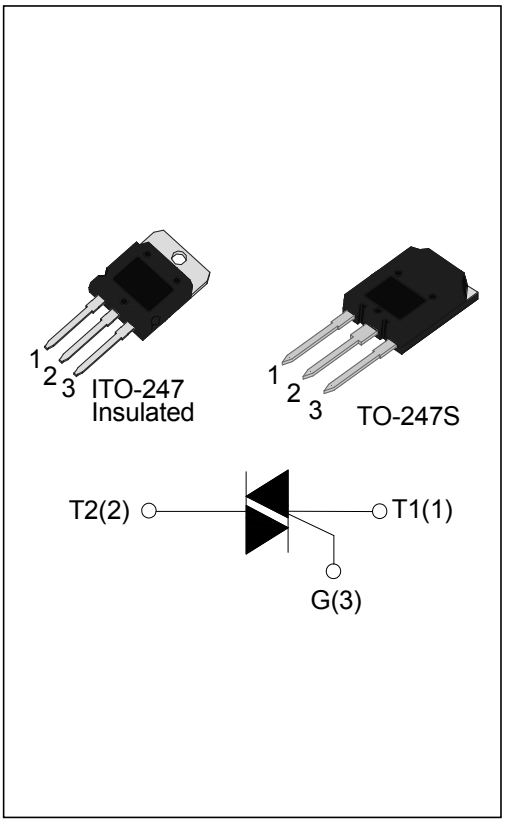
BTA100 Series 100A TRIACs

EKOWEISS Semiconductors

DESCRIPTION:

BTA100 Series triacs provide good commutation capability, which is suitable for general purpose AC switching and voltage regulation, and can be used in static relays,heating regulation, induction motor stating circuits.
From all three pins to external heatsink, BTA100IS triacs provide an insulation voltage of 2500 V_{RMS}.



MAIN FEATURES

Symbol	Value	Unit
V_{DRM}/V_{RRM}	1200/1600	V
$I_{T(RMS)}$	100	A
I_{GT1-3}	≤50	mA

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	℃
Operating junction temperature range		T_j	-40-125	℃
Repetitive peak off-state voltage (T_j=25℃)		V_{DRM}	1200/1600	V
Repetitive peak reverse voltage (T_j=25℃)		V_{RRM}	1200/1600	V
Non repetitive surge peak Off-state voltage		V_{DSM}	V_{DRM} +100	V
Non repetitive peak reverse voltage		V_{RSM}	V_{RRM} +100	V
RMS on-state current	ITO-247(Ins) (T_C=70℃)	$I_{T(RMS)}$	100	A
	TO-247S (T_C=90℃)			
Non repetitive surge peak on-state current (tp=20ms)		I_{TSM}	1100	A
I^2t value for fusing (tp=10ms)		I^2t	5500	A^2s

Critical rate of rise of on-state current (I_G =2×I_{GT})	dI/dt	100	A/μs
Peak gate current	I_{GM}	8	A
Average gate power dissipation	$P_{G(AV)}$	2	W
Peak gate power	P_{GM}	10	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D =12V R_L =33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	50	mA
V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX	1.3	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	Ⅰ-Ⅱ-Ⅲ	MIN	0.2	V
I_L	I_G =1.2I_{GT}	Ⅰ-Ⅱ-Ⅲ	MAX	180	mA
I_H	I_T =100mA		MAX	100	mA
dV/dt	V_D=2/3V_{DRM} T_j =125℃ Gate Open		MIN	1500	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM} =150A tp=380μs	T_j=25℃	1.5	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	20	μA
I_{RRM}		T_j=125℃	12	mA

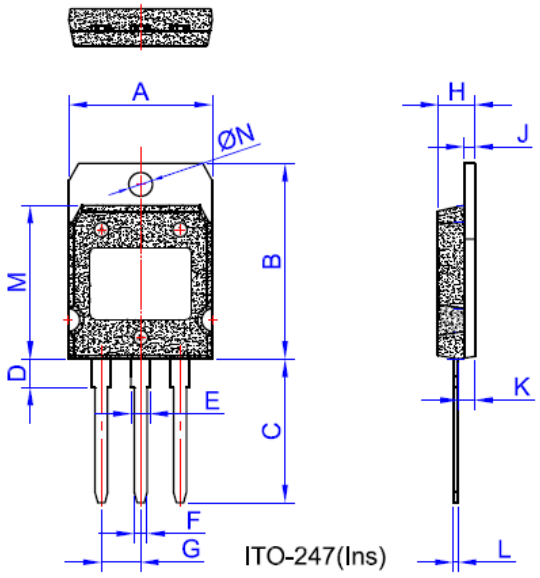
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	ITO-247(Ins)	0.30	℃/W
		TO-247S	0.27	

ORDERING INFORMATION

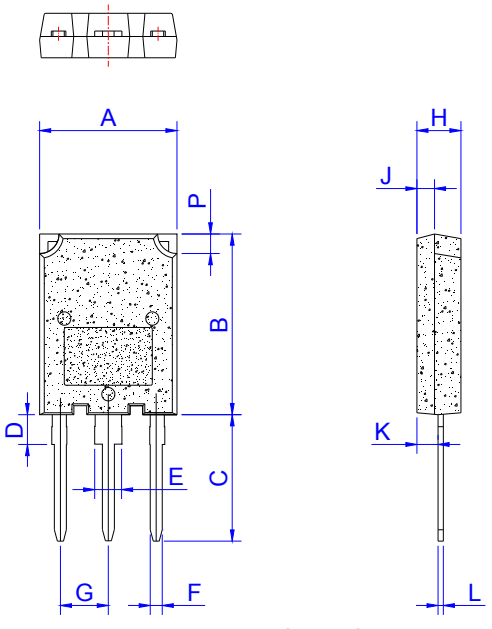
BT	A	100	IS	-1200	BW
Triac series	A:insulated B:non insulated	$I_{T(RMS)}$:100A	CS:TO-247S IS:ITO-247(Ins)	1200: V_{DRM} /V_{RRM}≥1200V 1600: V_{DRM} /V_{RRM}≥1600V	BW:I_{GT1-3}≤50mA

PACKAGE MECHANICAL DATA



ITO-247(Ins)

Ref	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	19.7	19.9	20.1	0.776	0.783	0.791
B	26.9	27.1	27.3	1.059	1.067	1.075
C	19.4	19.9	20.4	0.764	0.783	0.803
D	3.8	3.9	4.0	0.15	0.154	0.157
E	2.56	2.66	2.76	0.101	0.105	0.109
F	1.66	1.76	1.86	0.065	0.069	0.073
G		5.45			0.215	
H	5.05	5.10	5.5	0.199	0.201	0.217
J	1.45	1.50	1.55	0.057	0.059	0.061
K	2.20	2.30	2.40	0.087	0.091	0.094
L	0.60	0.70	0.80	0.024	0.028	0.031
M	21.2	21.3	21.4	0.835	0.839	0.843
ØN	3.20	3.30	3.40	0.126	0.130	0.134



TO-247S

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.1		16.1	0.594		0.634
B	19.8		20.8	0.78		0.819
C	13.8		14.8	0.543		0.583
D	3.00		4.00	0.118		0.157
E	2.75		3.35	0.108		0.132
F	1.30		1.50	0.051		0.059
G	5.10		5.80	0.201		0.228
H	4.50		5.50	0.177		0.217
J	1.45		2.15	0.057		0.085
K	1.90		2.80	0.075		0.110
L	0.55		0.80	0.022		0.031
P	2.00		2.40	0.079		0.094

FIG.1: Maximum power dissipation versus RMS on-state current

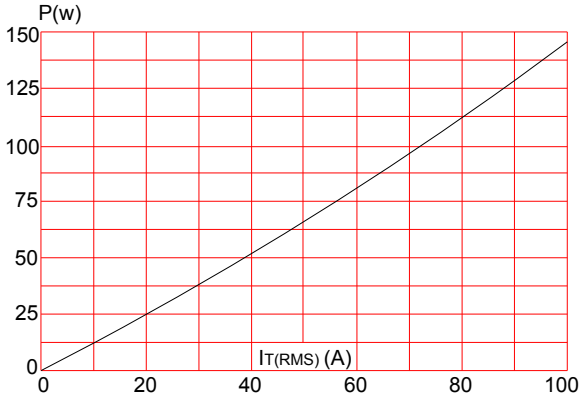


FIG.2: RMS on-state current versus case temperature

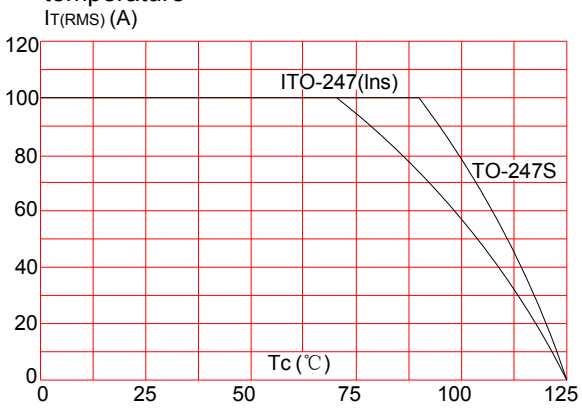


FIG.3: Surge peak on-state current versus number of cycles

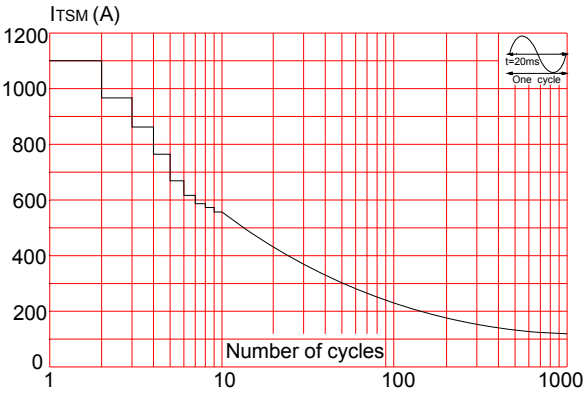


FIG.4: On-state characteristics (maximum values)

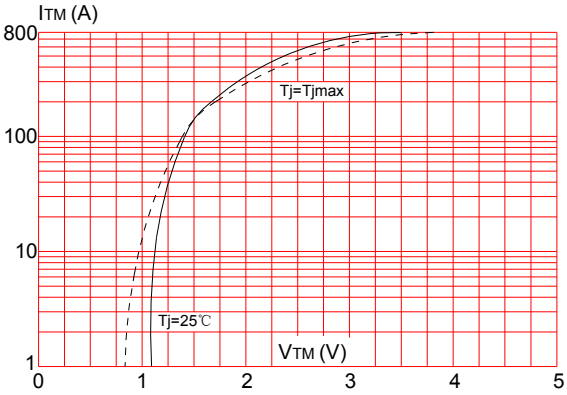


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I^2t (dI/dt < 100A/µs)

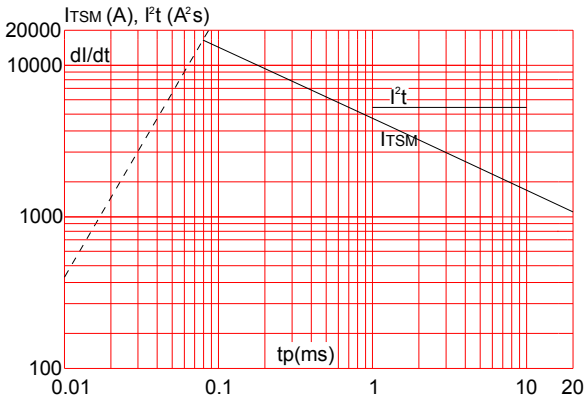
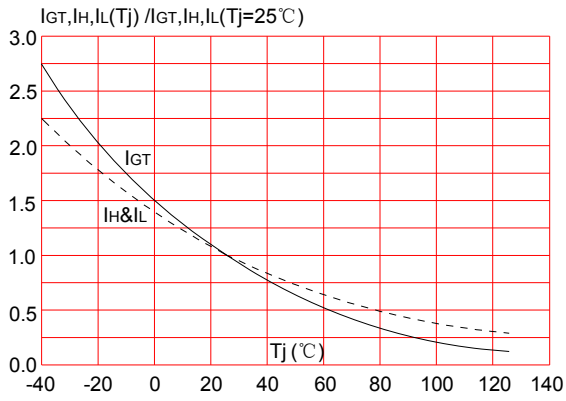


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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