



UT134F/G

TRIAC

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DESCRIPTION

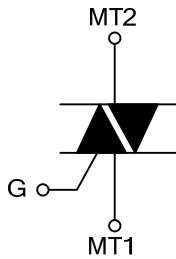
The UTC **UT134F/G** is a triacs, it uses UTC's advanced technology to provide customers with high bidirectional transient and high thermal cycling performance.

The UTC **UT134F/G** is suitable for motor control, heating and static switching, etc.

FEATURES

- * High bidirectional transient
- * High thermal cycling performance
- * Blocking voltage capability

SYMBOL

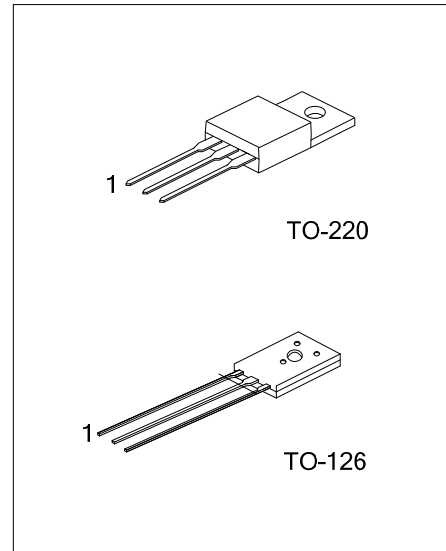


ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UT134FL-x-TA3-T	UT134FG-x-TA3-T	TO-220	MT1	MT2	G	Tube
UT134FL-x-T60-K	UT134FG-x-T60-K	TO-126	MT1	MT2	G	Bulk
UT134GL-x-TA3-T	UT134GP-x-TA3-T	TO-220	MT1	MT2	G	Tube
UT134GL-x-T60-K	UT134GP-x-T60-K	TO-126	MT1	MT2	G	Bulk

Note: Pin Assignment: G: Gate

<p>UT134FL-x-TA3-T</p> <p>(1)Packing Type (2)Package Type (3)Peak Voltage (4)Green Package</p>	<p>(1) T: Tube, K: Bulk (2) TA3: TO-220, T60: TO-126 (3) 5: 500V, 6: 600V, 8: 800V (4) L: Lead Free, G: Halogen Free and Lead Free P: Halogen Free and Lead Free</p>
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■ MARKING

Package	UT134F	UT134G
TO-220	<p>UTC UT134F □ □□□□ → Data Code Lot Code ← □□□□ 1</p> <p>L: Lead Free G: Halogen Free</p>	<p>UTC UT134G □ □□□□ → Data Code Lot Code ← □□□□ 1</p> <p>L: Lead Free P: Halogen Free</p>
TO-126	<p>UTC □□□□ → Data Code UT134F □ 1</p> <p>L: Lead Free G: Halogen Free</p>	<p>UTC □□□□ → Data Code UT134G □ 1</p> <p>L: Lead Free P: Halogen Free</p>

■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive peak off-state voltages	UT134F/G-5	V_{DRM}	500	V
	UT134F/G-6		600 (Note 2)	V
	UT134F/G-8		800	V
RMS on-state current full sine wave; $T_{mb} \leq 107^\circ\text{C}$		$I_{T(RMS)}$	4	A
Non-repetitive peak on-state current (Full sine wave; $T_J = 25^\circ\text{C}$ prior to surge)	$t = 20\text{ms}$	I_{TSM}	25	A
	$t = 16.7\text{ms}$		27	
I^2t for fusing	$t = 10\text{ms}$	I^2t	3.1	A^2s
Repetitive rate of rise of on-state current after triggering $I_{TM}=20\text{A}; I_G=0.2\text{A}; d_{IG}/dt=0.2\text{A}/\mu\text{s}$	T2+ G+	di_T/dt	50	$\text{A}/\mu\text{s}$
	T2+ G-		50	$\text{A}/\mu\text{s}$
	T2- G-		50	$\text{A}/\mu\text{s}$
	T2- G+		10	$\text{A}/\mu\text{s}$
Peak gate voltage		V_{GM}	5	V
Peak gate current		I_{GM}	2	A
Peak gate power		P_{GM}	5	W
Average gate power (over any 20 ms period)		$P_{G(AV)}$	0.5	W
Junction Temperature		T_J	+125	$^\circ\text{C}$
Storage Temperature		T_{STG}	-40 ~ +150	$^\circ\text{C}$

Note: 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. Although not recommended, off-state voltages up to 800V may be applied without damage, but the triac may switch to the on-state. The rate of rise of current should not exceed $3\text{A}/\mu\text{s}$.

■ THERMAL RESISTANCES

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient	In Free Air	TO-220	θ_{JA}	60		$^\circ\text{C}/\text{W}$
		TO-126		100		$^\circ\text{C}/\text{W}$
Junction to mounting base	Full cycle	TO-220	θ_{JC}		2.0	$^\circ\text{C}/\text{W}$
		TO-126			3.0	$^\circ\text{C}/\text{W}$
	Half cycle	TO-220			2.4	$^\circ\text{C}/\text{W}$
		TO-126			3.7	$^\circ\text{C}/\text{W}$

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

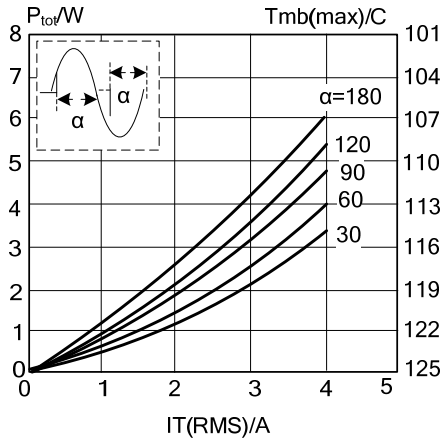
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX		UNIT		
					UT134F	UT134G			
Gate Trigger Current	I_{GT}	$V_D=12\text{V}, I_T=0.1\text{A}$			T2+G+	5	25	50	mA
					T2+G-	8	25	50	
					T2-G-	11	25	50	
					T2-G+	30	70	100	
Latching Current	I_L	$V_D=12\text{V}, I_{GT}=0.1\text{A}$			T2+G+	7	20	30	mA
					T2+G-	16	30	45	
					T2-G-	5	20	30	
					T2-G+	7	30	45	
Holding Current	I_H	$V_D=12\text{V}, I_{GT}=0.1\text{A}$		5	15	30	mA		
On-State Voltage	V_T	$I_T=5\text{A}$		1.4	1.7		V		
Gate Trigger Voltage	V_{GT}	$V_D=12\text{V}, I_T=0.1\text{A}$		0.7	1.5		V		
		$V_D=400\text{V}, I_T=0.1\text{A}, T_J=125^\circ\text{C}$	0.25	0.4			V		
Off-State Leakage Current	I_D	$V_D=V_{DRM(max)}, T_J=125^\circ\text{C}$		0.1	0.5		mA		

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

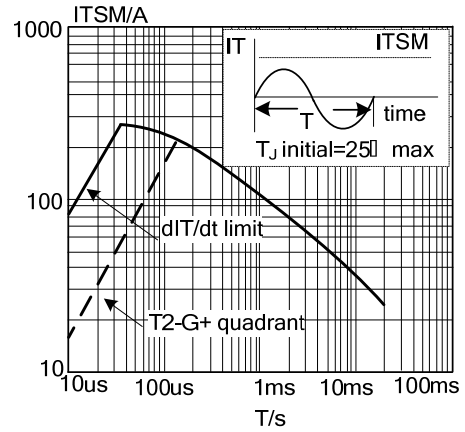
PARAMETER	SYMBOL	TEST CONDITIONS	MIN		TYP	MAX	UNIT
			UT134F	UT134G			
Critical Rate Of Rise Of Off-State Voltage	dV_D/dt	$V_{DM}=67\% V_{DRM(max)}$, $T_J=125^\circ\text{C}$, Exponential waveform, gate open circuit	50	200	250		V/ μs
Critical Rate Of Change Of Commutating Voltage	dV_{com}/dt	$V_{DM}=400\text{V}$, $T_J=95^\circ\text{C}$, $I_{T(RMS)}=4\text{A}$, $dI_{com}/dt=1.8\text{A/ms}$, gate open circuit		10	20		V/ μs
Gate Controlled Turn-On Time	t_{gt}	$I_{TM}=26\text{A}$, $V_D=V_{DRM(max)}$, $I_G=0.1\text{A}$, $dI_G/dt=5\text{A}/\mu\text{s}$			2		μs

TYPICAL CHARACTERISTICS

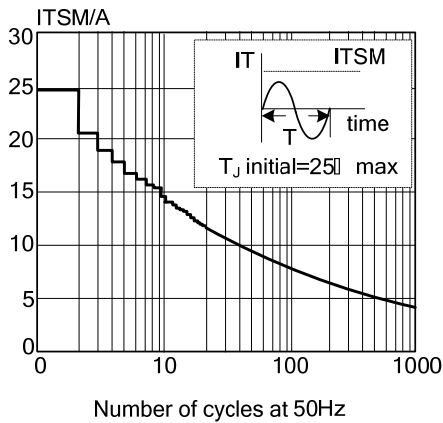
Maximum On-State Dissipation, P_{tot}
Versus Rms On-state Current, $I_{T(RMS)}$
where α =conduction angle.



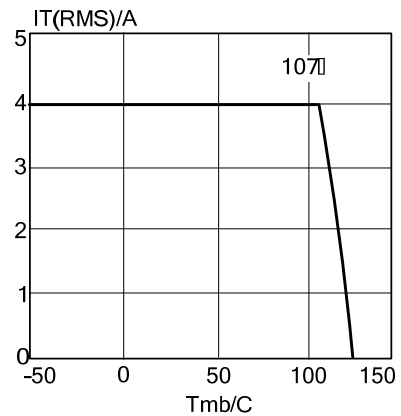
Maximum Permissible Non-repetitive
Peak On-state Current, I_{TSM} , Versus
Pulse Width t_p For Sinusoidal
Currents, $t_p \leq 20ms$



Maximum Permissible Non-repetitive Peak
On-state Current, I_{TSM} , Versus Number Of
Cycles, For Sinusoidal Currents, $f=50HZ$.



Maximum Permissible Rms Current,
 $I_{T(RMS)}$ Versus Mounting Base
Temperature, T_{mb}



Maximum Permissible Repetitive Rms
On-State Current, $I_{T(RMS)}$, Versus Surge
Duration, For Sinusoidal
Currents, $f=50HZ$, $T_{mb} \leq 107^\circ C$

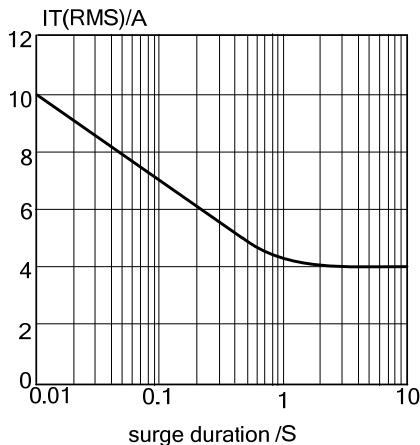
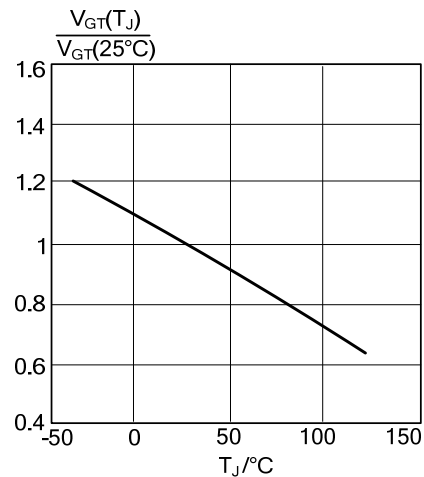
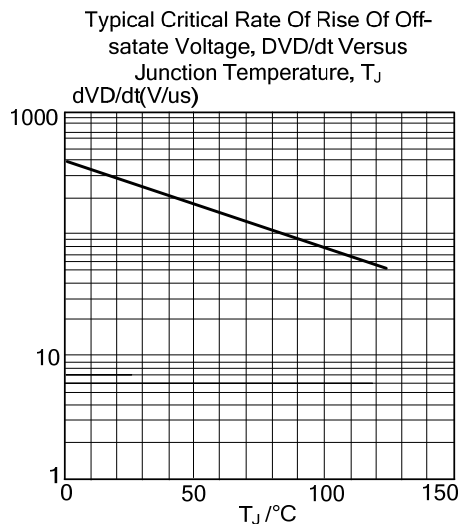
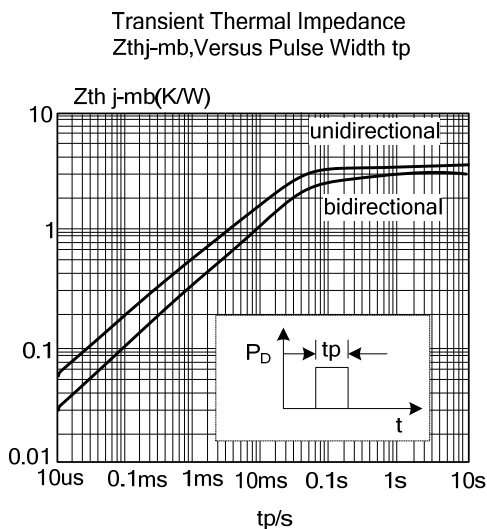
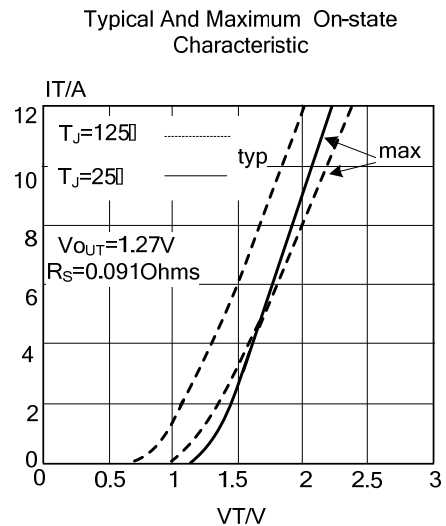
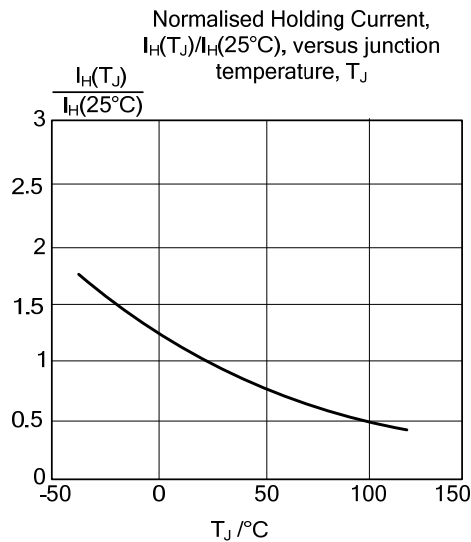
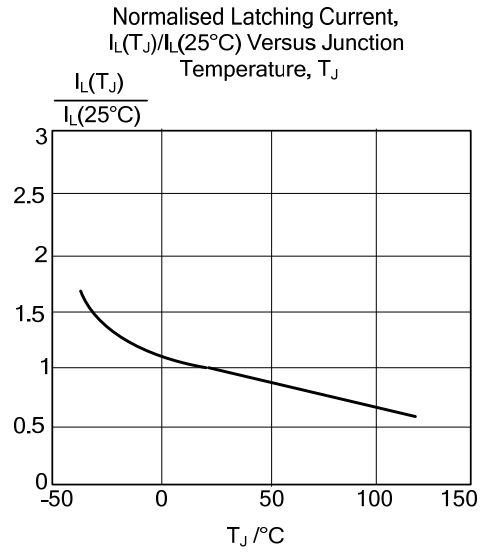
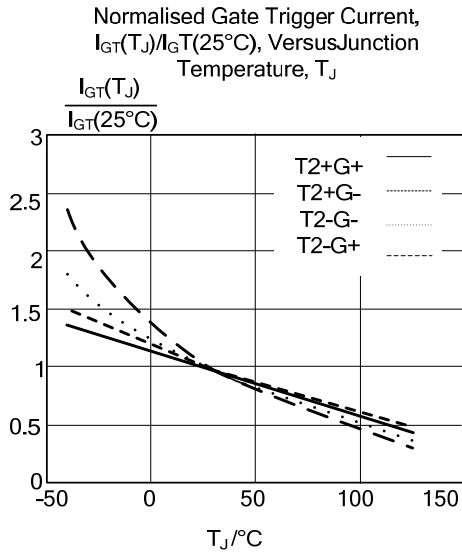


Fig 6. Normalised Gate Trigger
Voltage, $V_{GT}(T_J)/V_{GT}(25^\circ C)$,
Versus Junction Temperature, T_J



TYPICAL CHARACTERISTICS



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