



## FOUR-QUADRANT TRIAC, ENHANCED NOISE IMMUNITY

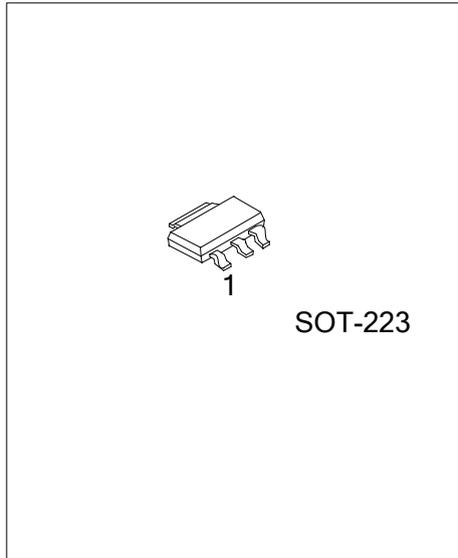
### DESCRIPTION

The UTC **UOT406** is a Four-quadrant triac, it uses UTC's advanced technology to provide customers with direct interfacing to low power gate drive circuits and sensitive gate, etc.

The UTC **UOT406** is suitable for Low power AC fan speed controllers, Low power motor control and Home appliances, etc.

### FEATURES

- \*  $V_{DRM} \leq 600V$ ,  $I_{GT} \leq 3mA$ ,  $I_{GT} \leq 5mA$  (T2-G+)
- $I_{TSM} \leq 12.5A$  (t=20ms),  $I_{TSM} \leq 13.8A$  (t=16.7ms),  $I_{T(RMS)} \leq 1A$
- \* Direct interfacing to low power gate drive circuits
- \* Sensitive gate



### SYMBOL



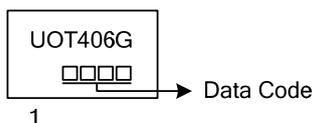
### ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
UOT406G-x-AA3-R	SOT-223	MT1	MT2	G	Tape Reel

Note: Pin Assignment: MT1: MT1 MT2: MT2 G: Gate

<p>UOT406G-AA3-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) AA3: SOT-223 (3) G: Halogen Free and Lead Free</p>
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### MARKING



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT	
Repetitive Peak Off-State Voltage		$V_{DRM}$	600	V	
Repetitive Peak Reverse Voltage		$V_{RRM}$	600	V	
RMS On-State Current	full sine wave, $T_{sp} \leq 103^{\circ}C$	$I_{T(RMS)}$	1	A	
Non-Repetitive Peak On-State Current	full sine wave, $T_J \leq 25^{\circ}C$ prior to surge	$I_{TSM}$	$t=20ms$	12.5	A
			$t=16.7ms$	13.8	A
$I^2t$ for Fusing	$t_p=10ms$	$I^2t$	1.28	$A^2s$	
Rate of Rise of On-State Current	$I_{TM}=1A, I_G=20mA, di_G/dt=0.2A/\mu s$	$di_T/dt$	T2+G+	50	$A/\mu s$
			T2+G-	50	$A/\mu s$
			T2-G-	50	$A/\mu s$
			T2-G+	10	$A/\mu s$
Peak Gate Current		$I_{GM}$	1	A	
Peak Gate Power		$P_{GM}$	2	W	
Average Gate Power	Over any 20ms period	$P_{G(AV)}$	0.1	W	
Storage Temperature		$T_{STG}$	-40 ~ +150	$^{\circ}C$	
Junction Temperature		$T_J$	125	$^{\circ}C$	

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.

### ■ THERMAL RESISTANCES

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Junction to Case		$\theta_{JC}$			15	K/W
Junction to Ambient	For minimum footprint	$\theta_{JA}$		156		K/W
	For pad area			70		K/W

### ■ ELECTRICAL CHARACTERISTICS ( $T_J=25^{\circ}C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Gate Trigger Current	$I_{GT}$	$V_D=12V, I_T=0.1A$	T2+G+		3	mA
			T2+G-		3	mA
			T2-G-		3	mA
			T2-G+		5	mA
Gate Trigger Voltage	$V_{GT}$	$V_D=12V, I_T=0.1A$			1.3	V
		$V_D=V_{DRM}, I_T=0.1A, T_J=125^{\circ}C$	0.2			V
Holding Current	$I_H$	$V_D=12V, I_G=0.1A$			7	mA
Latching Current	$I_L$	$V_D=12V, I_G=0.1A$	T2+G+		7	mA
			T2+G-		20	mA
			T2-G-		7	mA
			T2-G+		7	mA
On-State Voltage	$V_T$	$I_T=1A$		1.3	1.6	V
Off-State Current	$I_D$	$V_D=V_{DRM(max)}, T_J=125^{\circ}C$			0.5	mA
Rate of Rise of Off-State Voltage	$dV_D/dt$	$V_{DM}=0.67V_{DRM(max)}, T_J=110^{\circ}C$ , exponential waveform, gate open circuit	10			$V/\mu s$
Rate of Change of Commutating Voltage	$dV_{com}/dt$	$V_{DM}=400V, T_J=110^{\circ}C, I_{TM}=1A$ , $di_{com}/dt=0.44A/ms$	0.5			$V/\mu s$

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