



UT137

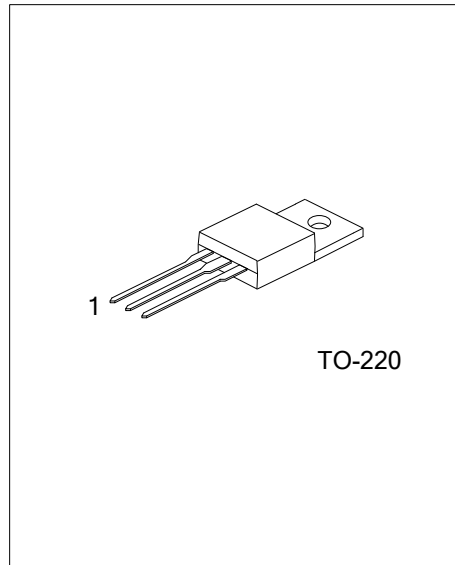
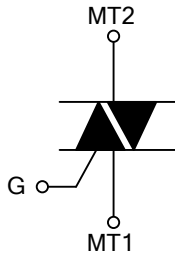
TRIAC

TRIACS

DESCRIPTION

Passivated triacs in a plastic envelope, intended for use in applications requiring high bidirectional transient and blocking voltage capability and high thermal cycling performance. Typical applications include motor control, industrial and domestic lighting, heating voltages and static switching.

SYMBOL



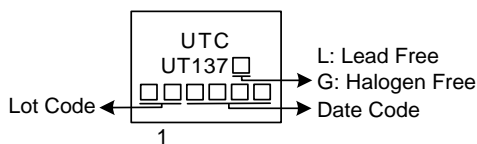
ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UT137L-x-TA3-T	UT137G-x-TA3-T	TO-220	MT1	MT2	G	Tube

Note: Pin Assignment: G: Gate

<p>UT137G-x-TA3-T</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Peak Voltage (4) Green Package 	<ul style="list-style-type: none"> (1) T: Tube (2) TA3: TO-220 (3) 6: 600V, 8: 800V (4) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



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

PARAMETER		SYMBOL	RATINGS		UNIT
Repetitive peak off-state voltages	UT137-6	V _{DRM}	600 (Note2)	-600	V
	UT137-8		800	-800	V
RMS on-state current full sine wave; T _{mb} ≤ 99°C		I _{T(RMS)}	8		A
Non-repetitive peak on-state current (Full sine wave; T _J = 25°C prior to surge)	t=20ms	I _{TSM}	65		A
	t=16.7ms		71		
I ² t for fusing	t=10ms	I ² t	21		A ² s
Repetitive rate of rise of on-state current after triggering I _{TM} =20A; I _G =0.2A; dI _G /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 triac may switch to the on-state. The rate of rise of current should not exceed 6A/μs.

■ THERMAL RESISTANCES

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Thermal resistance Junction to Ambient	In Free Air	θ _{JA}		60		°C/W
Thermal resistance Junction to mounting base	Full cycle	θ _{JC}			2.0	°C/W
	Half cycle				2.4	°C/W

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

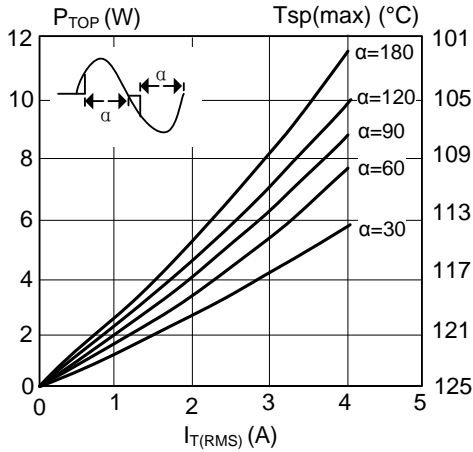
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT		
Gate Trigger Current	I _{GT}	V _D =12V, I _T =0.1A				T2 + G+	35	mA
						T2 + G-	35	mA
						T2 - G-	35	mA
						T2 - G+	70	mA
Latching Current	I _L	V _D =12V, I _{GT} =0.1A				T2 + G+	30	mA
						T2 + G-	45	mA
						T2 - G-	30	mA
						T2 - G+	45	mA
Holding Current	I _H	V _D =12V, I _{GT} =0.1A			20	mA		
On-State Voltage	V _T	I _T =10A			1.65	V		
Gate Trigger Voltage	V _{GT}	V _D =12V, I _T =0.1A			1.5	V		
		V _D =400V, I _T =0.1A, T _J =125°C	0.25			V		
Off-State Leakage Current	I _D	V _D =V _{DRM(MAX)} , T _J =125°C			0.5	mA		

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

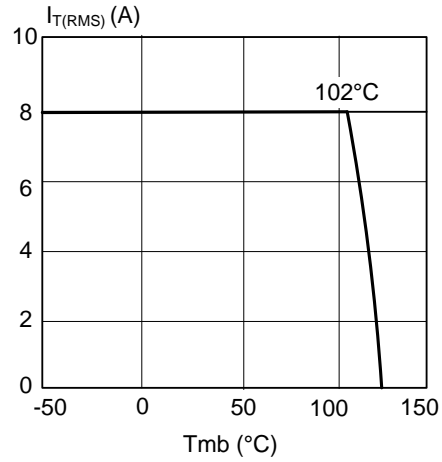
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Critical Rate of Rise of Off-State Voltage	dV _D /dt	V _{DM} =67% V _{DRM(MAX)} , T _J =125°C, Exponential waveform, gate open circuit	100	250		V/μs
Critical Rate Of Change Of Commutating Voltage	dV _{com} /dt	V _{DM} =400V, T _J =95°C, I _{T(RMS)} =8A, dI _{com} /dt=3.6A/ms, gate open circuit		20		V/μs
Gate Controlled Turn-On Time	t _{GT}	I _{TM} =12A, V _D = V _{DRM(MAX)} , I _G =0.1A, dI _G /dt=5A/μs		2		μs

■ TYPICAL CHARACTERISTICS

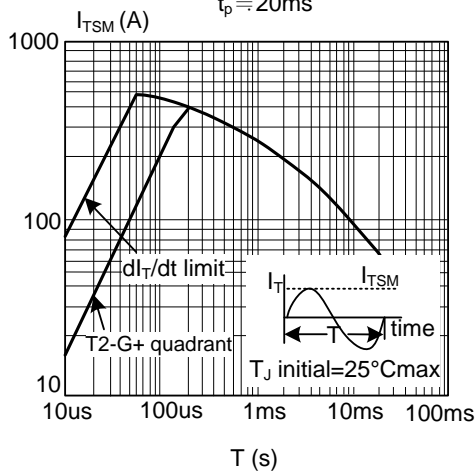
Maximum On -State Dissipation. P_{TOT} vs. RMS On-State Current, $I_{T(RMS)}$, Where α =conduction Angle



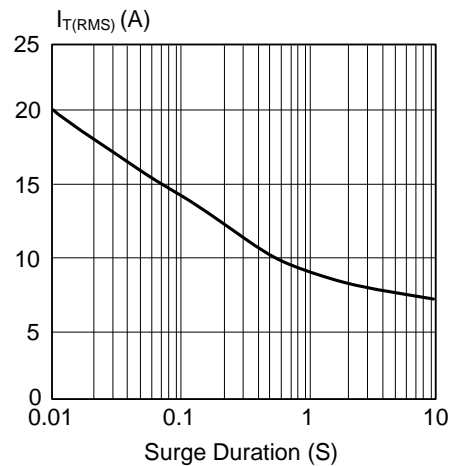
Maximum Permissible RMS Current $I_{T(RMS)}$ vs. Versus Heatsink Temperature T_{mb}



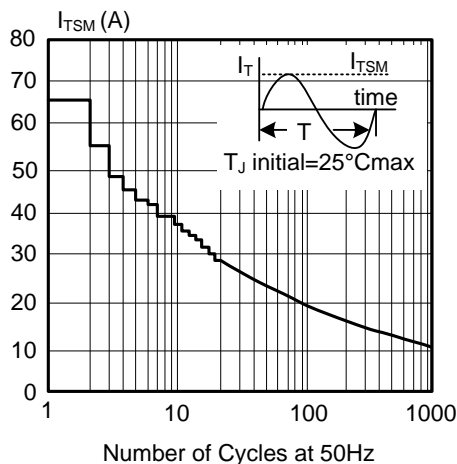
Maximum Permissible Non-Repetitive Peak On-State Current I_{TSM} vs. Pulse Width t_p , for Sinusoidal Currents, $t_p \approx 20ms$



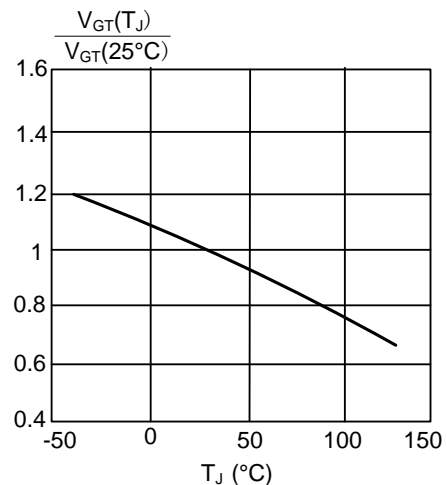
Maximum Permissible Repetitive RMS On-State Current $I_{T(RMS)}$ vs. Versus Surge Duration, for Sinusoidal Currents, $f=50Hz$, $T_{mb} \le 102^\circ C$



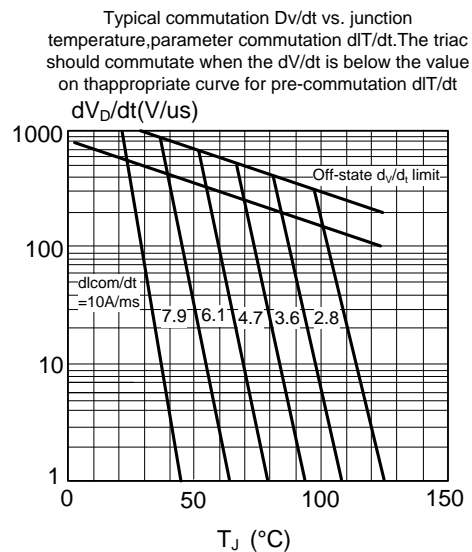
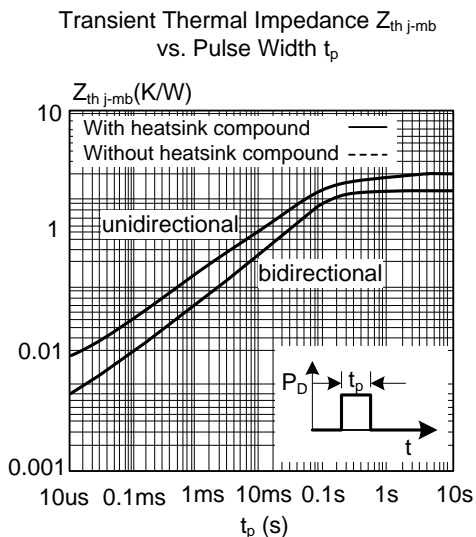
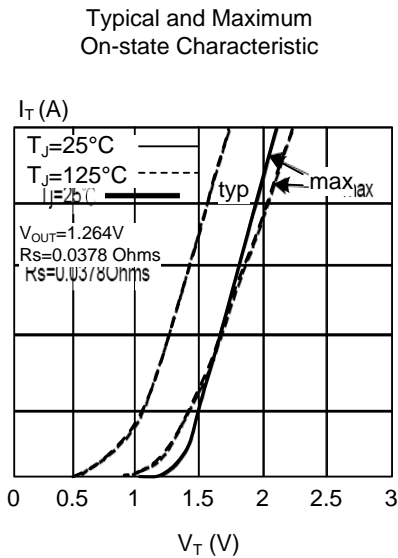
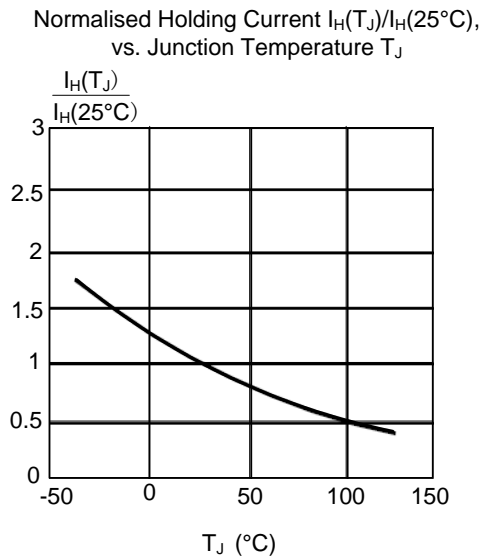
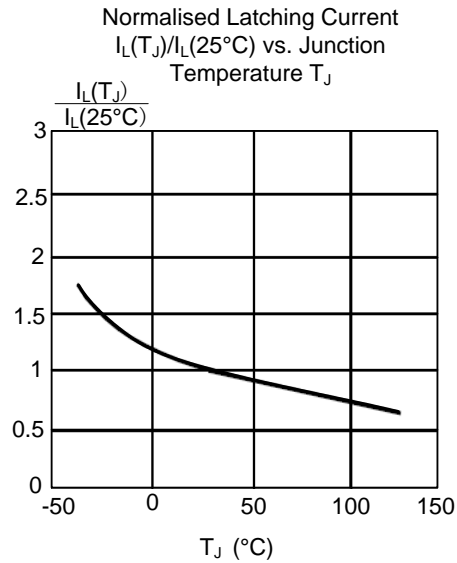
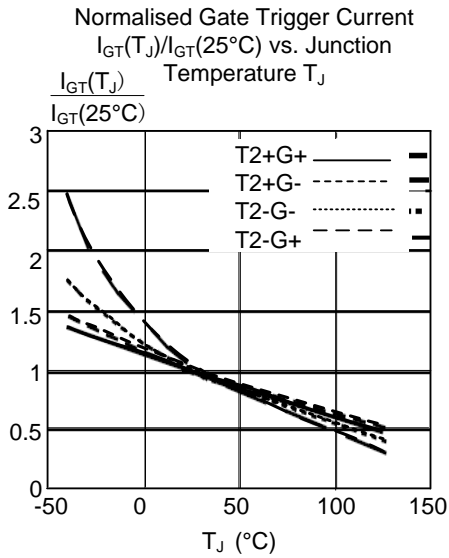
Maximum Permissible Non-Repetitive Peak On-State Current I_{TSM} vs. Number of Cycles, for Sinusoidal Currents, $f=50Hz$



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



■ TYPICAL CHARACTERISTICS (Cont.)



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