



## UPT1223

Preliminary

PHOTOCOUPLER

### RANDOM PHASE POWER TRIAC DIP TYPE SSR IDEAL FOR AC LOAD CONTROL

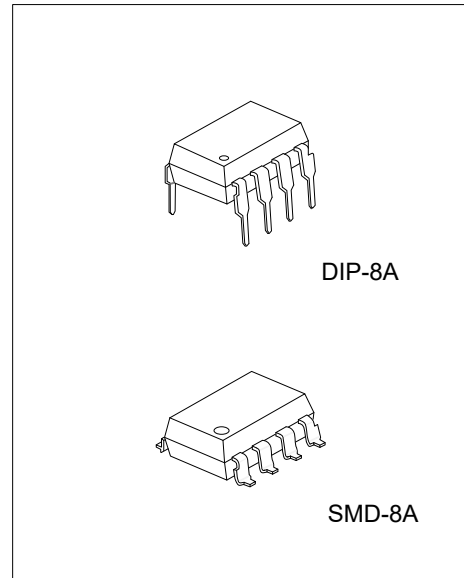
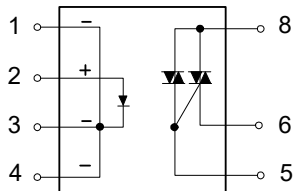
#### DESCRIPTION

The **UPT1223** Solid State Relays (SSR) are an integration of an infrared emitting diode (I<sub>RED</sub>), a Phototriac Detector and a main output Triac. These devices are ideally suited for controlling high voltage AC loads with solid state reliability while providing 4kV isolation (V<sub>ISO</sub>(RMS)) from input to output.

#### FEATURES

- \* Compact DIP type SSR that's ideal for AC load control
- \* Supports 0.6A ON-state RMS currents.
- \* Handles both 100 and 200V AC loads
- \* High dielectric strength: 5,000V AC (between input and output)

#### SYMBOL

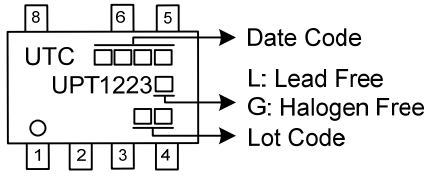


#### ORDERING INFORMATION

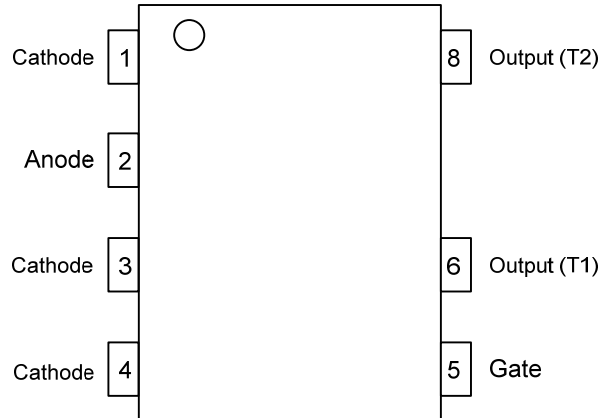
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UPT1223L-C08A-T	UPT1223G-C08A-T	SMD-8A	Tube
UPT1223L-D08A-T	UPT1223G-D08A-T	DIP-8A	Tube

<p>UPT1223G-C08A-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) T: Tube</p> <p>(2) C08A: SMD-8A, D08A: DIP-8A</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING



■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=25°C, unless otherwise specified)

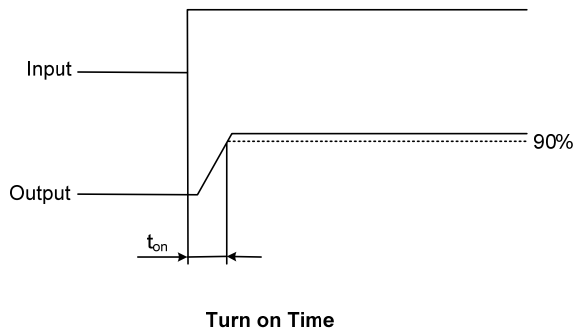
PARAMETER		SYMBOL	RATINGS	UNIT
Input	LED Forward Current	I <sub>F</sub>	50	mA
	LED Reverse Voltage	V <sub>R</sub>	6	V
	Peak Forward Current (f=100Hz, Duty Ratio=0.1%)	I <sub>FP</sub>	1	A
Output	Repetitive Peak OFF-State Voltage	V <sub>DRM</sub>	600	V
	ON-State RMS Current	I <sub>T(RMS)</sub>	0.6	A
	Non-Repetitive Surge Current (60Hz, 1 Cycle)	I <sub>TSM</sub>	6	A
I/O Isolation Voltage		V <sub>ISO</sub>	5000	V/AC
Operating Temperature		T <sub>OPR</sub>	-30 ~ +85	°C
Storage Temperature		T <sub>STG</sub>	-40 ~ +125	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.  
 2. AC for 1 minute, R.H.= 40~60% R.H. In this test, pins 1, 2 are shorted together, and pins 3, 4 are shorted together.

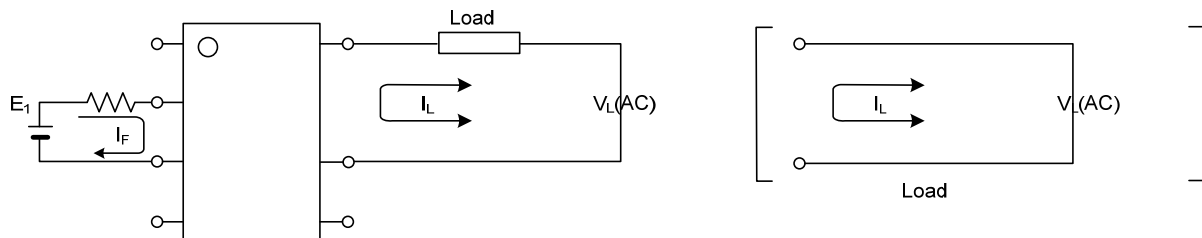
■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>INPUT</b>						
LED Dropout Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA		1.21	1.3	V
LED Reverse Voltage	I <sub>R</sub>	V <sub>R</sub> =6V			10	μA
<b>OUTPUT</b>						
Peak OFF-State Current	I <sub>DRM</sub>	I <sub>F</sub> =0mA, V <sub>DRM</sub> =600V			100	μA
Peak ON-State Voltage	V <sub>TM</sub>	I <sub>F</sub> =10mA, I <sub>TM</sub> =Max.			2.5	V
Holding Current	I <sub>H</sub>				25	mA
Critical Rate of Rise of OFF-State Voltage	dv/dt	V <sub>DRM</sub> =600V×1.√2	200			V/μs
<b>TRANSFER CHARACTERISTICS</b>						
Trigger LED Current	I <sub>FT</sub>	V <sub>D</sub> =6V, R <sub>L</sub> =100Ω			10	mA
Turn on Time	t <sub>ON</sub>	I <sub>F</sub> =20mA V <sub>D</sub> =6V, R <sub>L</sub> =100Ω			100	μs
I/O Isolation Resistance	R <sub>ISO</sub>	500V DC	50			GΩ

■ TEST CIRCUITS AND WAVEFORMS



■ SCHEMATIC AND WIRING DIAGRAMS



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