

## BT152

单向可控硅  
THYRISTOR

版本号  
201603-A

### 产品概述 GENERAL DESCRIPTION

BT152 单向可控硅采用穿通隔离台面结构，复合玻璃钝化PN结表面保护工艺技术，dv/dt高，可靠性高，适用于控温、调光、马达控制。

BT152 Thyristor is fabricated using separation diffusion processes ,the junction termination areas are passivated with glass. Thanks to highly dv/dt and reliability,the Triacs series is suitable for domestic lighting ,heating and motor speed controllers.

### 主要参数 MAIN CHARACTERISTICS

参数 Parameter	数值 Value	单位 Unit
$I_{T(RMS)}$	20	A
$V_{DRM}/V_{RRM}$	800	V
$I_{GT}$	15-20	mA



TO-220AB

### 产品特性 FEATURES

- dv/dt高
- 通态压降低
- Rohs环保产品
- Highly dv/dt
- Low on-state voltage
- Rohs Products

### 应用领域 APPLICATIONS

主要应用于调光、控温、马达控制。

domestic lighting ,heating and motor speed controllers.

## 极限值(除非另有规定, Tj=25℃) ABSOLUTE RATINGS

(Tj=25℃, unless otherwise specified)

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
I <sub>T(RMS)</sub>	RMS 通态电流 RMS on-state current (full sine wave)	T <sub>C</sub> =90℃	20 A
I <sub>TSM</sub>	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz, t=20ms	210 A
I <sup>2</sup> t	I <sup>2</sup> t 耗散值 I <sup>2</sup> t value for fusing	T <sub>p</sub> =10ms	220.5 A <sup>2</sup> s
di/dt	通态电流上升值 Critical rate of rise of on-state current	F=120Hz, Tj=125℃	50 A/μs
I <sub>GM</sub>	门极峰值电流 Peak gate current	T <sub>p</sub> =20μs, Tj=125℃	5 A
P <sub>G(AV)</sub>	平均门极耗散功率 Average gate power dissipation	Tj=125℃	1 W
T <sub>stg</sub>	贮存结温范围 Storage junction temperature range		-40+150 ℃
T <sub>j</sub>	工作结温范围 Operating junction temperature range		-40+150 ℃

## 电参数(除非另有规定, Tj=25℃) ELECTRICAL CHARACTERISTICS

(Tj=25℃, unless otherwise specified)

参数 Parameter	符号 Symbol	规范值 Value			单位 Unit	测试条件 Test Conditions
		Min	Typ	Max		
触发电流 Gate trigger current	I <sub>GT</sub>	-	-	32	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
触发电压 Gate trigger voltage	V <sub>GT</sub>	-	0.7	1.3	V	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
维持电流 Holding current	I <sub>H</sub>	-	16	40	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
擎住电流 Latching current	I <sub>L</sub>	-	21	60	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
电压上升率 Rise of off-state voltage	dv/dt	300	-	-	V/μS	V <sub>D</sub> =67%V <sub>DRM</sub>
通态压降 Peak on-state voltage	V <sub>TM</sub>	-	-	1.5	V	I <sub>T</sub> =32A
断态漏电流 Peak repetitive forward blocking current	I <sub>DRM</sub>	-	-	5	μA	V <sub>RRM</sub> =V <sub>DRM</sub> , Tj=25℃
	I <sub>RRM</sub>	-	-	1	mA	V <sub>RRM</sub> =V <sub>DRM</sub> , Tj=150℃

## 热特性 THERMAL RESISTANCES

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
R <sub>th(j-c)</sub>	Junction to case(AC)	1.3	K/W
R <sub>th(j-a)</sub>	Junction to ambient	60	K/W

## 特征曲线 ELECTRICAL CHARACTERISTICS (CURVES)

图1 最大耗散功率与RMS通态电流关系 Fig.1.Maximum Power Dissipation Versus on-state current

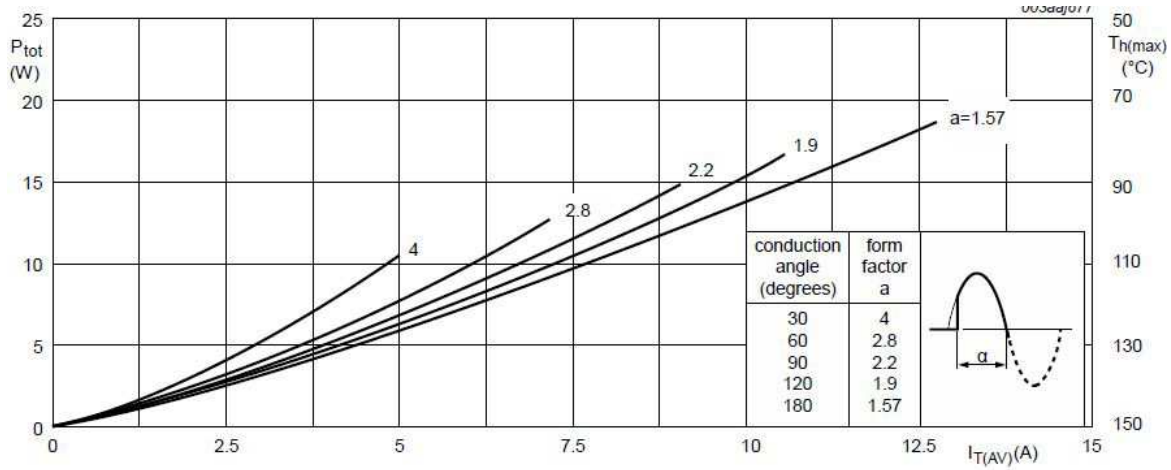


图2 RMS通态电流与Tc温度关系

Fig.2. RMS On-state Current Versus TL

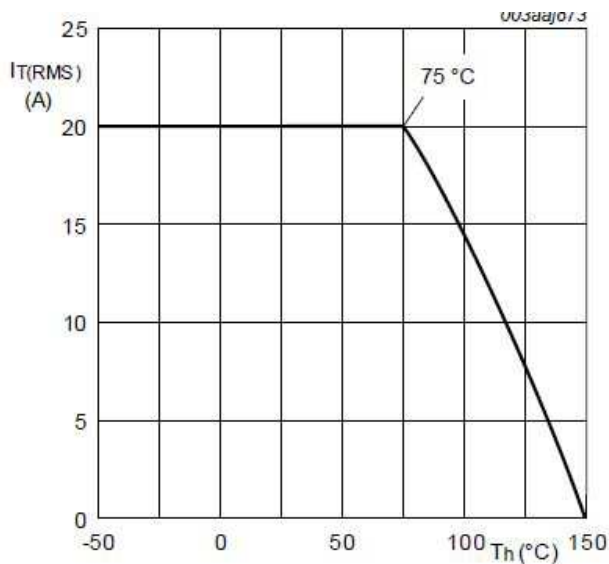
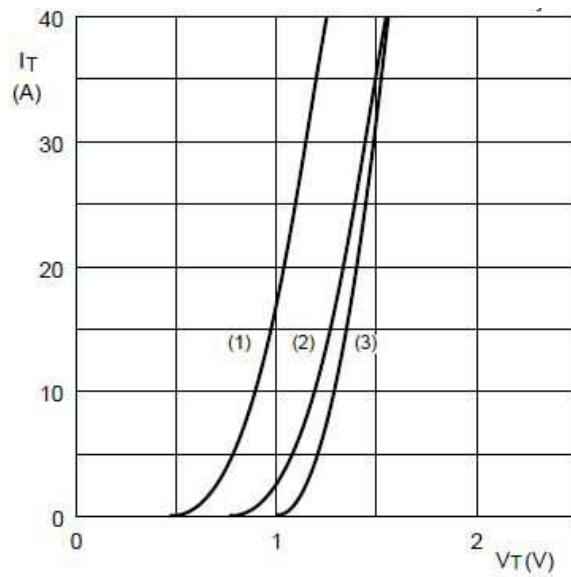


图3 通态特性 Fig.3.On-State Characteristics



$V_o = 1.0485 \text{ V}; R_s = 0.0133 \Omega$

- (1)  $T_j = 150 \text{ }^\circ\text{C}$ ; typical values
- (2)  $T_j = 150 \text{ }^\circ\text{C}$ ; maximum values
- (3)  $T_j = 25 \text{ }^\circ\text{C}$ ; maximum values

图4 通态浪涌峰值电流与周期数关系

Fig.4.Surge Peak On-state Current Versus Number Cycles

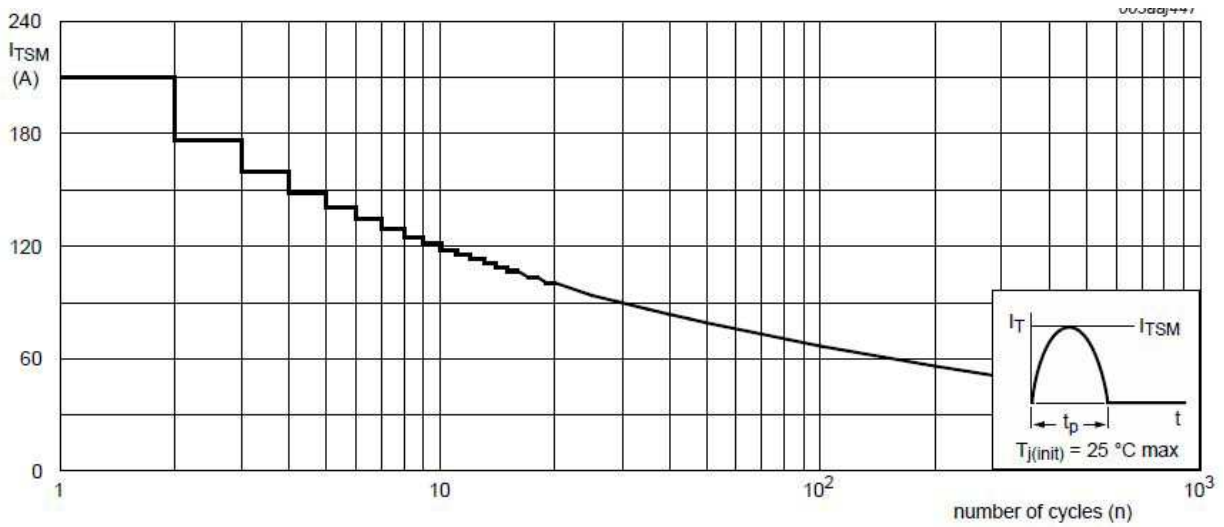
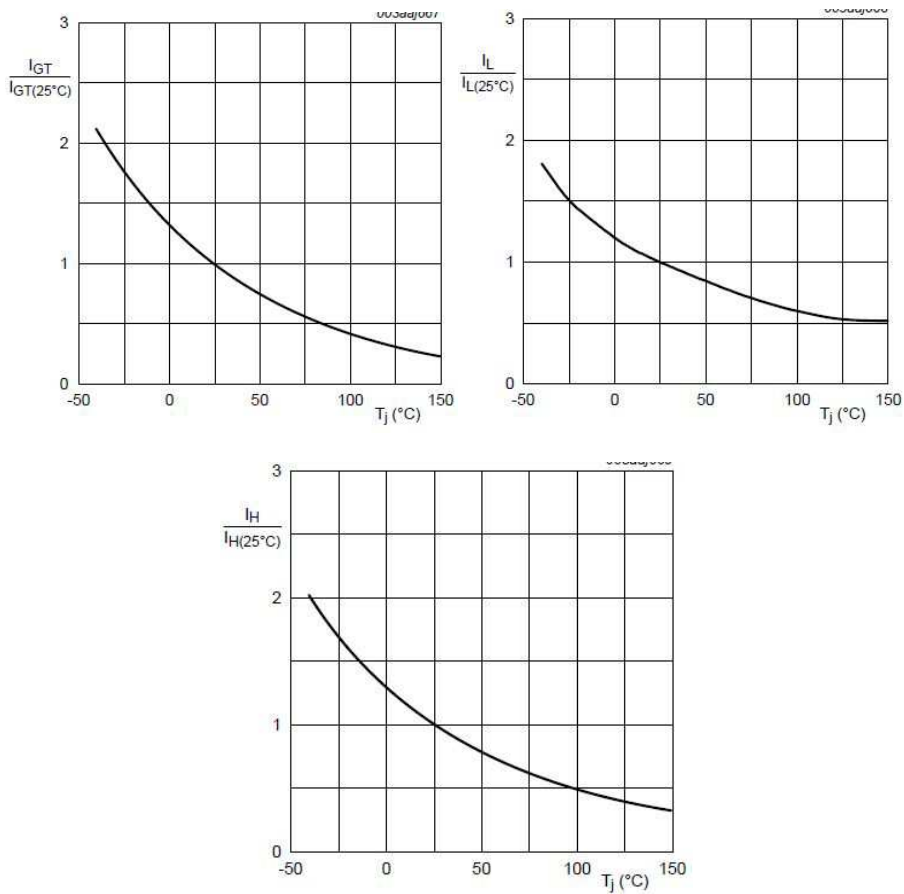


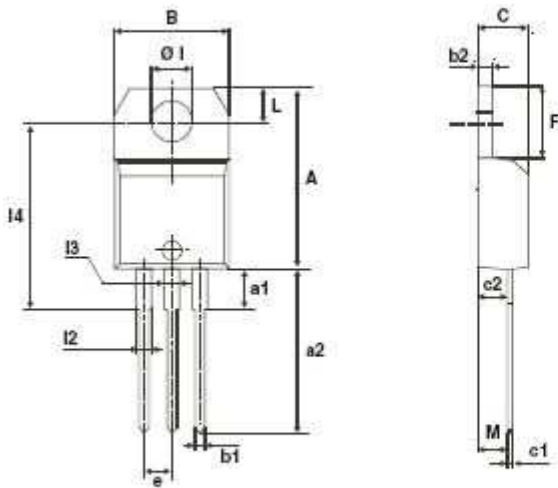
图5 IGT、IH、IL相对值（相对于25°C）与结温关系

Fig.5.Relative Variation Of Gate Trigger Current, Holding Current And Latching Current Versus Junction Temperature (Typical Value)



**封装尺寸 PACKAGE MECHANICAL DATA**

**TO-220AB**



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.40		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
Ø1	3.75		3.85	0.147		0.151
l4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
l2	1.14		1.70	0.044		0.066
l3	1.14		1.70	0.044		0.066
M		2.60			0.102	

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