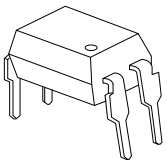
UOC3021S **Preliminary** ***PHOTOCOUPLER***

4-PIN DIP RANDOM-PHASE OPTOISOLATORS TRIAC DRIVER OUTPUT



DIP-4

■ DESCRIPTION

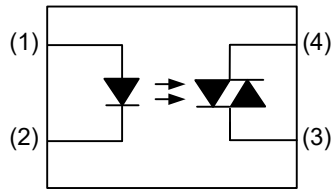
The UTC **UOC3021S** is consists of gallium arsenide infrared emitting diodes,optically coupled to a silicon bilateral switch.

The UTC **UOC3021S** is suitable for applications requiring isolated triac triggering.

■ FEATURES

* 250V Phototriac Driver Output
* Gallium-Arsenide-Diode Infrared Source and Optically-Coupled Silicon Traic Driver (Bilateral Switch)
* High Isolation 7500V Peak
* Output Driver Designed for 220V ac

■ SYMBOL



■ ORDERING INFORMATION

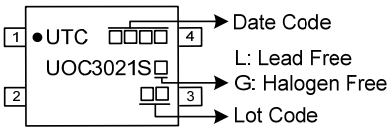
Ordering Number		Package	Pin Assignment				Packing
Lead Free	Halogen Free		1	2	3	4	
UOC3021SL-D04-T	UOC3021SG-D04-T	DIP-4	A	K	M	M	Tube

Note: Pin Assignment: A: ANODE K: CATHODE M: MAIN TERMINAL

UOC3021SG-D04-T

(1)Packing Type	(1) T: Tube
(2)Package Type	(2) D04: DIP-4
(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



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

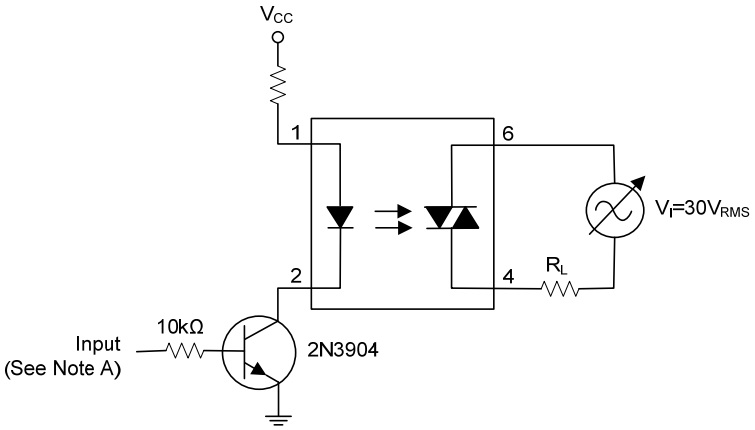
PARAMETER			SYMBOL	RATINGS	UNIT
Input	LED Forward Current		I_F	50	mA
	LED Reverse Voltage		V_R	3	V
Output	Repetitive Peak OFF-State Voltage		V_{DRM}	400	V
	ON-State RMS Current	T_A=25°C	$I_{T(RMS)}$	100	mA
		T_A=70°C		50	mA
	Non-Repetitive Surge Current (50~60Hz, 1 Cycle)		I_{TSM}	1.2	A
Operating Junction Temperature			T_J	-40 ~ +100	°C
Storage Temperature			T_{STG}	-40 ~ +150	°C

Note: 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.

■ 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=10mA		1.2	1.5	V
LED Reverse Voltage	I_R	V_R=3V			100	μA
OUTPUT						
Peak OFF-State Current	I_{DRM}	I_F=0mA, V_{DRM}=400V			100	nA
Peak ON-State Voltage	V_{TM}	I_F=10mA, I_{TM}=100mA.		1.4	2.5	V
Holding Current	I_H			100		μA
TRANSFER CHARACTERISTICS						
Trigger LED Current	I_{FT}	V_D=3V, R_L=100Ω		8	15	mA

■ TEST CIRCUITS AND WAVEFORMS



Critical Rate of Rise Test Circuit

NOTE A. The critical rate of rise of off-state voltage, dv/dt, is measured with the input at 0V. The frequency of V_{IN} is increased until the phototriac turns on. This frequency is then used to calculate the dv/dt according to the formula:

$$dv/dt=2\sqrt{2\pi fV_{IN}}$$

The critical rate of rise of commutating voltage, dv/dt(c), is measured by applying occasional 5V pulses to the input and increasing the frequency of Vin until the phototriac stays on (latches) after the input pulse has ceased. With no further input pulses, the frequency of Vin is then gradually decreased until the phototriac turns off. The frequency at which turn-off occurs may then be used to calculate the dv/dt(c) according to the formula shown above.