

Solid State Relay

Description

The **LSR529R** and **LSR729R** Solid state relays are an integration of an infrared emitting diode, a Phototriac Detector and a main output Triac. These device are ideally suited for controlling high voltage AC loads with solid state reliability while providing 5000V isolation from input to output.

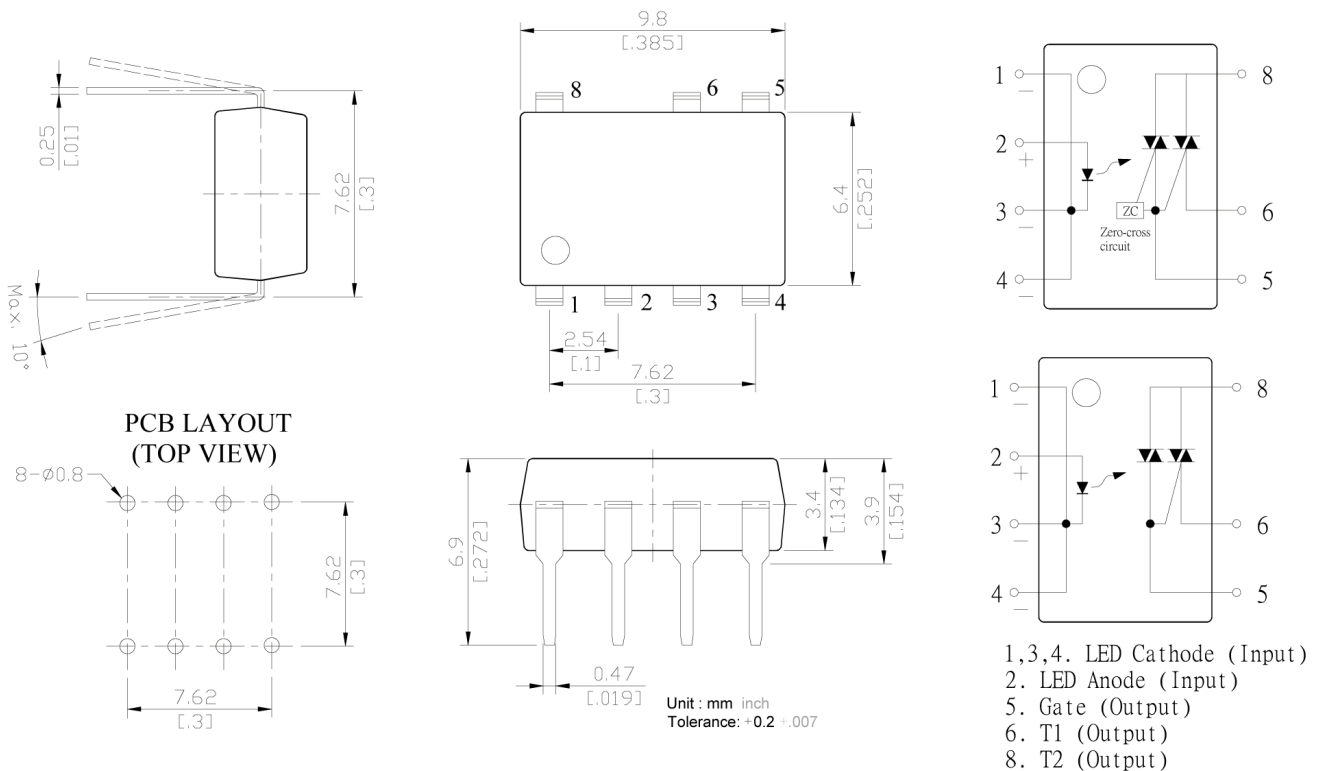
Features

- Output current ($I_{T(rms)}$): 0.8A)
- 8 pin DIP and SMD package
- High repetitive peak off-state voltage (V_{DRM} : 600V)
- Two types available: Zero-cross type and Non zero-cross type
- 5000Vrms Input/Output isolation

Applications

- Power control in applications such as air conditioners, microwave ovens, washing machines, fan heaters etc.
- Industrial equipment market

Outline Dimensions



Solid State Relay Specifications

LSR529R (DIP) & LSR729R (SMD)

Absolute Maximum Ratings (Ambient Temperature: 25°C)

Item		Symbol	Value	Units	Note
Input	Continuous LED Current	I _F	50	mA	
	Peak LED Current	I _{FP}	1000	mA	f=100Hz, duty=1%
	LED Reverse Voltage	V _R	6	V	
	Input Power Dissipation	P _{In}	75	mW	
Output	Repetitive Peak Off-state Voltage	V _{DRM}	600	V	
	On-state RMS Current	I _{T(RMS)}	0.8	A	
	Non-repetitive Surge Current	I _{TSM}	8	A	60Hz, 1 cycle
I/O Isolation Voltage		V _{ISO}	5000	V AC	
Operating Temperature		T _{Opr}	-30 to +85	°C	
Storage Temperature		T _{Stg}	-40 to +125	°C	
Pin Soldering Temperature		T _{Sol}	260	°C	5 sec max.

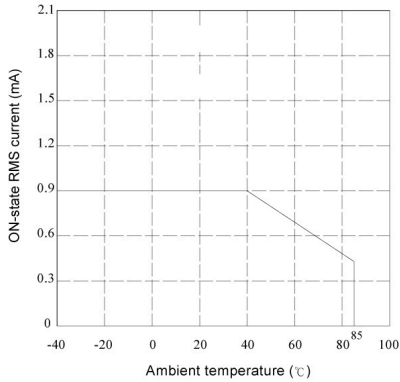
Electrical Specifications (Ambient Temperature: 25°C)

Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input	LED Forward Voltage	V _F		1.2	1.4	V	I _F =10mA
	LED Reverse Current	I _R			10	uA	V _R =6V
Output	Peak Off-state Current	I _{DRM}			100	uA	I _F =0mA, V _{DRM} =600V
	Peak On-state Voltage	V _{TM}		1.2	2.5	V	I _F =10mA I _{TM} =Max.
	Holding Current	I _H			25	mA	
	Critical rate of Off-state Voltage	dv/dt	200			V/us	V _{DRM} =600×1√2
Transfer -charact eristics	Trigger LED Current	I _{FT}		2	10	mA	V _D =6V, R _L =100Ω
	Turn-On Time	T _{on}			100	us	I _F =20mA, V _D =6V, R _L =100Ω
	Turn-On Time (Zero-cross)	T _{on}			10	us	
	I/O Isolation Resistance	R _{ISO}	50			GΩ	DC500V

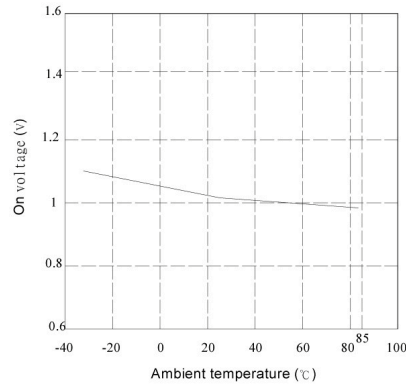
Notes: Recommended LED Current I_{FT}: 10~20mA

Reference Data

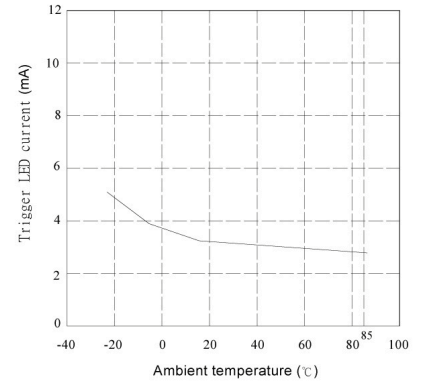
ON-state RMS current Vs. Ambient temperature



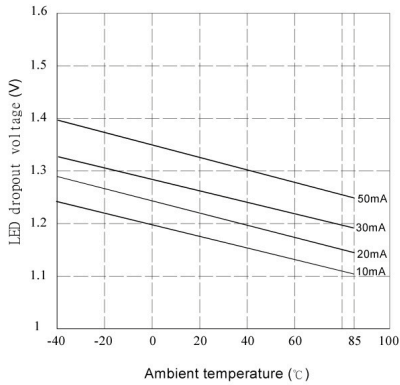
On voltage Vs. Ambient temperature



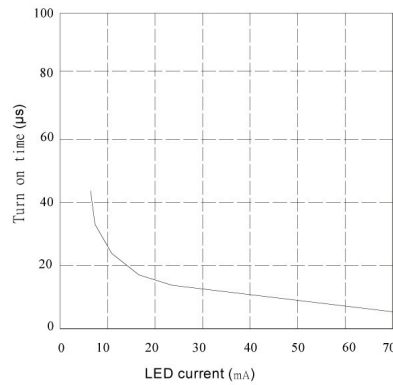
Trigger LED current Vs. Ambient temperature



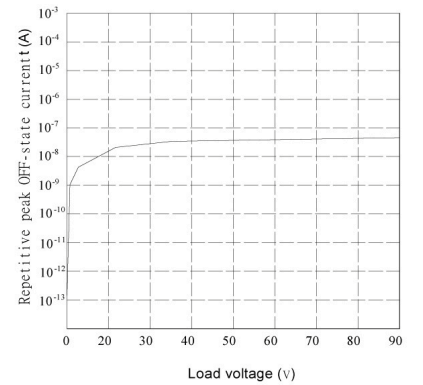
LED dropout voltage Vs. Ambient temperature



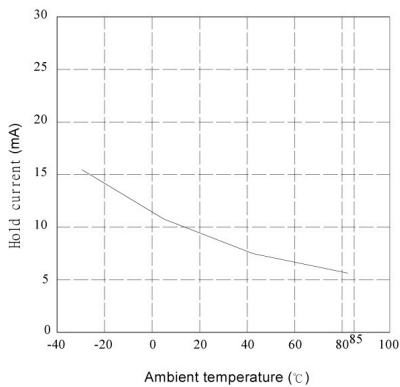
Turn on time Vs. LED current



Repetitive peak OFF-state current Vs. Load voltage



Hold current Vs. Ambient temperature



Zero-cross voltage Vs. Ambient temperature

