SOLID STATE OPTRONICS

SPT601



DC Input
PhotoSCR

DESCRIPTION

The SPT601 consists of an AlGaAs LED optically coupled to a photo-sensitive SCR. Optical coupling provides high isolation levels while maintaining low-level DC signal control capability. With high load voltage and low input current, the SPT601 is an ideal solution to drive SCR Triacs and Solid State Relays.

FEATURES

- Low input control current (5mA MAX)
- High blocking voltage (400V MIN)
- 400mA maximum continuous current
- High input-to-output isolation (3.75kV MIN, 5.3kV MAX)
- High Transient Immunity (dV/dt = 400V/us MIN)
- RoHS compliant / LeadFree Component
- Solid state reliability

APPLICATIONS

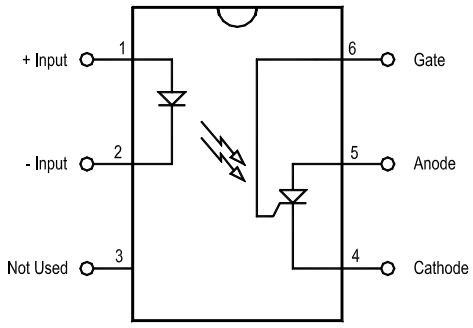
- Valve control
- Solenoids
- Remote switching
- Home appliances
- Metering equipment
- Heating elements

OPTIONS/SUFFIXES*

- -H High Input-Output Isolation (5.3kVrms)
- -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



ABSOLUTE MAXIMUM RATINGS*

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		125
Operating Temperature	°C	-40		85
Continuous Input Current	mA			40
Transient Input Current	mA			400
Reverse Input Control Voltage	V	6		
Total Package Power Dissipation	mW			500
Surge Current Rating	A			10

*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 Pending

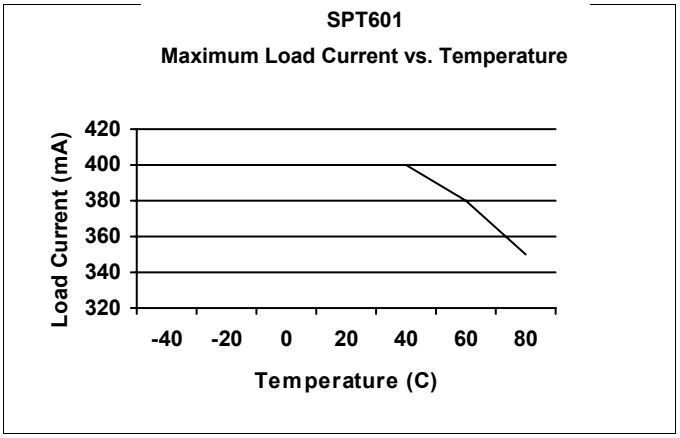
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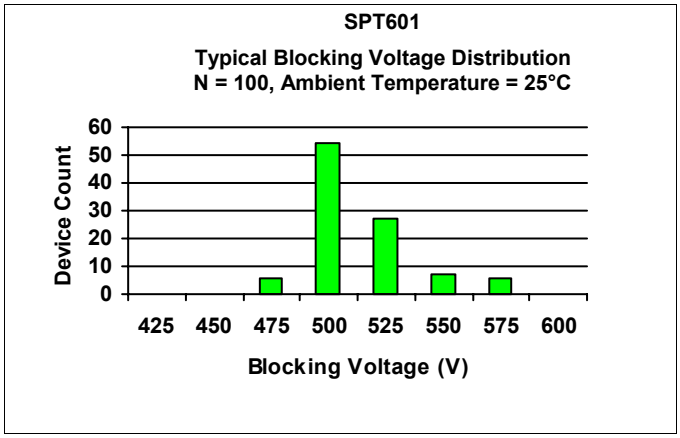
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ELECTRICAL CHARACTERISTICS - 25°C

PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.5	If = 10mA
LED Reverse Voltage	V	6	12		Ir = 10uA
Must Operate Current	m A		2.5	5	Io = 400mA, resistive load
Reverse Current	μ A			10	Vr = 6.0V
Junction Capacitance	p F		5		Vf = 0V
OUTPUT SPECIFICATIONS					
Forward Blocking Voltage	V	400			RGK = 10KΩ, TA = 100ºC, Id = 150μA
Reverse Blocking Voltage	V	400			RGK=10KΩ, TA=100ºC, Id=150μA
Continuous Load Current	m A			400	If = 5mA
Surge Current Rating	A			10	T = 16us
Holding Current	μ A			500	RGK = 27KΩ, VFX = 50V
On-Voltage	V		1.1	1.4	Io = 400mA
Leakage Current	μ A			10	Vo = 400V, Rgk = 47k
Gate Trigger Voltage	V		0.6	1	VFX=100V, RGK=27KΩ, RL=10KΩ
Forward Leakage Current	μ A		1	10	RGK=10KΩ, VRX=400V, IF=0, TA=100ºC
Reverse Leakage Current	μ A		1	10	RGK=10KΩ, VRX=400V, IF=0, TA=100ºC
Gate Trigger Current	μ A		20	50	VFX=100V, RRG=27KΩ, RL=10KΩ
COUPLED SPECIFICATIONS					
Isolation Voltage	V	3750			T = 1 minute
-H Suffix	V	5300			T = 1 minute
Isolation Resistance	G Ω	100			
Coupled Capacitance	p F		2		

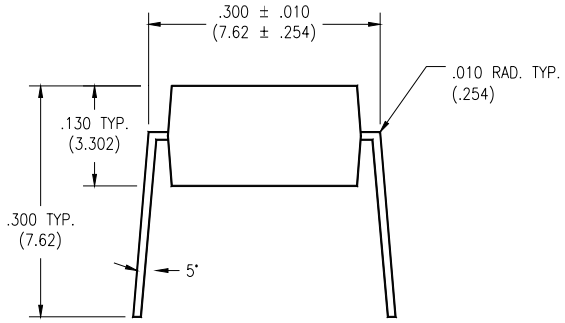
PERFORMANCE DATA



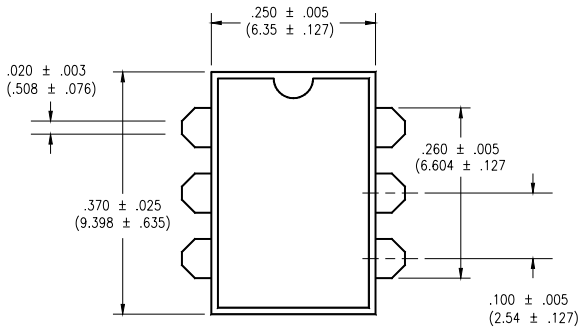


MECHANICAL DIMENSIONS

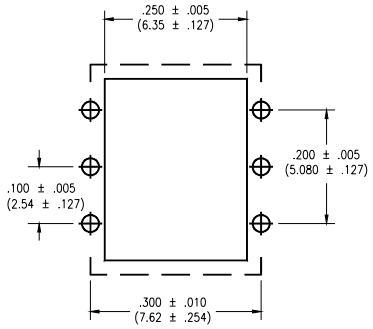
6 PIN DUAL IN-LINE PACKAGE



END VIEW

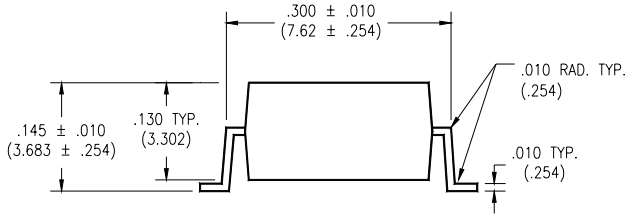


TOP VIEW

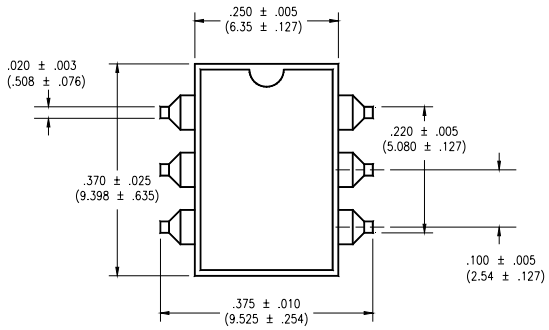


BOTTOM VIEW/
BOARD PATTERN

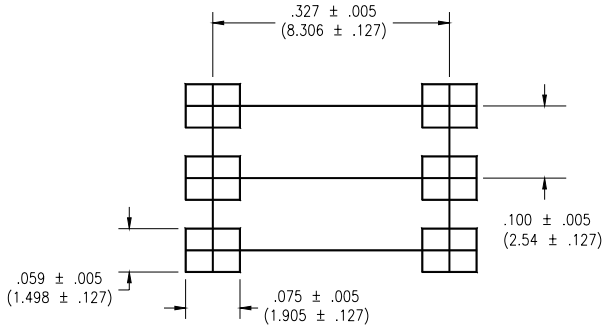
6 PIN SURFACE MOUNT DEVICE



END VIEW



TOP VIEW



BOTTOM VIEW/
BOARD PATTERN

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