



1A 500V/600V BIDIRECTIONAL TRIACS

Description:

Glasspassivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications. These devices are intended to be interfaced directly to micro controllers, logic integrated circuits and other low power gate trigger circuits.

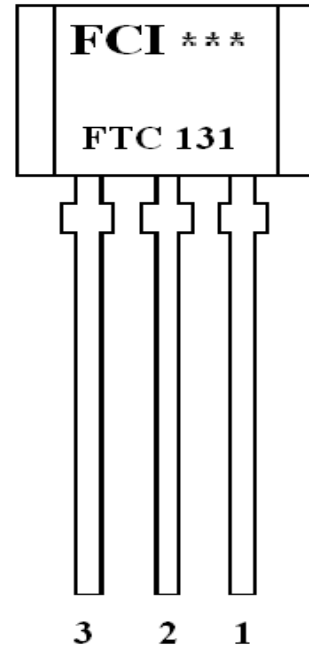
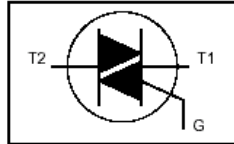
FTC131

V_{DRM} 500V/600 V

$I_{T(RMS)}$ 1A

I_{TSM} 16A

SYMBOL



Pinning :TO-92: DESCRIPTION

Pin1: Main Terminal 2

Pin 2: G

Pin 3: Main Terminal 3

LIMITING VALUES

Limiting values in accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
				-500 500	-600 600	
V_{DRM}	Repetitive peak off-state voltages		-			V
$I_{T(RMS)}$	RMS on-state current	full sine wave; $T_{lead} \leq 51^\circ C$	-	1		A
I_{TSM}	Non-repetitive peak on-state current	full sine wave; $T_j = 25^\circ C$ prior to surge	-	16		A
		$t = 20$ ms	-	17.6		A
		$t = 16.7$ ms	-	1.28		A ² s
I^2t	I^2t for fusing	$t = 10$ ms	-			A ² s
di_T/dt	Repetitive rate of rise of on-state current after triggering	$I_{TM} = 1.5$ A; $I_G = 0.2$ A; $di_G/dt = 0.2$ A/ μ s	-			
		T2+ G+	-	50		A/ μ s
		T2+ G-	-	50		A/ μ s
		T2- G-	-	50		A/ μ s
		T2- G+	-	10		A/ μ s
I_{GM}	Peak gate current		-	2		A
V_{GM}	Peak gate voltage		-	5		V
P_{GM}	Peak gate power		-	5		W
$P_{G(AV)}$	Average gate power	over any 20 ms period	-	0.5		W
T_{stg}	Storage temperature		-40	150		$^\circ C$
T_j	Operating junction temperature		-	125		$^\circ C$

1 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 A/ μ s.



1A 500V/600V BIDIRECTIONAL TRIACS

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-lead}$	Thermal resistance junction to lead	full cycle	-	-	60	K/W
		half cycle	-	-	80	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	pcb mounted; lead length = 4mm	-	150	-	K/W

STATIC CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{GT}	Gate trigger current	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$				
		T2+ G+	-	0.4	3	mA
		T2+ G-	-	1.3	3	mA
		T2- G-	-	1.4	3	mA
		T2- G+	-	3.8	7	mA
I_L	Latching current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$				
		T2+ G+	-	1.2	5	mA
		T2+ G-	-	4.0	8	mA
		T2- G-	-	1.0	5	mA
		T2- G+	-	2.5	8	mA
I_H	Holding current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$	-	1.3	5	mA
V_T	On-state voltage	$I_T = 2.0\text{ A}$	-	1.2	1.5	V
V_{GT}	Gate trigger voltage	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$	-	0.7	1.5	V
		$V_D = 400\text{ V}; I_T = 0.1\text{ A}; T_j = 125\text{ }^\circ\text{C}$	0.2	0.3	-	V
I_D	Off-state leakage current	$V_D = V_{DRM(max)}; T_j = 125\text{ }^\circ\text{C}$	-	0.1	0.5	mA

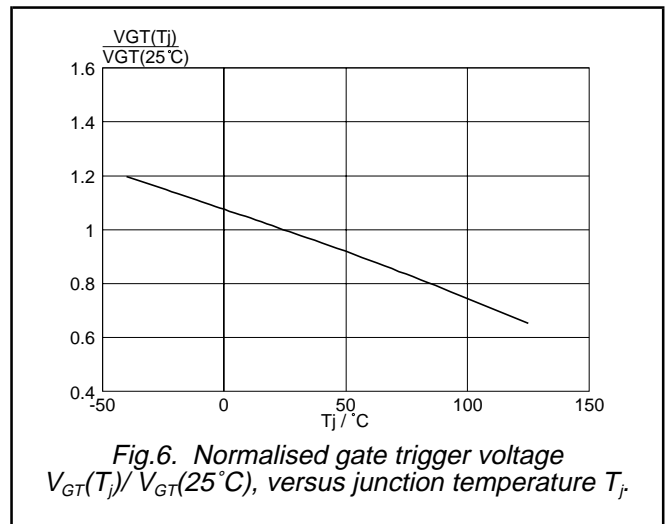
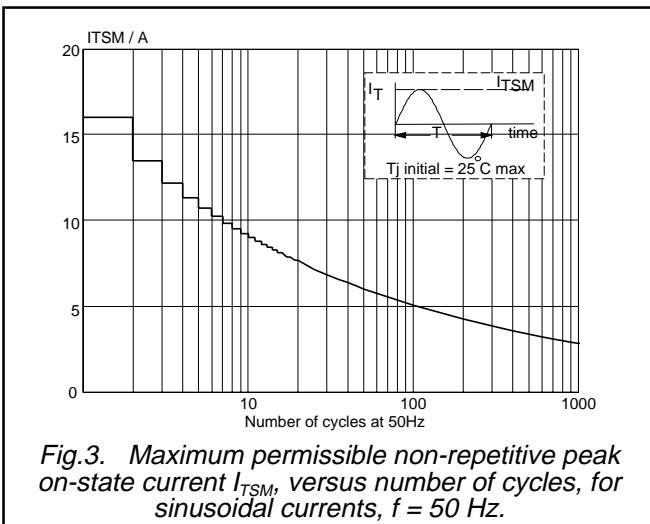
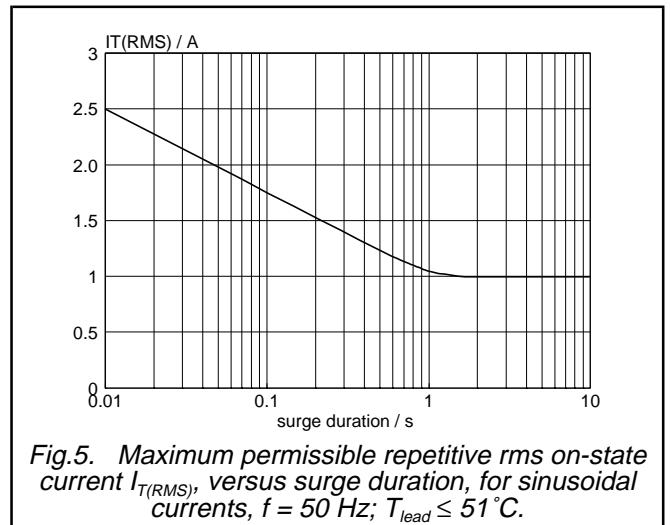
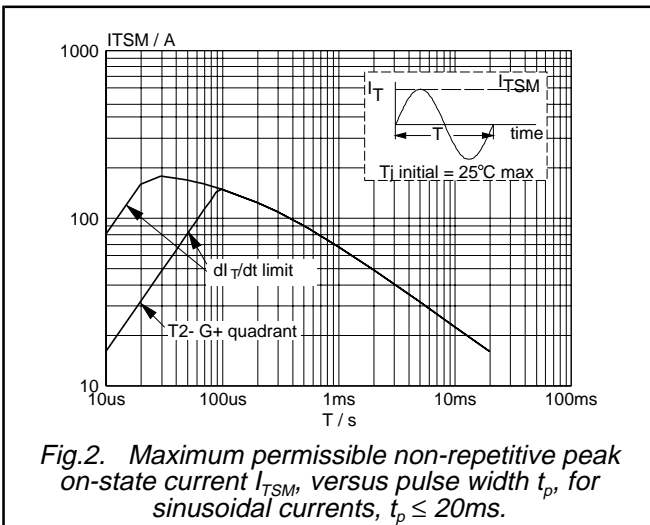
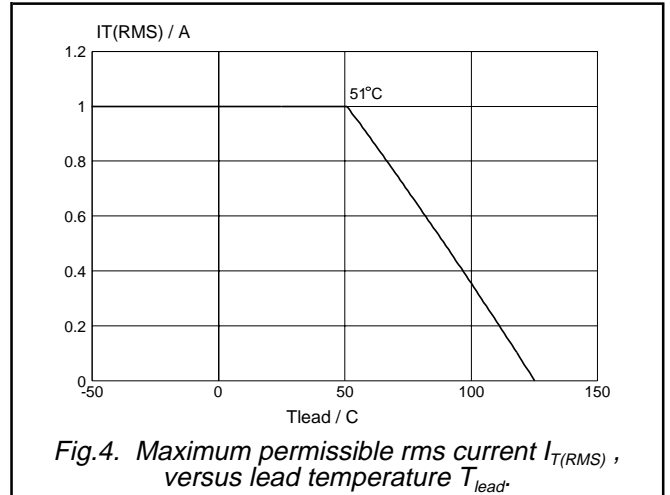
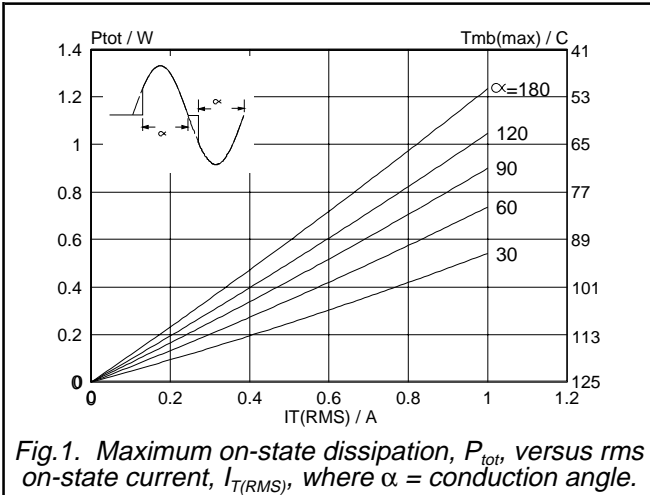
DYNAMIC CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
dV_D/dt	Critical rate of rise of off-state voltage	$V_{DM} = 67\% V_{DRM(max)}; T_j = 125\text{ }^\circ\text{C};$ exponential waveform; $R_{GK} = 1\text{ k}\Omega$	5	15	-	V/ μs
t_{gt}	Gate controlled turn-on time	$I_{TM} = 1.5\text{ A}; V_D = V_{DRM(max)}; I_G = 0.1\text{ A};$ $di_G/dt = 5\text{ A}/\mu\text{s}$	-	2	-	μs



1A 500V/600V BIDIRECTIONAL TRIACS





1A 500V/600V BIDIRECTIONAL TRIACS

