		0.6	1	V= 0V, f=1.0 MHz
Vce Saturation Voltage	V		0.1	0.3	If = 10mA, Ic = 1mA
Current Transfer Ratio	%	80		600	If = 5mA, Vce = 5V
Rise Time	μ s		3		Ic= 2mA, Vce =5V, Rc = 100ohms
Fall Time	μ s		5		Ic= 2mA, Vce = 5V, Rc = 100 ohms
COUPLED SPECIFICATIONS					
Isolation Voltage	V	2500			T = 1 minute
Isolation Resistance	G Ω	50			

Outside Dimension:Unit (mm)



TOLERANCE :+ 0.2mm

Test circuit for switching time.

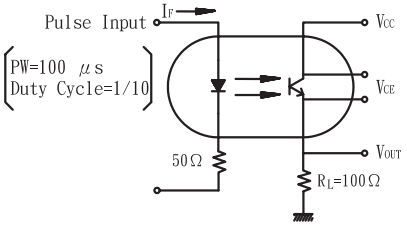


Fig.1 Current Transfer Ratio vs. Forward Current

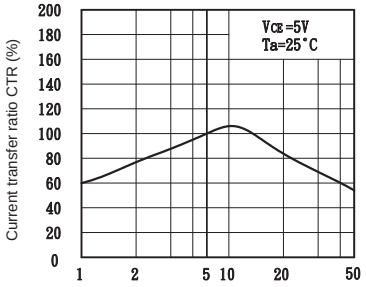


Fig.2 Collector Power Dissipation vs. Ambient Temperature

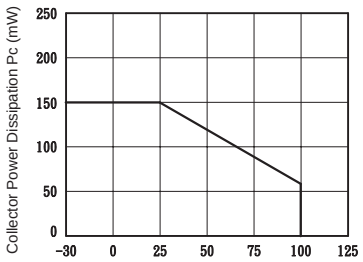


Fig.3 Collector Dark Current vs. Ambient Temperature

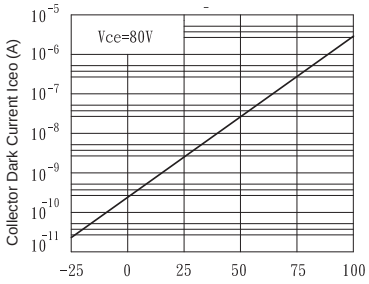


Fig.4 Forward Current vs. Ambient Temperature

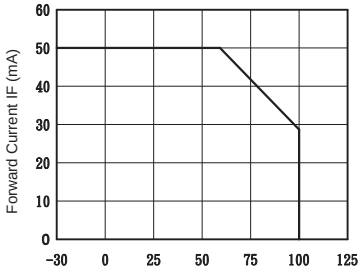


Fig.5 Forward Current vs. Forward Voltage

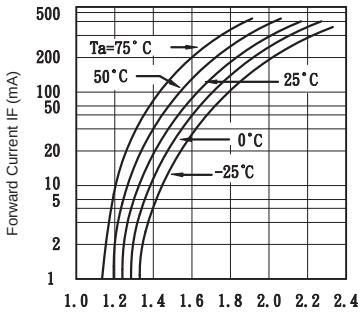


Fig.6 Collector Current vs. Collector-emitter Voltage

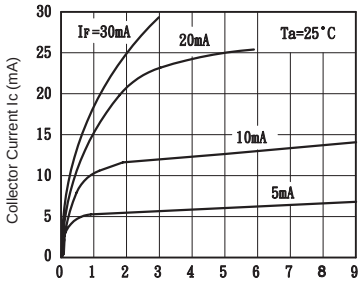


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

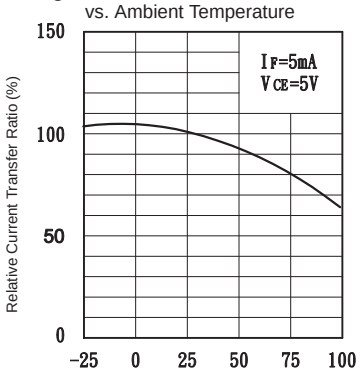


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

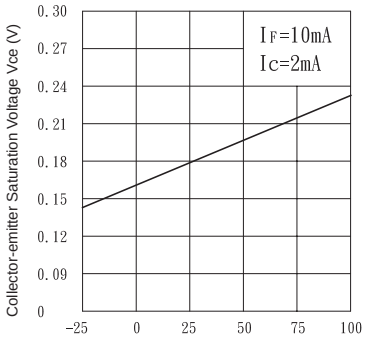


Fig.9 Collector-emitter Saturation Voltage vs. Forward Current

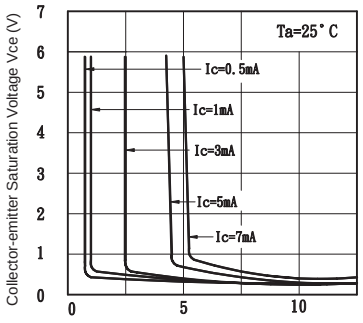


Fig.10 Response Time vs. Load Resistance

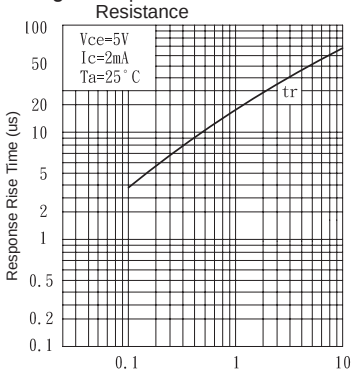
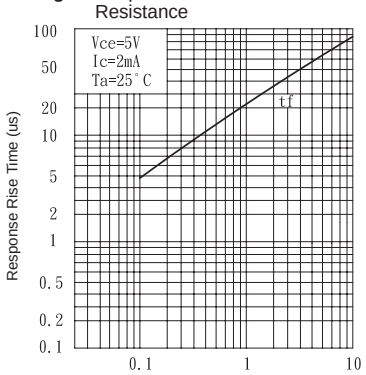


Fig.11 Response Time vs. Load Resistance



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