

BTA41-1600BW

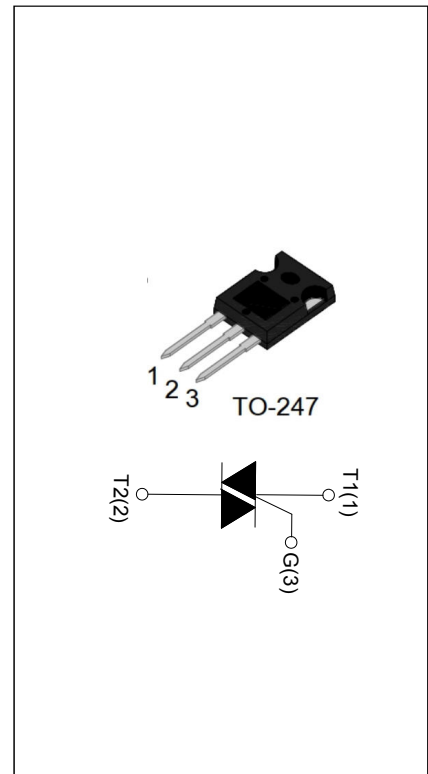
MAIN FEATURES 3Q TRIAC

Symbol	Value	Unit
$I_{T(RMS)}$	41	A
V_{DRM}/V_{RRM}	1600	V
$I_{GT1/2/3}$	50/50/50	mA

DESCRIPTION:

The BTA41-1600BW triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. BTA41-1600BW snubberless triac is especially recommended for use on inductive loads.

Package TO-247 is RoHS compliant.



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	°C
Operating junction temperature range	T_j	-40-125	°C
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	1600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	1600	V
RMS on-state current ($T_c \leq 90^\circ\text{C}$)	$I_{T(RMS)}$	41	A
Non repetitive surge peak on-state current (full cycle, $t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	410	A
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	880	A^2s
Critical rate of rise of on-state current ($T_j=125^\circ\text{C}$)	di/dt	50	$\text{A}/\mu\text{s}$
Peak gate current ($t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$)	I_{GM}	8	A
Average gate power dissipation ($T_j=125^\circ\text{C}$)	$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS ($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V$ $R_L=100\Omega$	I - II -III	MAX.	50	mA
V_{GT}		I - II -III	MAX.	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ\text{C}$ $R_L=100\Omega$	I - II -III	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I -III	MAX.	60	mA
		II		100	
I_H	$I_T=500\text{mA}$		MAX.	60	mA
dV/dt	$V_D=2/3V_{DRM}$ $T_j=125^\circ\text{C}$		MIN.	500	V/ μs
$(dI/dt)_c$	$T_j=125^\circ\text{C}$		MIN.	10	A/ms

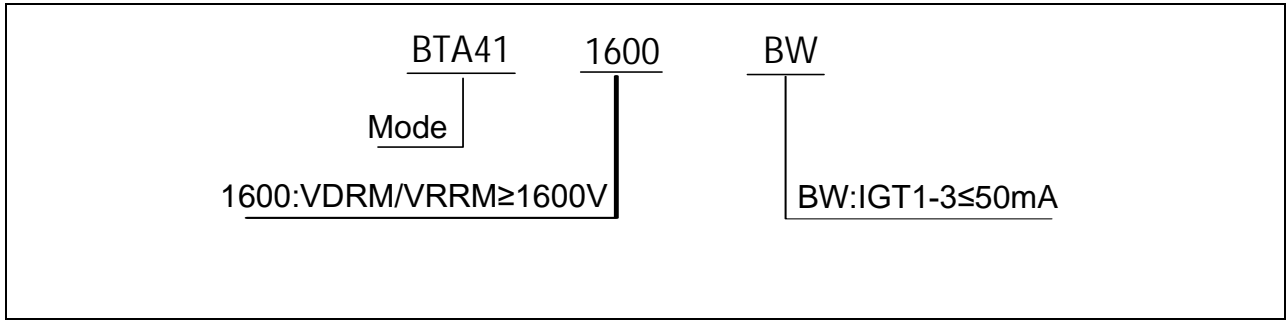
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=32\text{A}$	$T_j=25^\circ\text{C}$	1.50	V
V_{TO}	Threshold voltage	$T_j=125^\circ\text{C}$	0.86	V
R_D	Dynamic resistance	$T_j=125^\circ\text{C}$	6.4	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	10	μA
I_{RRM}		$T_j=125^\circ\text{C}$	2	mA

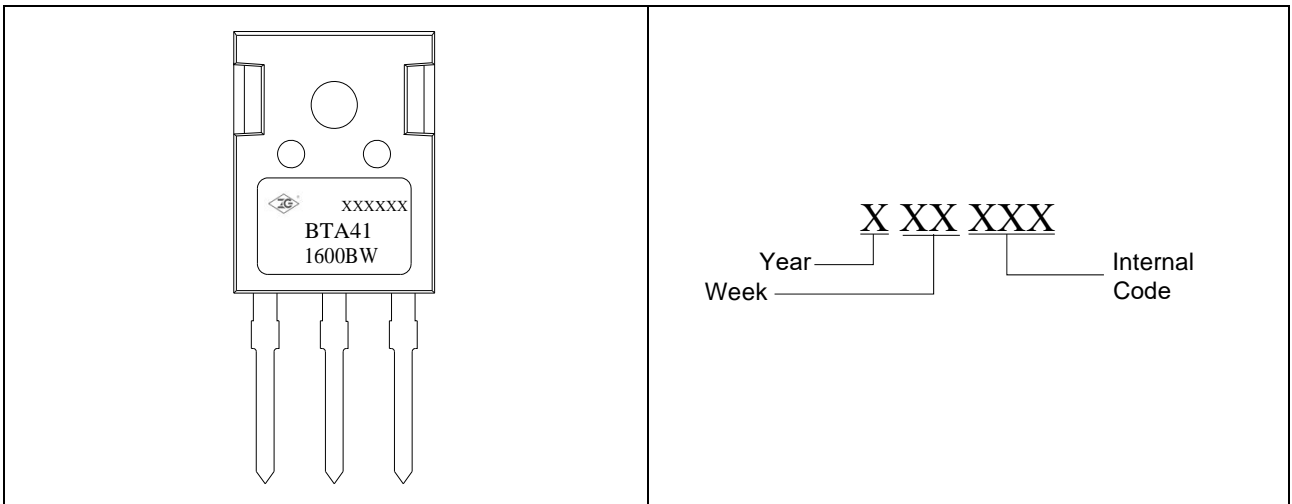
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	0.6	$^\circ\text{C}/\text{W}$

ORDERING INFORMATION



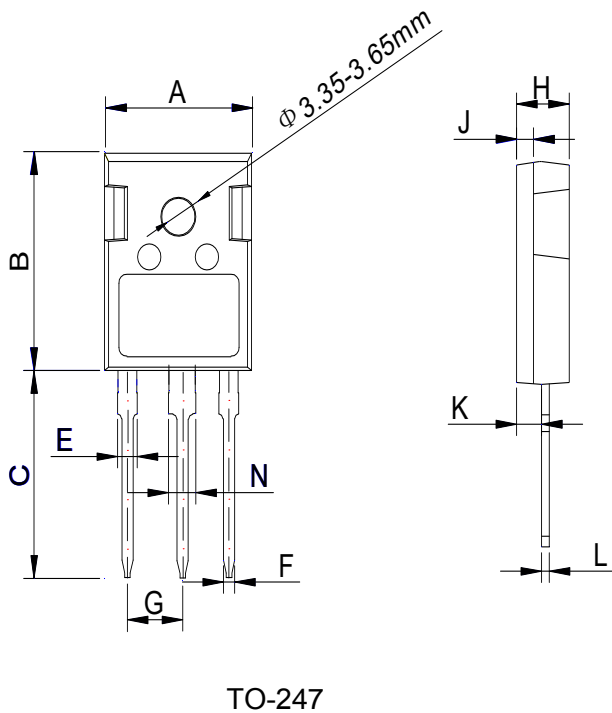
MARKING



ORDERING INFORMATION

Order code	Voltage V _{DRM} /V _{R_{RRM}} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I -II-III			
BTA41-1600BW	1600	50	TO-247	/	Tube

PACKAGE MECHANICAL DATA



Ref.	Dimensions		
	Millimeters		
	Min.	Typ.	Max.
A	15.80	16.00	16.20
B	21.20	21.50	21.80
C	19.20	19.50	19.80
E	1.90	2.10	2.40
F	1.00	1.20	1.40
G	5.35	5.45	5.55
H	4.60	4.80	5.00
J	1.90	2.00	2.10
K	2.20	2.40	2.60
L	0.50	0.60	0.70
N	2.90	3.10	3.30

DELIVERY MODE

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-247	TUBE	/	/	/

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

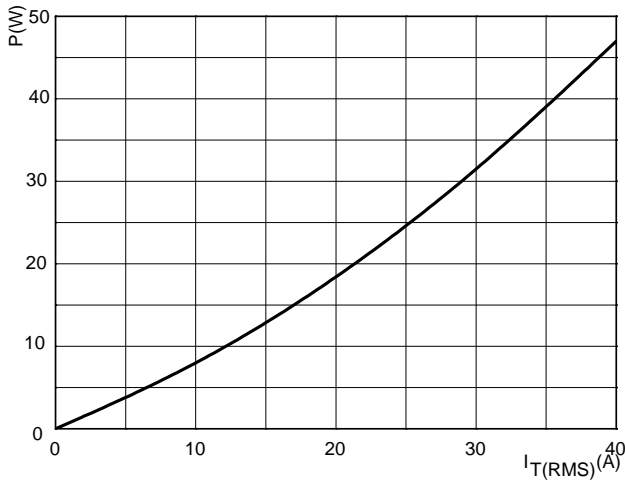


FIG.2: RMS on-state current versus case temperature (full cycle)

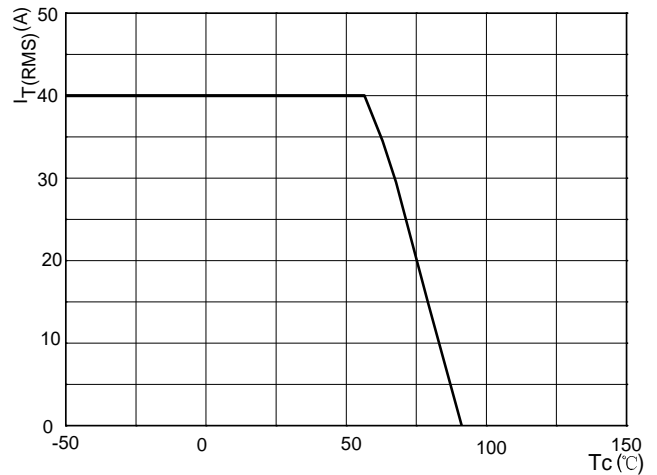


FIG.3: Surge peak on-state current versus number of cycles

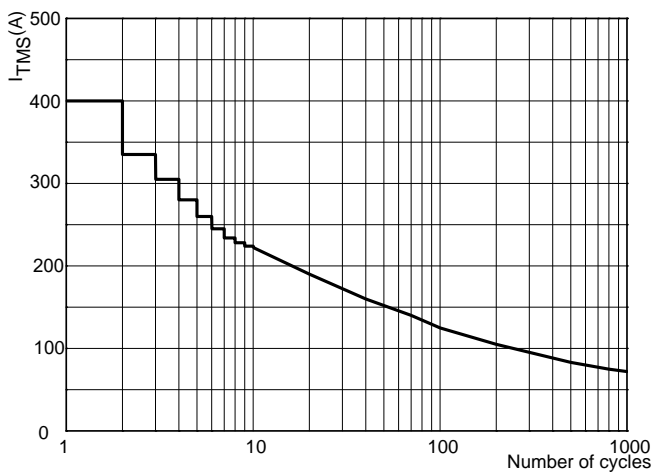


FIG.4: On-state characteristics (maximum values)

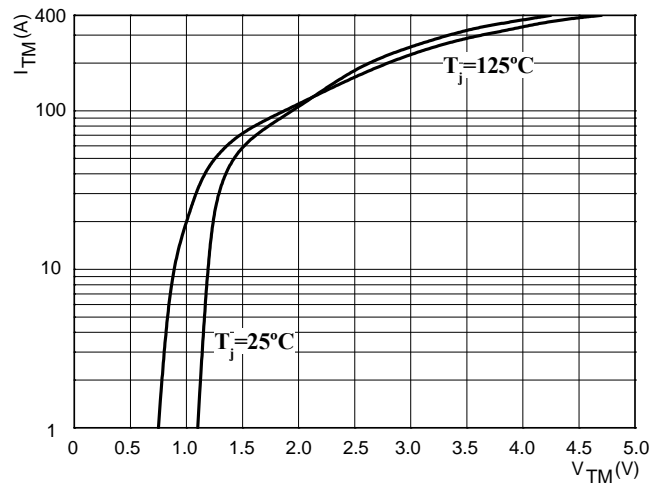


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

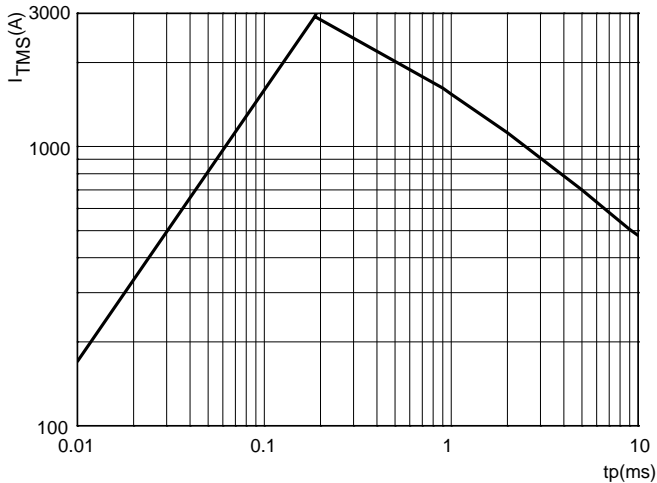
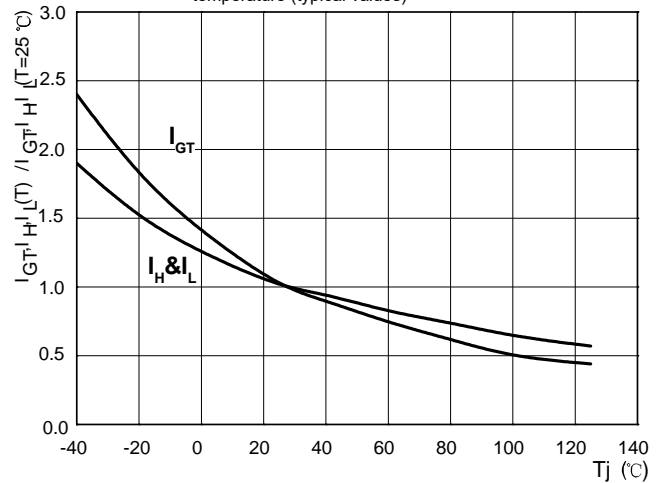


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



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[>>ZG\(中鑫半导体\)](#)