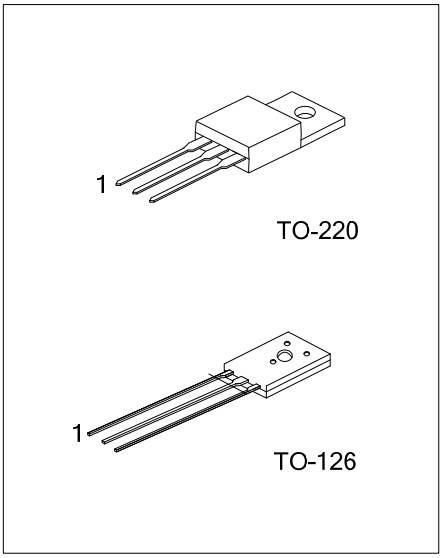
TRIAC



■ DESCRIPTION

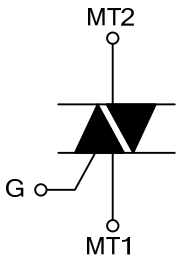
The UTC **UT134F/G** is a triacs, it uses UTC's advanced technology to provide customers with high bidirectional transient and high thermal cycling performance.

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

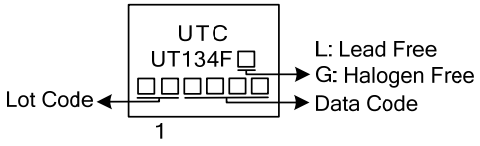
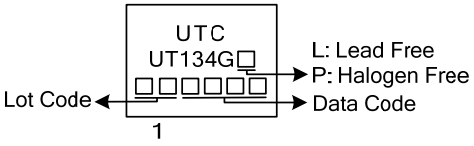
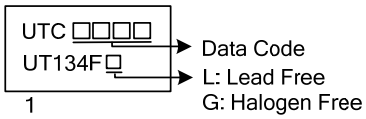
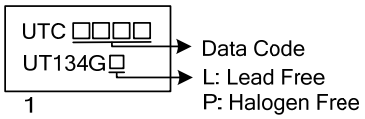
Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UT134FL-x-TA3-T	UT134FG-x-TA3-T	TO-220	MT1	MT2	G	Tube
UT134FL-x-T60-K	UT134FG-x-T60-K	TO-126	MT1	MT2	G	Bulk
UT134GL-x-TA3-T	UT134GP-x-TA3-T	TO-220	MT1	MT2	G	Tube
UT134GL-x-T60-K	UT134GP-x-T60-K	TO-126	MT1	MT2	G	Bulk

Note: Pin Assignment: G: Gate

UT134FL- x -TA3-T
(1)Packing Type
(2)Package Type
(3)Peak Voltage
(4)Green Package

(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

■ MARKING

Package	UT134F	UT134G
TO-220		
TO-126		

■ 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} ≤107°C		$I_{T(RMS)}$	4	A
Non-repetitive peak on-state current (Full sine wave; T_J = 25°C prior to surge)	t = 20ms	I_{TSM}	25	A
	t = 16.7 ms		27	
I^2t for fusing	t = 10 ms	I^2t	3.1	A^2s
Repetitive rate of rise of on-state current after triggering I_{TM}=20A; I_G=0.2A; d_{IG} /dt=0.2A/μs	T2+ G+	dI_T /dt	50	A/μs
	T2+ G-		50	A/μs
	T2- G-		50	A/μs
	T2- G+		10	A/μs
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	°C
Storage Temperature		T_{STG}	-40 ~ +150	°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 traic may switch to the on-state. The rate of rise of current should not exceed 3A/μs.

■ THERMAL RESISTANCES

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

■ STATIC CHARACTERISTICS (T_J=25°C, unless otherwise specified)

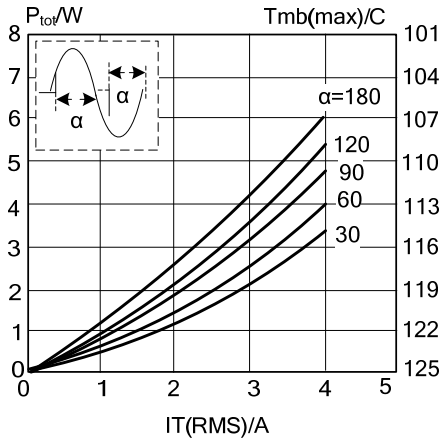
PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX		UNIT
						UT134F	UT134G	
Gate Trigger Current	I_{GT}	V_D=12V, I_T=0.1A	T2+G+		5	25	50	mA
			T2+G-		8	25	50	
			T2-G-		11	25	50	
			T2-G+		30	70	100	
Latching Current	I_L	V_D=12V, I_{GT}=0.1A	T2+G+		7	20	30	mA
			T2+G-		16	30	45	
			T2-G-		5	20	30	
			T2-G+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

■ DYNAMIC CHARACTERISTICS (T_J=25°C, unless otherwise specified)

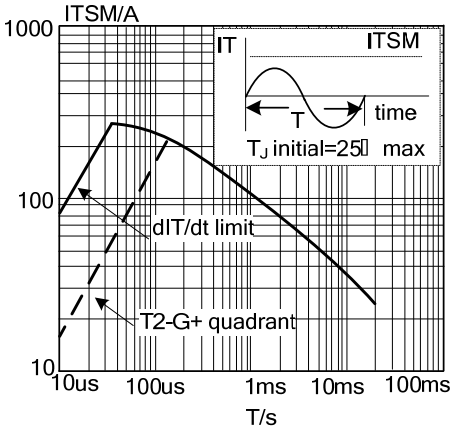
PARAMETER	SYMBOL	TEST CONDITIONS	MIN		TYP	MAX	UNIT
			UT134F	UT134G			
Critical Rate Of Rise Of Off-State Voltage	dV_D/dt	V_{DM}=67% $V_{DRM(max)}$, T_J=125°C, Exponential waveform, gate open circuit	50	200	250		V/μs
Critical Rate Of Change Of Commutating Voltage	dV_{com}/dt	V_{DM}=400V, T_J=95°C, $I_{T(RMS)}$=4A,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

■ TYPICAL CHARACTERISTICS

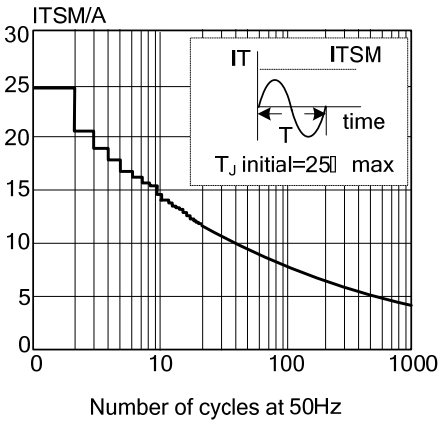
Maximum On-State Dissipation, P_{tot} Versus Rms On-state Current, $I_{T(RMS)}$ where α=conduction angle.



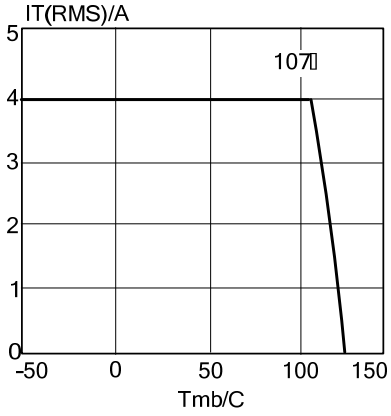
Maximum Permissible Non-repetitive Peak On-state Current, ITSM, Versus Pulse Width tp For Sinusoidal Currents, tp 20ms



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, Tmb 107°C

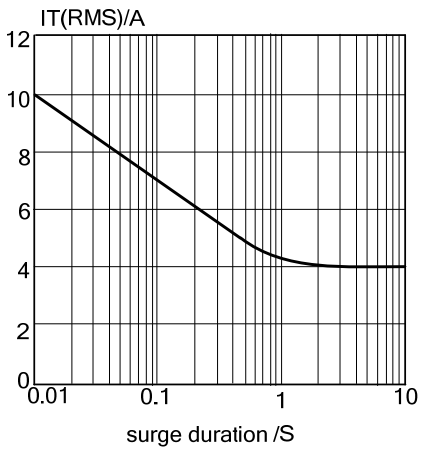
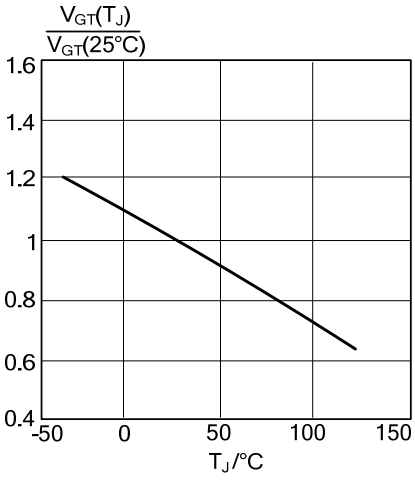
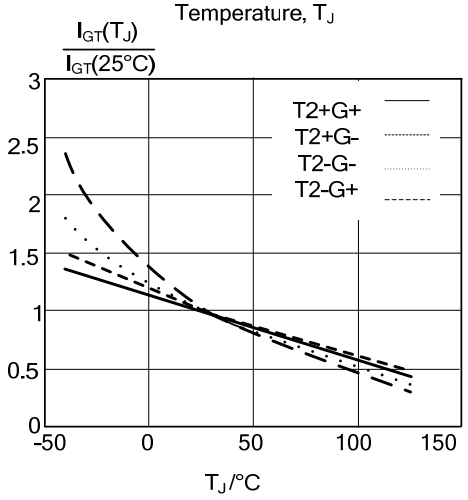


Fig 6. Normalised Gate Trigger Voltage, $V_{GT}(T_J)/V_{GT}(25°C)$, Versus Junction Temperature, T_J

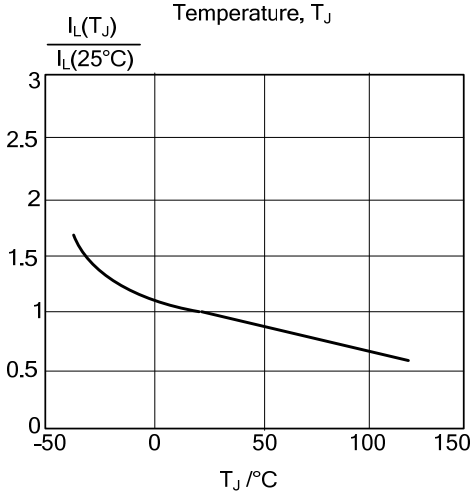


■ TYPICAL CHARACTERISTICS

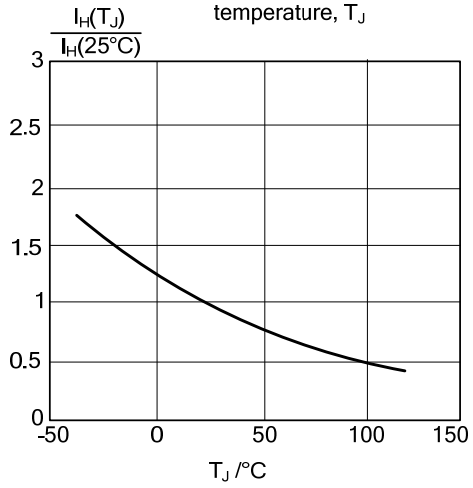
Normalised Gate Trigger Current, $I_{GT}(T_J)/I_{GT}(25°C)$, VersusJunction Temperature, T_J



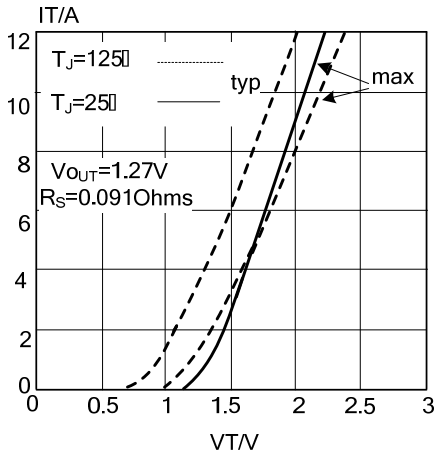
Normalised Latching Current, $I_L(T_J)/I_L(25°C)$ Versus Junction Temperature, T_J



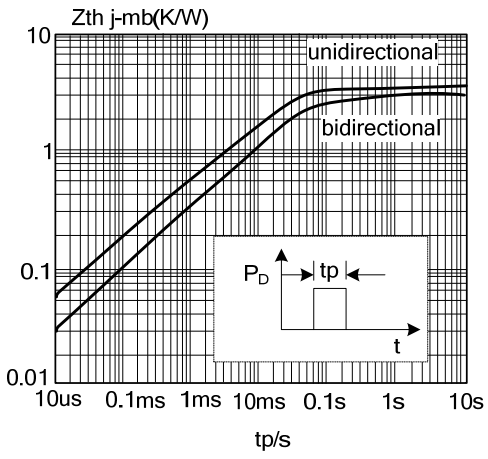
Normalised Holding Current, $I_H(T_J)/I_H(25°C)$, versus junction temperature, T_J



Typical And Maximum On-state Characteristic



Transient Thermal Impedance Zthj-mb,Versus Pulse Width tp



Typical Critical Rate Of Rise Of Off-satate Voltage, DVD/dt Versus Junction Temperature, T_J