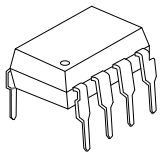
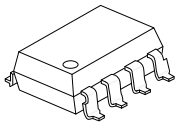
UPT1223 **Preliminary** ***PHOTOCOUPLER***

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



DIP-8A



SMD-8A

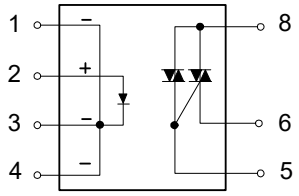
■ DESCRIPTION

The **UPT1223** Solid State Relays (SSR) are an integration of an infrared emitting diode (I_{RED}), 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_{ISO}(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

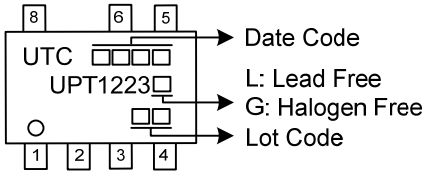


■ ORDERING INFORMATION

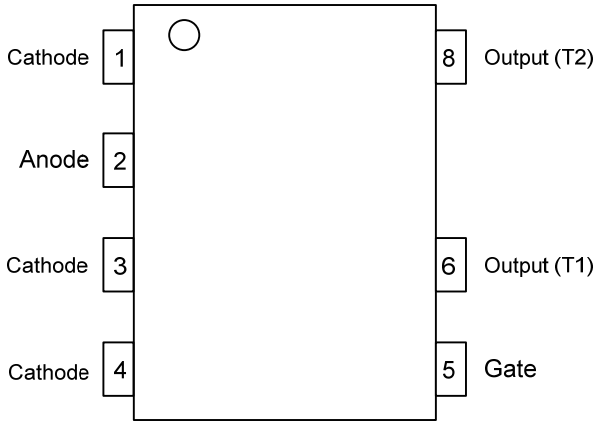
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UPT1223L-C08A-T	UPT1223G-C08A-T	SMD-8A	Tube
UPT1223L-D08A-T	UPT1223G-D08A-T	DIP-8A	Tube

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

■ MARKING



■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

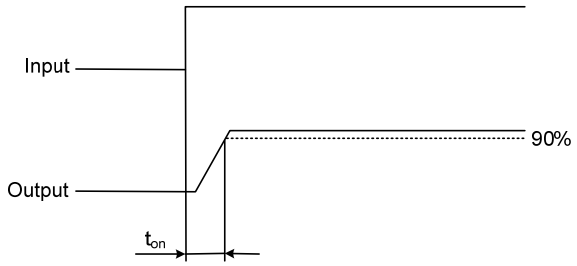
PARAMETER		SYMBOL	RATINGS	UNIT
Input	LED Forward Current	I_F	50	mA
	LED Reverse Voltage	V_R	6	V
	Peak Forward Current (f=100Hz, Duty Ratio=0.1%)	I_{FP}	1	A
Output	Repetitive Peak OFF-State Voltage	V_{DRM}	600	V
	ON-State RMS Current	$I_{T(RMS)}$	0.6	A
	Non-Repetitive Surge Current (60Hz, 1 Cycle)	I_{TSM}	6	A
I/O Isolation Voltage		V_{ISO}	5000	V/AC
Operating Temperature		T_{OPR}	-30 ~ +85	°C
Storage Temperature		T_{STG}	-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_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
INPUT						
LED Dropout Voltage	V_F	I_F=20mA		1.21	1.3	V
LED Reverse Voltage	I_R	V_R=6V			10	μA
OUTPUT						
Peak OFF-State Current	I_{DRM}	I_F=0mA, V_{DRM}=600V			100	μA
Peak ON-State Voltage	V_{TM}	I_F=10mA, I_{TM}=Max.			2.5	V
Holding Current	I_H				25	mA
Critical Rate of Rise of OFF-State Voltage	dv/dt	V_{DRM}=600V×1 $\sqrt{2}$	200			V/μs
TRANSFER CHARACTERISTICS						
Trigger LED Current	I_{FT}	V_D=6V, R_L=100Ω			10	mA
Turn on Time	t_{ON}	I_F=20mA V_D=6V, R_L=100Ω			100	μs
I/O Isolation Resistance	R_{ISO}	500V DC	50			GΩ

■ TEST CIRCUITS AND WAVEFORMS



Turn on Time

■ SCHEMATIC AND WIRING DIAGRAMS