SOLID STATE OPTRONICS

SDT1600



DC Input
Quad Optocoupler

DESCRIPTION

The SDT1600 combines four independent optocouplers in a 16 pin DIP/SMD package. Each of the discrete circuits is composed of an AlGaAs LED optically coupled to a photo-transistor--allowing for high isolation levels while maintaining low-level DC signal control capability. The SDT1600 provides an optically isolated method of controlling many interface applications such as telecommunications, industrial control and instrumentation circuitry.

FEATURES

- 4 optically isolated optocouplers in 1 package
- High input-to-isolation package (5000Vrms MIN)
- Low input power consumption
- High stability
- CTR Range 50-600%

APPLICATIONS

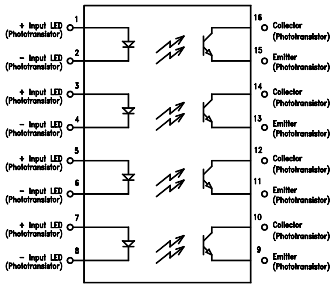
- Loop current / Ring signal detection
- Programmable controls
- Power supplies
- Office automation equipment

OPTIONS/SUFFIXES*

- -S Surface Mount Option
- -TR Tape and Reel Option

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
Output 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 / C-UL Approved, File # E201932
- VDE Approved, Lic # 40011227

ELECTRICAL CHARACTERISTICS - 25°C

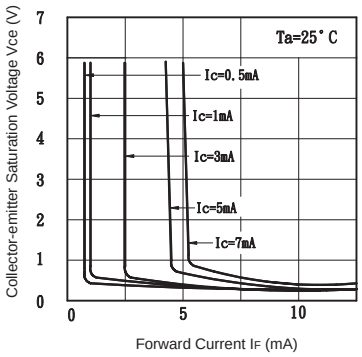
PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.4	If = 20mA
Peak Forward Voltage	V			3	Ifm = 0.5A
Reverse Current	μ A			10	Vr = 4V
OUTPUT SPECIFICATIONS					
Collector-Emitter Breakdown Voltage	V	60			Ic = 1uA
Emitter-Collector Breakdown Voltage	V	6			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	0.2	If = 20mA, Ic = 1mA
Current Transfer Ratio	%	50		600	If = 5mA, Vce = 5V
Rise Time	μ s		4		Ic = 2mA, Vcc = 5V, Rc = 100 ohms
Fall Time	μ s		3		If = 2mA, Vcc = 5V, Rc = 100 ohms
COUPLED SPECIFICATIONS					
Isolation Voltage	V	5000			T = 1 minute
Isolation Resistance	G Ω	50			

PERFORMANCE DATA

SDT1600

Collector-Emitter Saturation Voltage vs. Forward Current

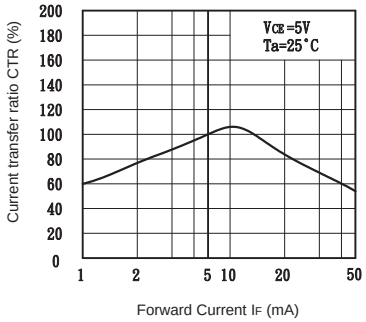
N = 100, Ambient Temperature = 25°C



SDT1600

Current Transfer Ratio vs. Forward Current

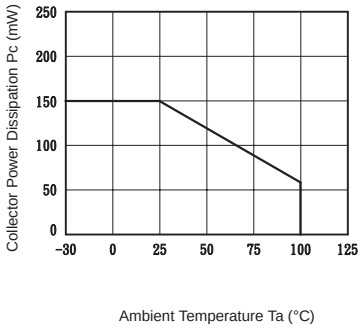
N = 100, Ambient Temperature = 25°C



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Collector Power Dissipation vs. Ambient Temperature

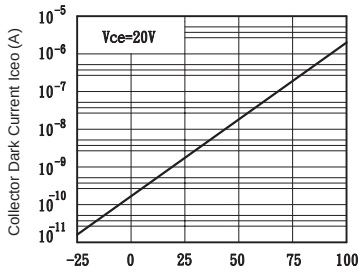
N = 100



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Collector Dark Current vs. Ambient Temperature

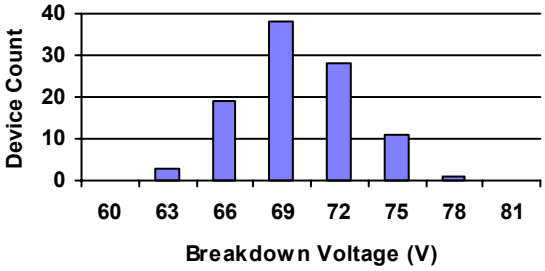
N = 100



SDT1600

Typical Vceo Distribution

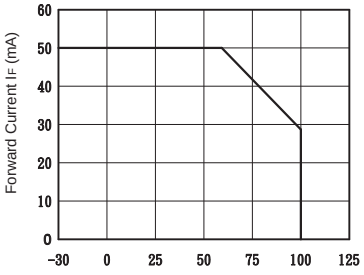
N = 100, Ambient Temperature = 25°C



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Forward Current vs. Ambient Temperature

N = 100, Ambient Temperature = 25°C

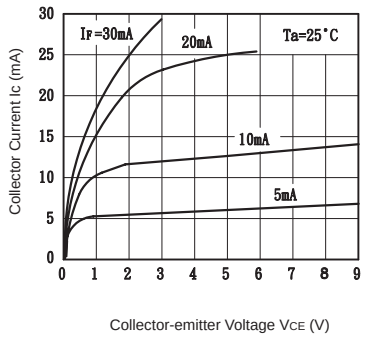


PERFORMANCE DATA

SDT1600

Collector Current vs. Collector-Emitter Voltage

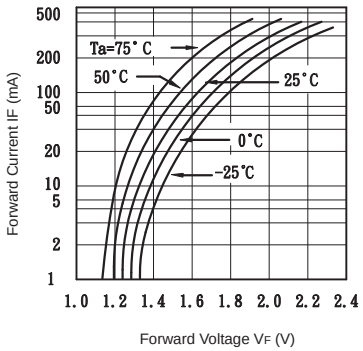
N = 100, Ambient Temperature = 25°C



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Forward Current vs. Forward Voltage

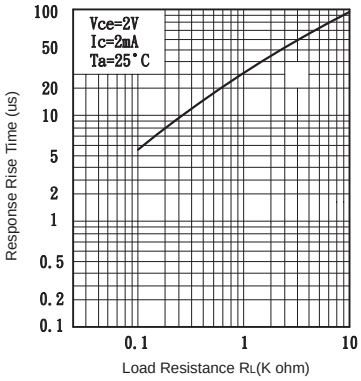
N = 100, Ambient Temperature = 25°C



SDT1600

Rise Time vs. Load Resistance

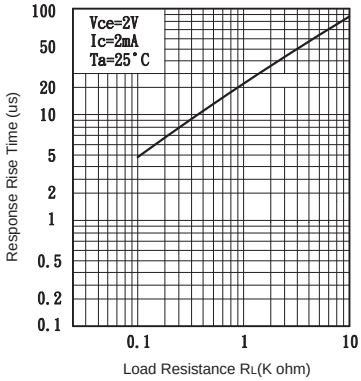
N = 100, Ambient Termperature = 25°C



SDT1600

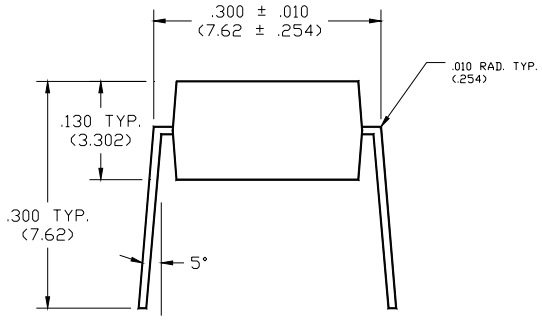
Fall Time vs. Load Resistance

N = 100, Ambient Temperature = 25°C

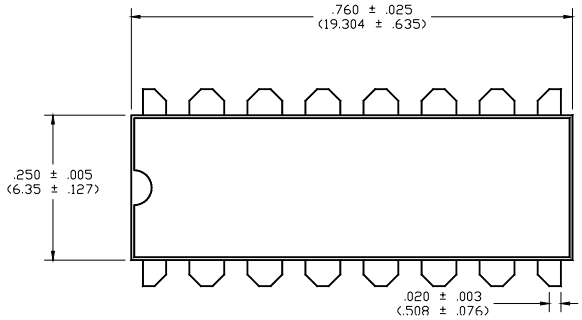


MECHANICAL DIMENSIONS

16 PIN DUAL IN-LINE PACKAGE

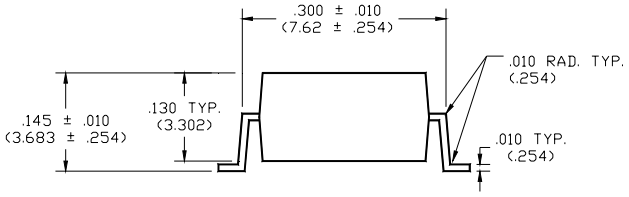


END VIEW

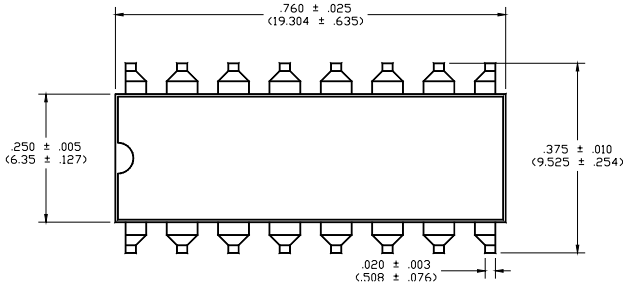


TOP VIEW

16 PIN SURFACE MOUNT DEVICE



END VIEW



TOP VIEW

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