

BTA16-800xW

16A THREE-QUADRANT TRIAC



VOLTAGE:	800 Volts	CURRENT:	16 Ampers	Package:	TO-220A	Marking and Polarity
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FEATURES

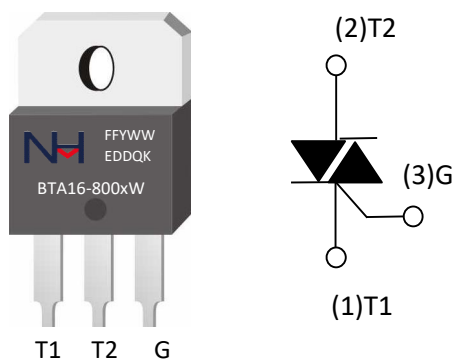
- Highly dv/dt for high reliability
- Low on-state voltage for low power consumption
- The junction termination areas are passivated with glass
- RoHS Compliant

TYPICAL APPLICATIONS

- domestic lighting
- heating
- motor speed controllers.

PRODUCT SUMMARY

VDRM/VRRM Min.	800	V
IT(RMS)	16	A
IGT(I - II -III) max.	50	mA



Remark:

- ①. NH=niuhang trademark
- ②. FF=Product line code,According to actual changes
YWW=Date code,According to actual changes
EDDQF=Internal code,According to actual changes
- ③. BTA16-800xW=Model ,x=S,C,B

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%

Absolute Maximum Ratings (Ta=25°C Unless otherwise specified)

Parameter	Test Conditions	Symbol	BTA16-800xW	Unit
Repetitive peak off-state voltage	Tj=25°C	V _{DRM}	800	V
Repetitive peak reverse voltage	Tj=25°C	V _{RRM}	800	V
RMS on-state current (full sine wave)		I _{T(RMS)}	16	A
Non repetitive surge peak on-state current	F= 50 Hz, Tp= 20 ms	I _{TSM}	160	A
I ² T value for fusing	Tp= 10 ms	I ² t	128	A
Critical rate of rise of on-state current	IG=2*IGT, tr≤10ns F= 100 Hz, Tj= 150 °C	di/dt	50	A/μs
Peak gate current	Tp= 20 μs, Tj= 150 °C	I _{GM}	4.0	A
Average gate power dissipation	Tj= 150 °C	P _{G(AV)}	1.0	W
Maximum Mounting torque	M3 screw	T _{MM}	1.1	N.m

Thermal Characteristics (Ta=25°C Unless otherwise specified)

Parameter	Symbol	BTA16-800xW	Unit
Operating Junction Temperature Range	T _J	-55 to 150	°C
Storage Temperature Range	T _{STD}	-55 to 150	
Typical thermal resistance	R _{θJA}	60.0	°C/W
	R _{θJC}	2.5	

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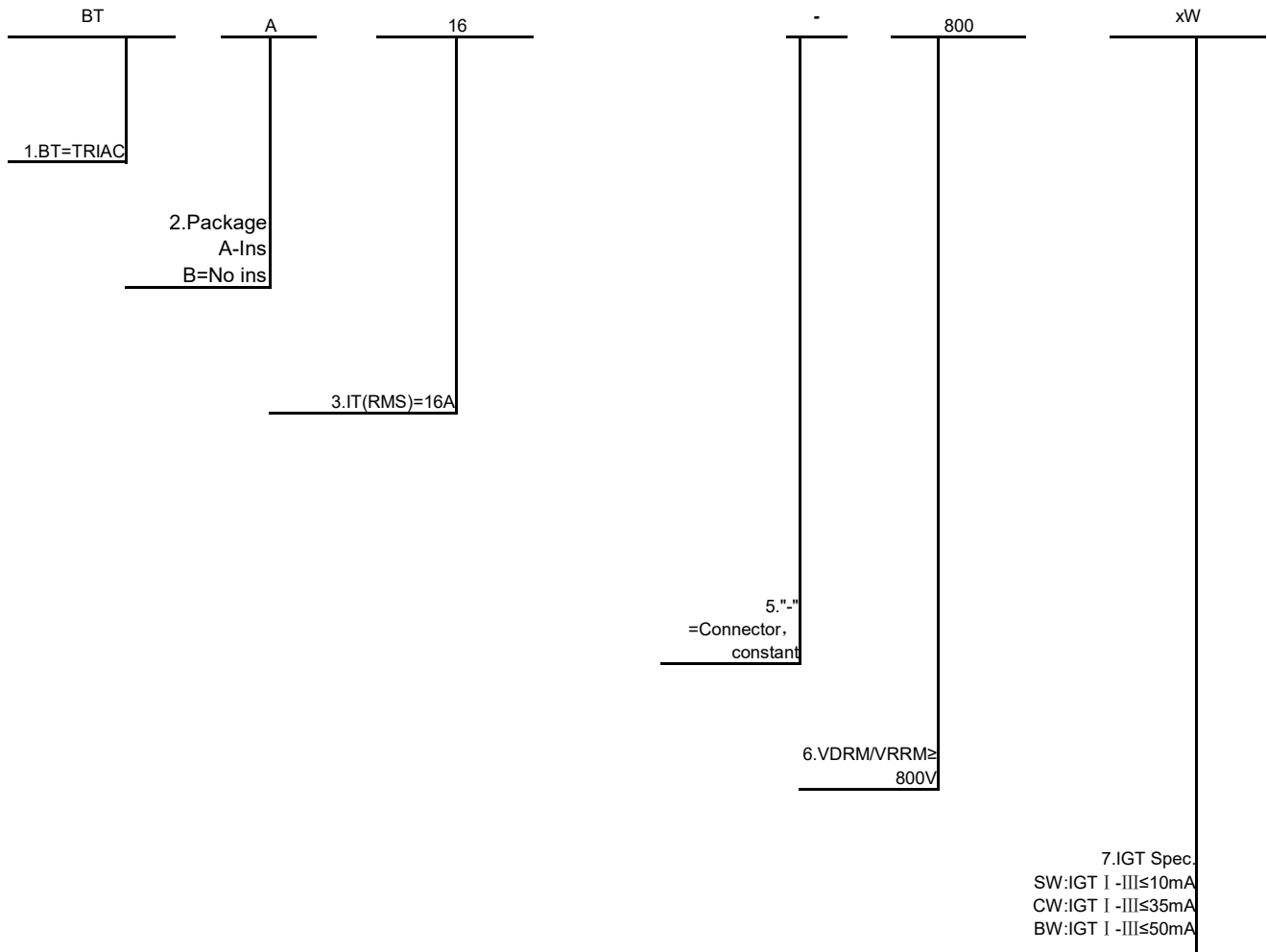
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Electrical Characteristics (Ta=25°C Unless otherwise specified)

Parameter	Test Conditions	Symbol	Quadrants	Value			Unit
				SW	CW	BW	
Gate trigger current	VD=12V,IT=0.1A	I_{GT}	I - II -III	≤10	≤35	≤50	mA
Gate trigger voltage	VD=12V,IT=0.1A	V_{GT}	I - II -III	≤1.3			V
Holding current	IT=500mA	I_H		≤15	≤40	≤60	mA
Latching current	IG=1.2*IGT	I_L	I - III II	≤25	≤50	≤70	mA
				≤30	≤60	≤80	
Rise of off- state voltage	VD=2/3*VDRM, Gate open, Tj =150°C	dv/dt		≥300	≥500	≥1000	V/us
Peak on-state voltage	IT= 16 A, Tj =25°C	V_{TM}		≤ 1.65			V
Peak repetitive forward blocking current	VD=VDRM, Tj =25°C VD=VDRM, Tj =125°C	I_{DRM}		≤5			uA
				≤3			mA
Peak repetitive reverse blocking current	VR=VRRM, Tj =25°C VR=VRRM, Tj =125°C	I_{RRM}		≤5			uA
				≤3			mA

Model and identification instructions



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Typical Characteristics Curves

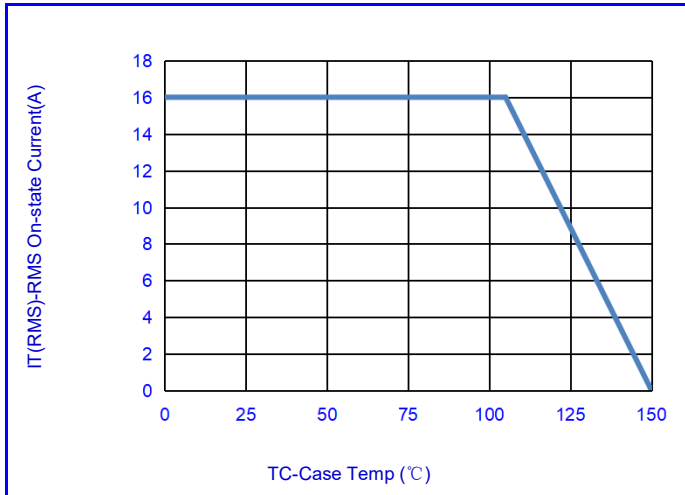


Fig.1-RMS on-state current vs. case temperature

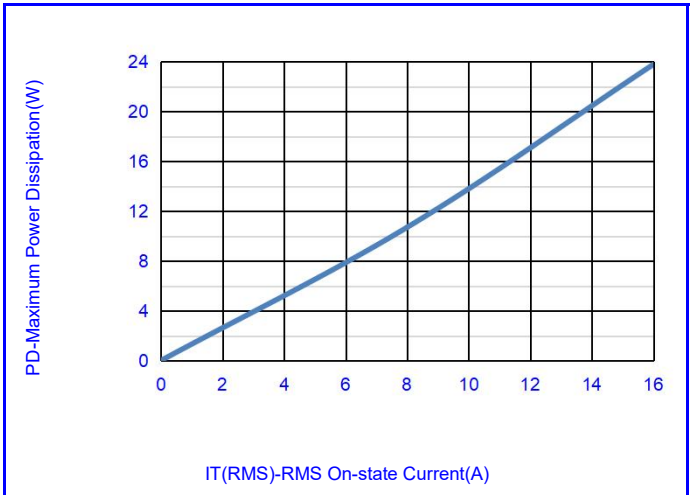


Fig.2- Maximum Power Dissipation Vs. on-state current

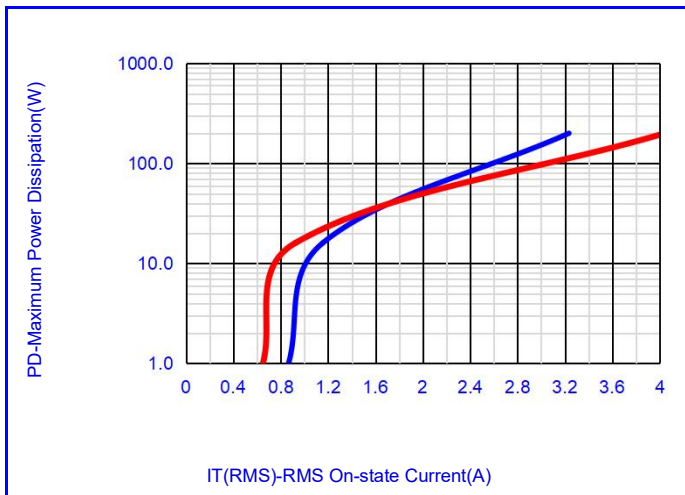


Fig.2- Maximum Power Dissipation Vs. on-state current

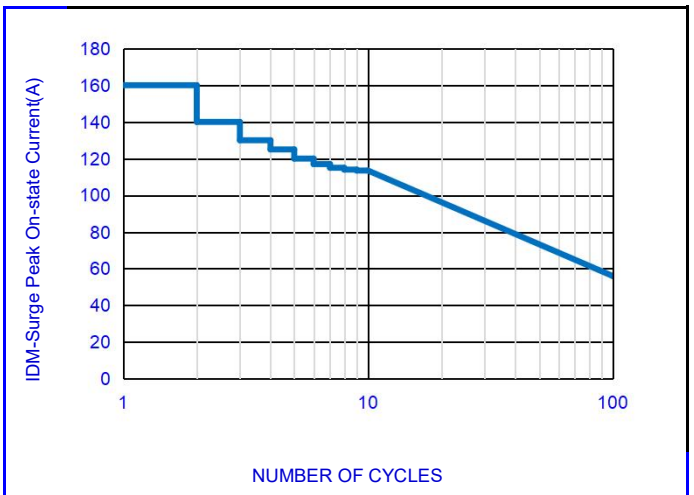


Fig.4- Surge Peak On-state Current Vs. Number Cycles

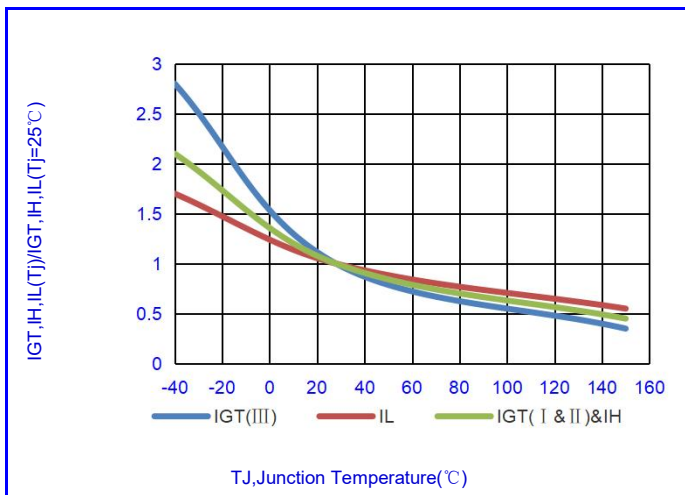


Fig.5- Relative Variation Of Gate Trigger Current , Holding Current And Latching Current Versus Junction Temperature (Typical Value)

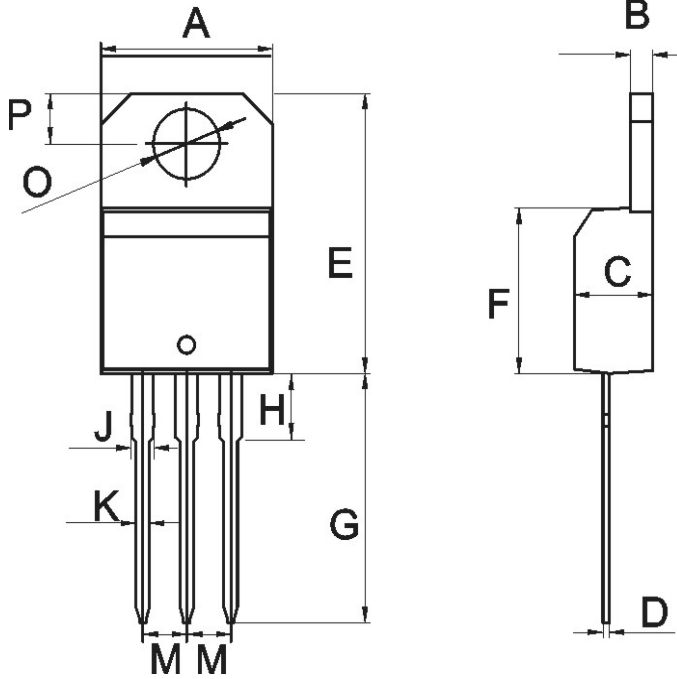
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OUTLINE DRAWINGS

TO-220A



OUTLINE DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.25	-	10.75	0.3642	-	0.4232
B	1.15	-	1.45	0.0453	-	0.0571
C	4.20	-	4.70	0.1654	-	0.1850
D	0.45	-	0.65	0.0177	-	0.0256
E	14.70	-	16.70	0.5787	-	0.6575
F	8.55	-	10.05	0.3366	-	0.3957
G	12.50	-	14.50	0.4921	-	0.5709
H	3.00	-	4.00	0.118	-	0.157
J	1.20	-	1.40	0.0472	-	0.0551
K	0.70	-	1.00	0.0276	-	0.0394
M	2.20	-	3.00	0.0866	-	0.1181
O	3.45	-	4.15	0.1358	-	0.1634
P	2.40	-	3.40	0.0945	-	0.1339

PACKING INFORMATION

TO-220A

Package	Pack	Box Size L×W×H (mm)	Quantity (pcs/box)	Carton Size L×W×H (mm)	Quantity (pcs/carton)
TO-220A	B/P	570*153*47	1000	580*250*180	5000

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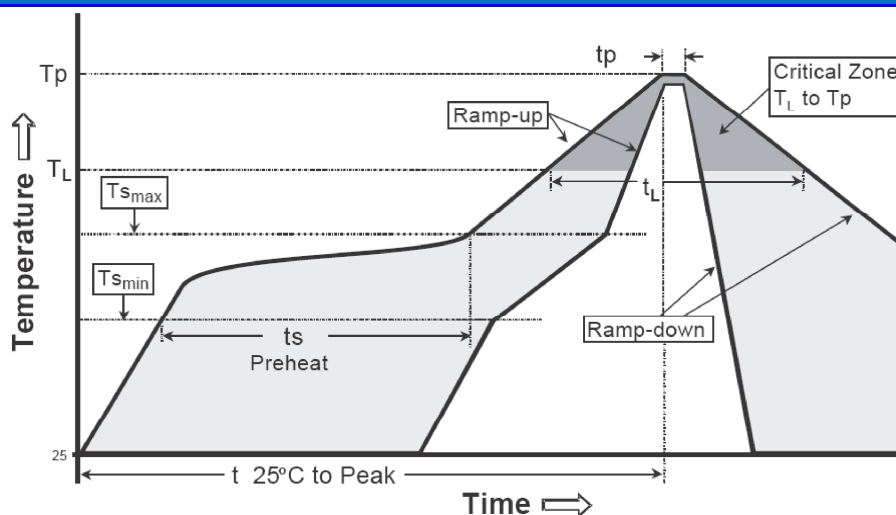
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T _{s min}) -Temperature Max(T _{s max}) -Time(t _{s min} to t _{s max})	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T _P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(t _p)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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