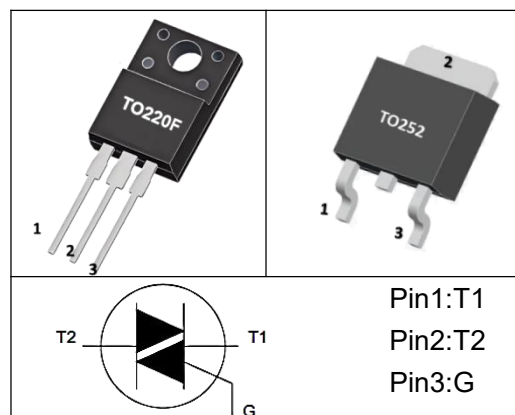




■ GENERAL DESCRIPTION

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 and static switching.



■ ABSOLUTE MAXIMUM RATINGS (TC=25°C, unless otherwise specified)

SYMBOL	PARAMETER		TEST CONDITION	RATINGS	UNIT
V_{DRM}	Repetitive Peak Off State Voltage	BT137	T _j =25°C	800	V
I_{T(RMS)}	RMS On-State Current(full sine wave;T _{mb} <=102°C)			8	A
I_{TSM}	Non Repetitive Peak. On-State Current (full sine wave, T _j =25°C prior to surge))	t=20ms		65	A
		t=16.7ms		17	
I² t	I ² t For Fusing	t=10ms		21	A ² s
dI_T /dt	Repetitive Rate of Rise of On-state Current after Triggering I _{TM} =12A;I _G =0.2A,dI _G /dt=0.2A/μs	T2+ G+		50	A/μs
		T2+ G-		50	
		T2- G-		50	
		T2- G+		10	
V_{GM}	Peak Gate Voltage			5	V
I_{GM}	Peak Gate Current			2	A
P_{G(AV)}	Average Gate Power (Over any 20ms period)			0.5	W
P_{GM}	Peak Gate Power			5	W
T_{stg}	Storage Temperature			-40 to +150	°C
T_j	Operating junction temperature			125	°C

Notes: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	RATINGS	UNIT
Junction to Ambient	TO-252/TO-220F	$R\theta_{JA}$	62.5	$^{\circ}\text{C}/\text{W}$
Junction to Case	TO-220F	$R\theta_{JC}$	3.31	$^{\circ}\text{C}/\text{W}$
	TO-252		2.6	$^{\circ}\text{C}/\text{W}$

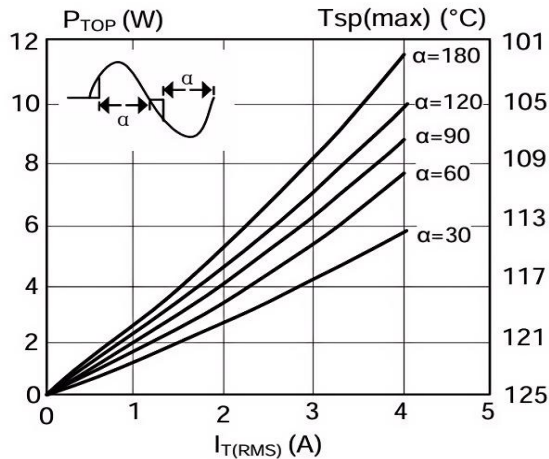
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS							
On-State Voltage	V _T	I _T =10A			1.3	1.65	V
Gate trigger current	I _{GT}	T2+, G+	V _D =12V, I _T =0.1A		3	5	mA
		T2+, G -			3	5	mA
		T2-, G -			3	5	mA
		T2-, G +			8	15	mA
Latching Current	I _L	T2+, G+	V _D =12V, I _T =0.1A		5	10	mA
		T2+, G -			6	12	mA
		T2-, G -			5	10	mA
		T2-, G +			5	10	mA
Gate Trigger Voltage	V _{GT}	V _D =12V, I _T =0.1A			0.8	1.2	V
		V _D =400V, I _T =0.1A ; T _J =125°C		0.25	0.4		V
Holding Current	I _H	V _D =12V, I _{GT} =0.1A			5	20	mA
Off-state Leakage Current	I _D	V _D =V _{DRM(max)} , T _J =125°C			0.1	0.5	mA
DYNAMIC CHARACTERISTICS							
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	dVcom/dt	V _{DM} =400V , T _J =95°C, I _{T(RMS)} =8A dlcom/dt =3.6A/ms Gate open circuit			20		V/μs
Gate Controlled Turn-on Time	tgt	I _{TM} =12A,V _D =V _{DRM(max)} ,I _G =0.1A dl _G /dt=5A/μs			2		μs

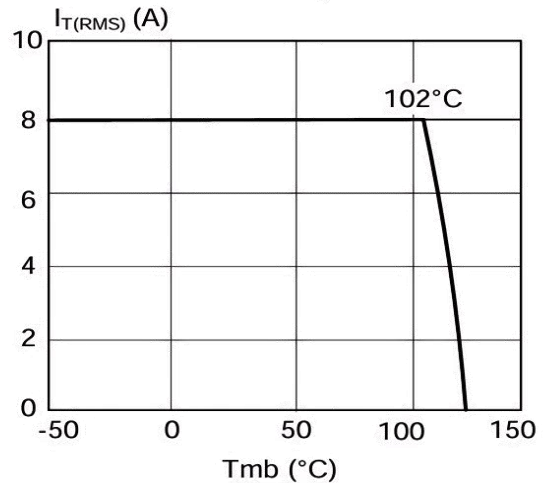


■ TYPICAL CHARACTERISTICS (1)

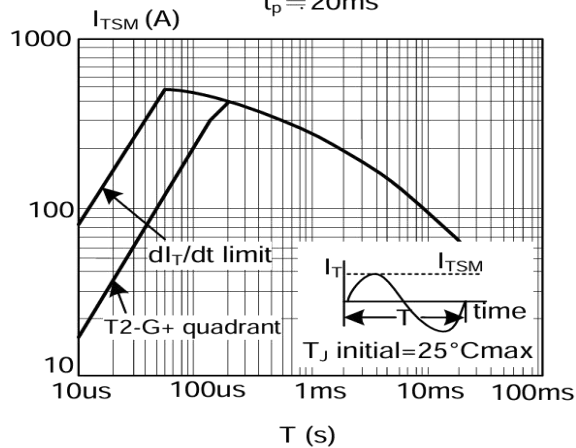
Maximum On -State Dissipation. P_{Tot} vs. RMS On-State Current, $I_{T(RMS)}$, Where α =conduction Angle



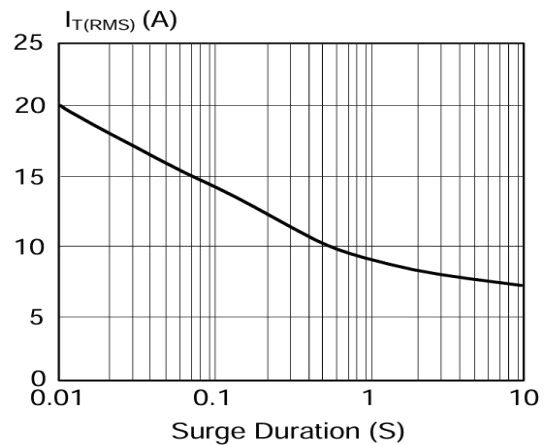
Maximum Permissible RMS Current $I_{T(RMS)}$ vs. Versus Heatsink Temperature T_{mb}



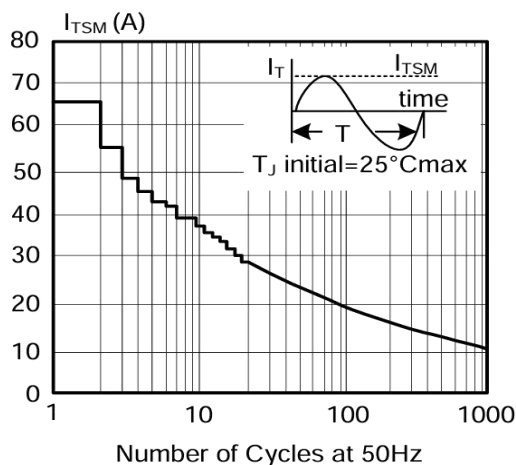
Maximum Permissible Non-Repetitive Peak On-State Current I_{TSM} vs. Pulse Width t_p , for Sinusoidal Currents, $t_p \approx 20ms$



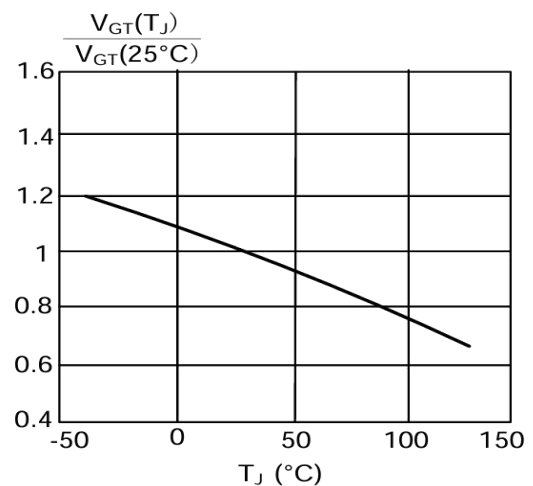
Maximum Permissible Repetitive RMS On-State Current $I_{T(RMS)}$ vs. Versus Surge Duration, for Sinusoidal Currents, $f=50Hz$, $T_{mb} \leq 102^\circ C$



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

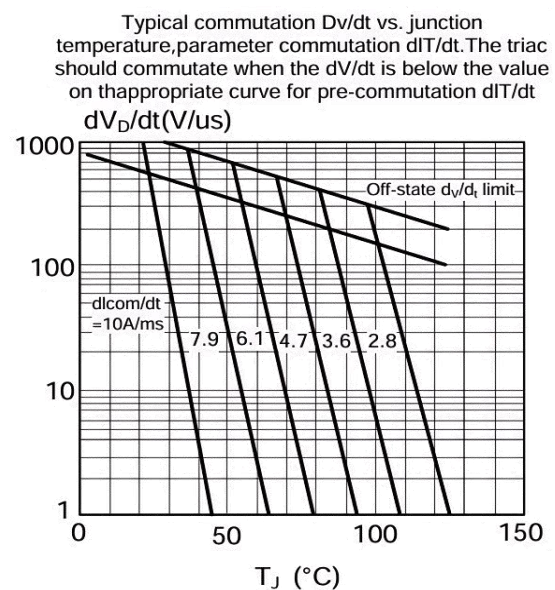
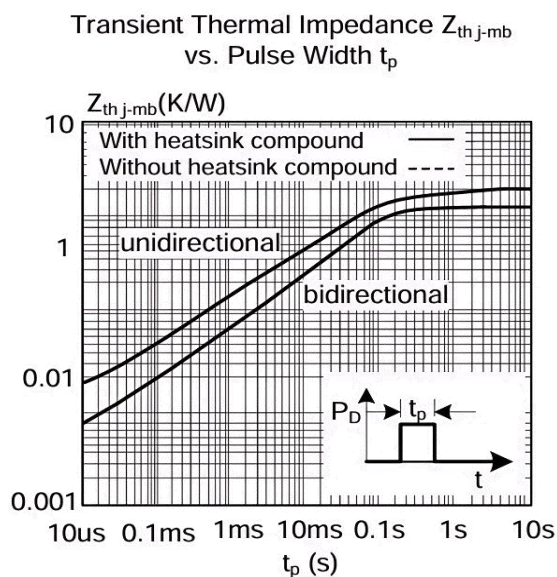
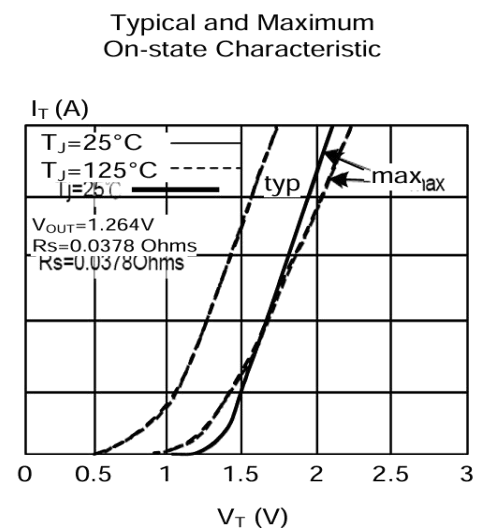
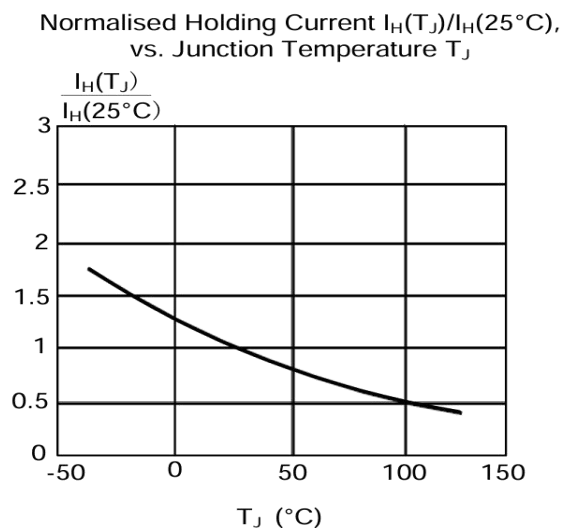
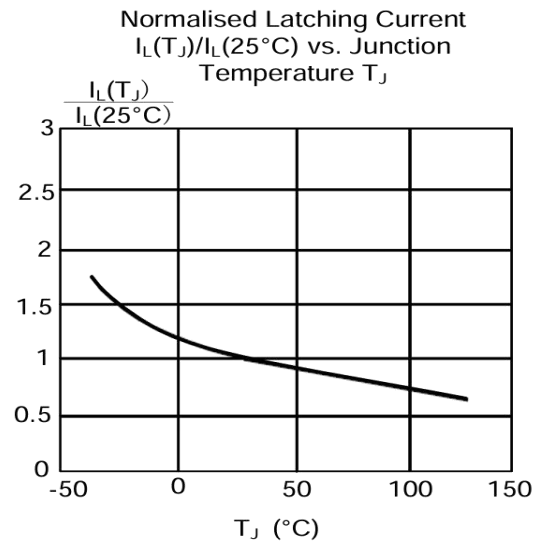
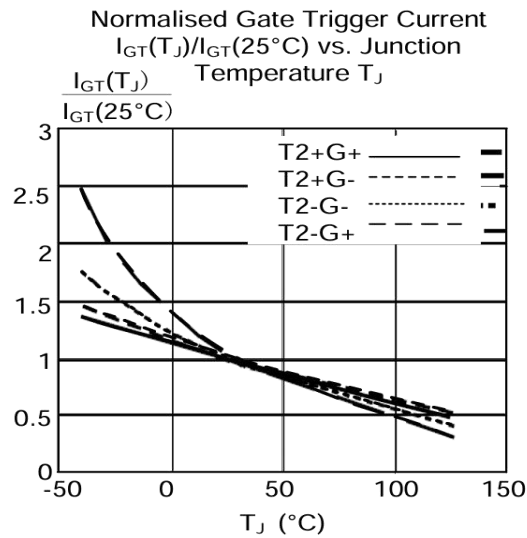


Normalised Gate Trigger Voltage $V_{GT}(T_J)/V_{GT}(25^\circ C)$ vs. Junction Temperature T_J



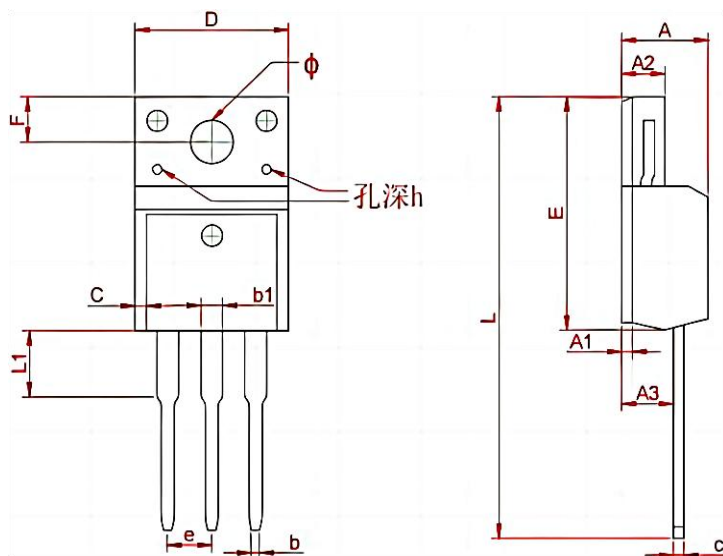


■ TYPICAL CHARACTERISTICS (2)





■ TO - 220F Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max	Min	Max
A	4.300	4.750	0.169	0.185
A1	1.830 REF		0.072 REF	
A2	2.300	2.850	0.090	0.112
A3	2.500	2.900	0.098	0.114
b	0.400	0.420	0.016	0.016
b1	1.220	1.280	0.048	0.050
C	0.690	0.720	0.027	0.028
c	0.490	0.510	0.019	0.020
D	9.960	10.200	0.392	0.400
E	15.000	15.950	0.588	0.625
e	2.574 TYP		0.101TYP	
F	3.470 REF		0.136 REF	
y	3.200 REF		0.125 REF	
h	0.000	0.300	0.000	0.012
L	28.780	28.900	1.128	1.133
L1	2.990	3.100	0.117	0.122



■ TO - 252 Package Outline Dimensions

