

**4A 3Quadrants TRIACs**

**Product Summary**

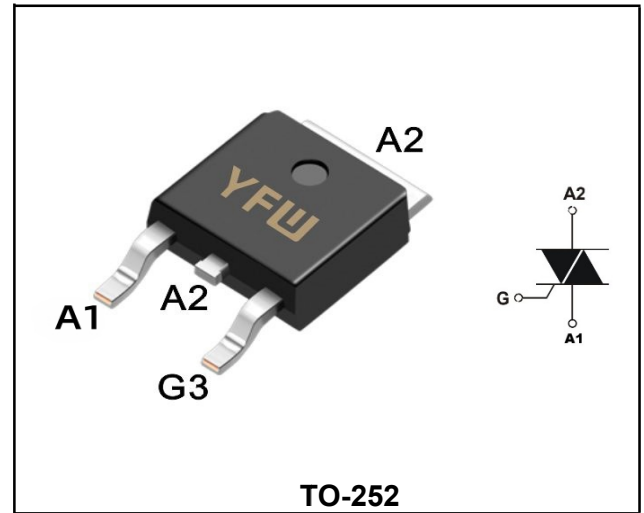
Symbol	Value	Unit
$I_{T(RMS)}$	4	A
$V_{DRM} V_{RRM}$	600/800	V
$V_{TM}$	1.6	V

**Features**

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

**Application**

Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.



**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	$V_{DRM}$	600/800	V
Repetitive peak reverse voltage	$V_{RRM}$	600/800	V
RMS on-state current	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	35	A
$I^2t$ value for fusing (tp=10ms)	$I^2t$	8	A <sup>2</sup> S
Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )	$di_T/dt$	I - II - III   50	A/ $\mu$ s
Peak gate current	$I_{GM}$	4	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Junction Temperature	$T_J$	-40~+125	°C
Storage Temperature	$T_{STG}$	-40 ~+150	°C

**Electrical characteristics (TA=25°C, unless otherwise noted)**

Parameter	Symbol	Test Condition	Value				Unit	
			TW	SW	CW	BW		
Gate trigger current	I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =30Ω	I - II - III	5	10	35	50	<b>mA</b>
Gate trigger voltage	V <sub>GT</sub>		I - II - III	1.3				<b>V</b>
Non-triggering gate voltage	V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> , R <sub>L</sub> =3.3kΩ, T <sub>J</sub> =125°C	0.2				<b>V</b>	
Holding current	I <sub>H</sub>	I <sub>T</sub> =100mA	I - III	10	20	45	60	<b>mA</b>
Latching current	I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub> ,	I - III	10	20	50	70	<b>mA</b>
			II	15	35	70	80	
Critical-rate of rise of commutation voltage	dV/dt	V <sub>D</sub> =67%V <sub>DRM</sub> , T <sub>J</sub> =125°C		20	200	500	1000	<b>V/μs</b>

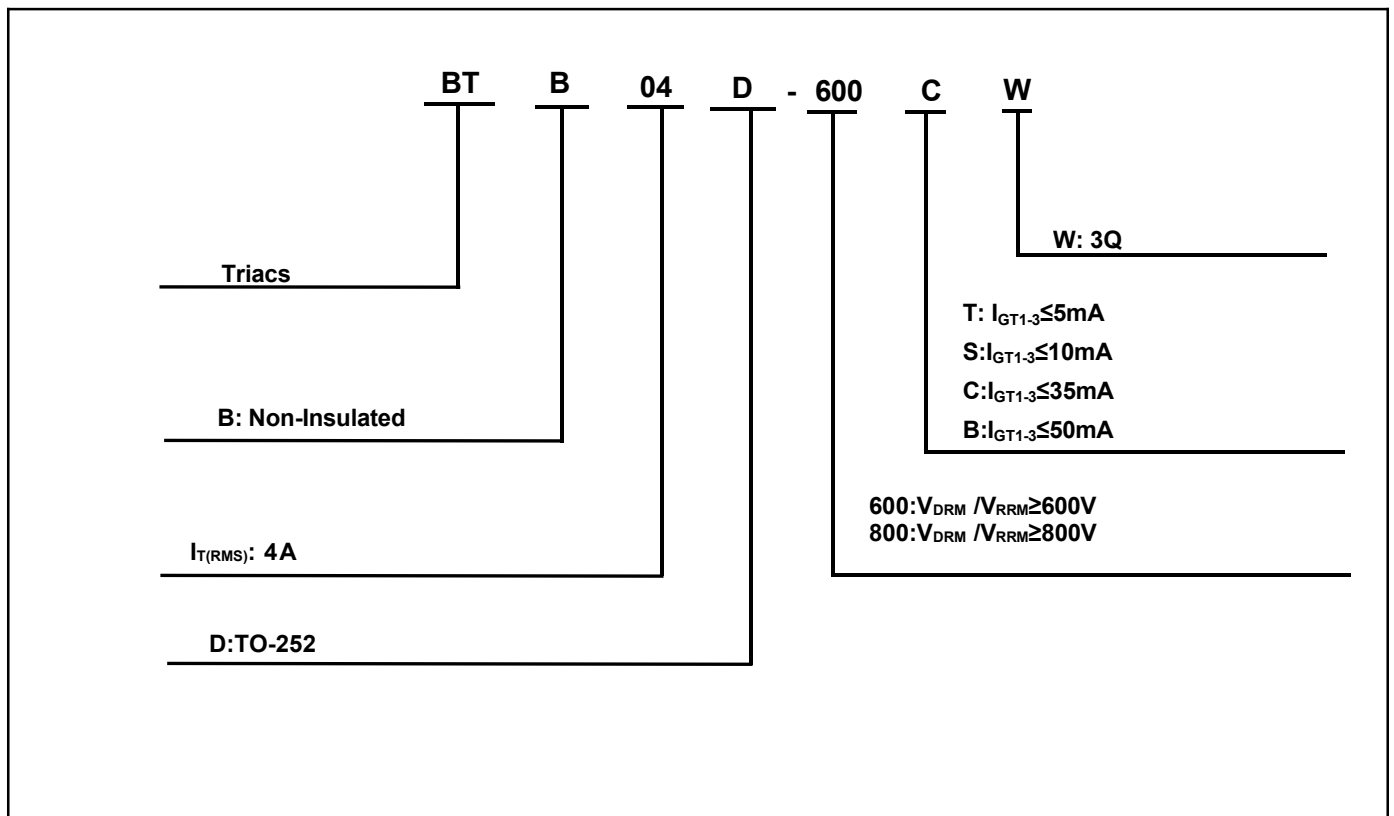
**STATIC CHARACTERISTICS**

On-state Voltage	V <sub>TM</sub>	I <sub>TM</sub> =5.5A, t <sub>p</sub> =380μs	1.6				<b>V</b>
Repetitive Peak Off-State Current	I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> = V <sub>RPM</sub>	T <sub>J</sub> =25°C	10	10	10	<b>μA</b>
Repetitive Peak Reverse Current	I <sub>RRM</sub>		T <sub>J</sub> =125°C	1	1	1	<b>mA</b>

**THERMAL RESISTANCES**

Thermal resistance	R <sub>th(j-c)</sub>	Junction to case	TYP.	6.0	°C/W
	R <sub>th(j-a)</sub>	Junction to ambient	TYP.	70	°C/W

**Ordering Information**



Typical Characteristics

FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

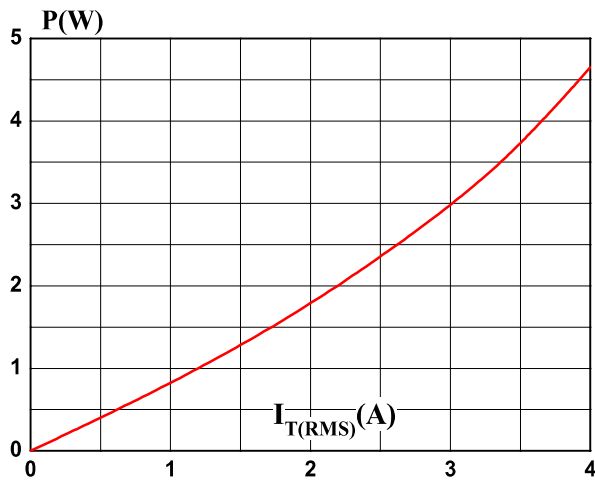


FIG.2: RMS on-state current versus case temperature (full cycle)

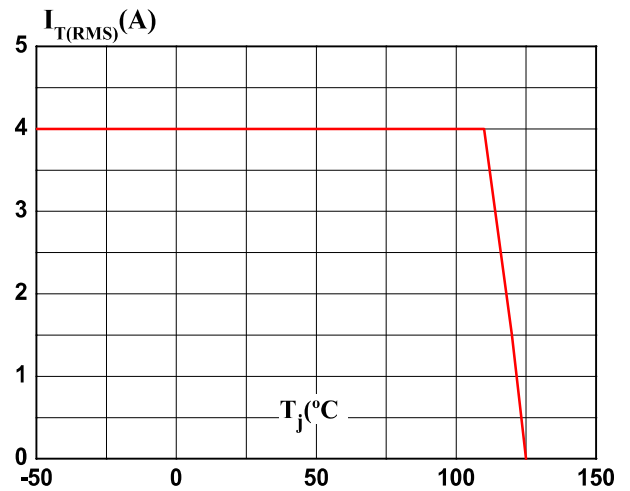


FIG.3: Surge peak on-state current versus number of cycles

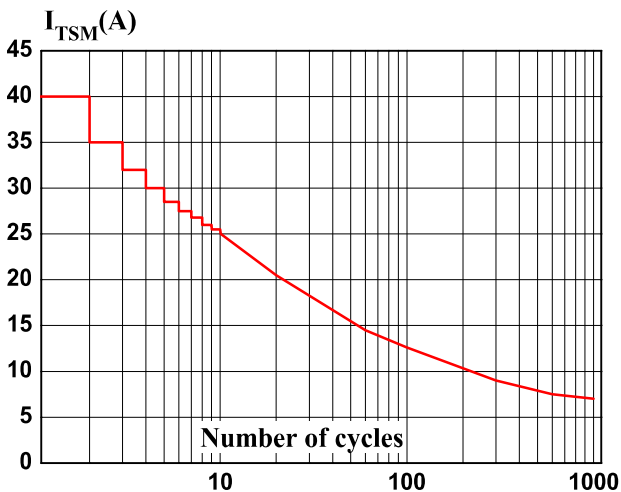


FIG.4: On-state characteristics (maximum values)

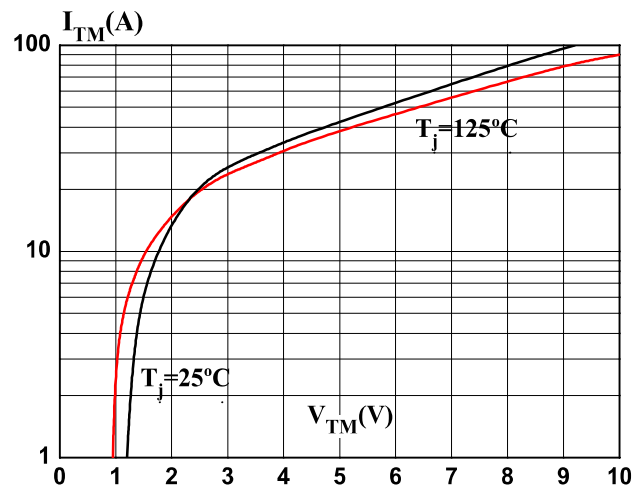


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$

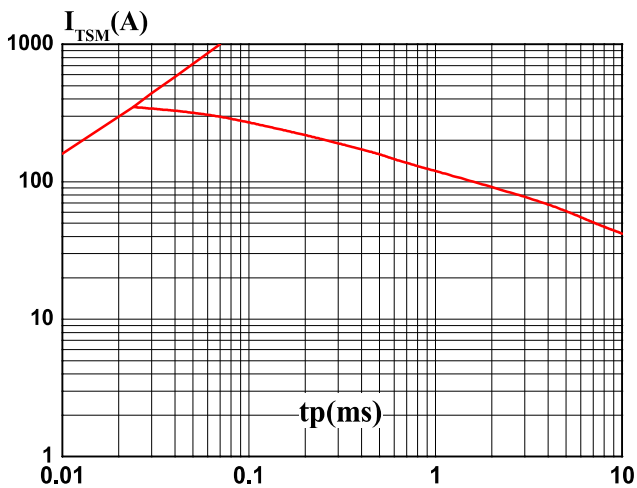
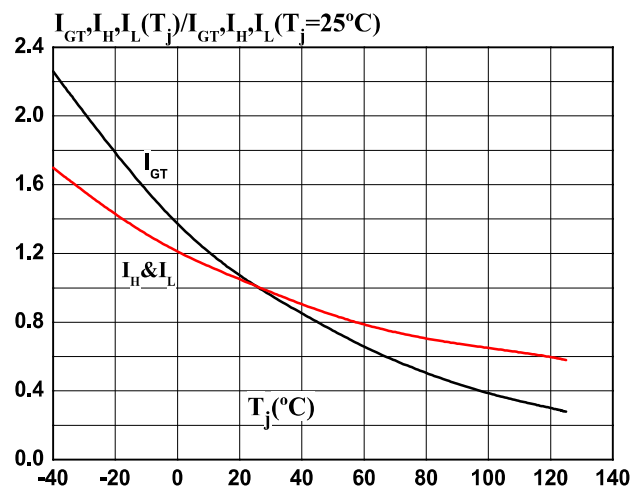
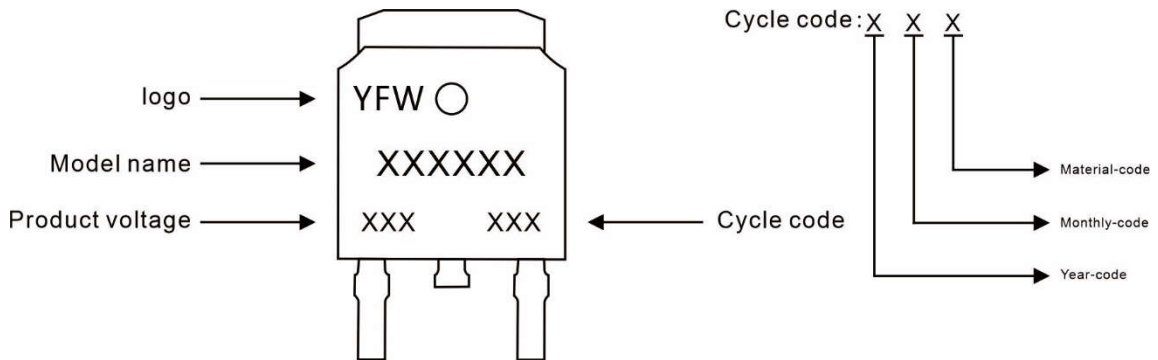


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



**Marking Diagram**



**Ordering information**

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BTB04D	TO-252	0.011oz(0.32g)	2500pcs/reel	5000pcs/box 25000pcs/Carton

**Package Dimensions**

**TO-252**

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	10.00	11.00	0.393	0.433
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059

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