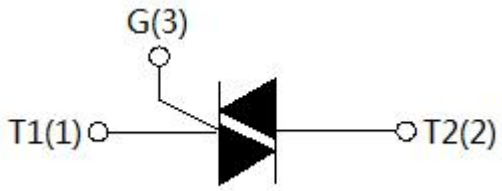
Technical Data
Data Sheet N2919, Rev.-

SST40UF-800BW 40A TRIACs

TO-3PF

Circuit Diagram



Description

SST40UF-800BW 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. SST40UF-800BW snubberless triac is especially recommended for use on inductive loads. By using an external plastic package, SST40UF-800BW provides a rated insulation voltage of 2000 VRMS. Package TO-3PF is RoHS compliant.

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	T_J	-	-40 to +125	°C
Operating junction temperature range	T_{stg}	-	-40 to +150	°C
Repetitive peak off-state voltage(Tj=25℃)	V_{DRM}	-	800	V
Repetitive peak reverse voltage(Tj=25℃)	V_{RRM}	-	800	V
RMS on-state current(T_C≤66℃)	$I_{T(RMS)}$	-	40	A
Non repetitive surge peak on-state current (full cycle , tp=20ms , Tj=25℃)	I_{TSM}	-	420	A
Non repetitive surge peak on-state current (full cycle , tp=16.6ms , Tj=25℃)	I_{TSM}	-	462	A
I^2t value for fusing (tp=10ms , Tj=25℃)	I^2t	-	1000	A^2s
Critical rate of rise of on-state current (I_G =2×I_{GT}, f=100Hz , Tj=125℃)	dI/dt	-	100	A/us
Peak gate current (tp=20μs , Tj=25℃)	I_{GM}	-	8	A
Average gate power dissipation(Tj=125℃)	$P_{G(AV)}$	-	0.5	W
Peak gate power	P_{GM}	-	40	W
Peak pulse voltage (Tj=25℃; non-repetitive,off-state;FIG.7)	V_{PP}	-	1.5	kV

Technical Data
Data Sheet N2919, Rev.-

RoHS

Electrical Characteristics(Tj=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-Ⅲ	MAX.	80	mA
		Ⅱ		200	
I_H	I_T =500mA		MAX.	100	mA
dV/dt	V_D=540V Gate Open T_j =125℃		MIN.	2000	V/μs
(dI/dt)c	(dV/dt)c=20V//μs Tj=125℃		MIN.	25	A/ms
ton	I_G=80mA I_A=400mA I_R=40mA T_j=25℃		TYP.	10	μs
toff				70	

Static Characteristics

Symbol	Condition	Max.	Units
V_{TM}	I_T=60A tp=380μs,Tj=25℃	1.4	V
V_{TO}	Threshold voltage,Tj=125℃	0.73	V
R_D	Dynamic resistance,Tj=125℃	10	mΩ
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}, Tj=25℃	5	uA
I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}, Tj=125℃	5	mA

Thermal Resistances

Symbol	Condition	Value	Units
Rth(j-c)	Junction to case(AC)	1.13	℃/W
Rth(j-a)	junction to ambient (AC)	50	℃/W

Technical Data
Data Sheet N2919, Rev.-

RoHS

Ordering Information

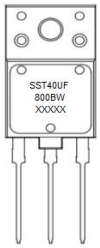
S ST 40 UF -800 BW

- S: SMC Diode Solutions
- ST: Triacs
- 40: $I_{T(RMS)}$:40A
- UF: TO-3PF
- 800: $V_{DRM}/V_{RRM} \geq 800V$
- BW: $I_{GT1-3} \leq 50mA$

Ordering Information:

Device	Package	Shipping
SST40UF-800BW	TO-3PF	30pcs/ Tube

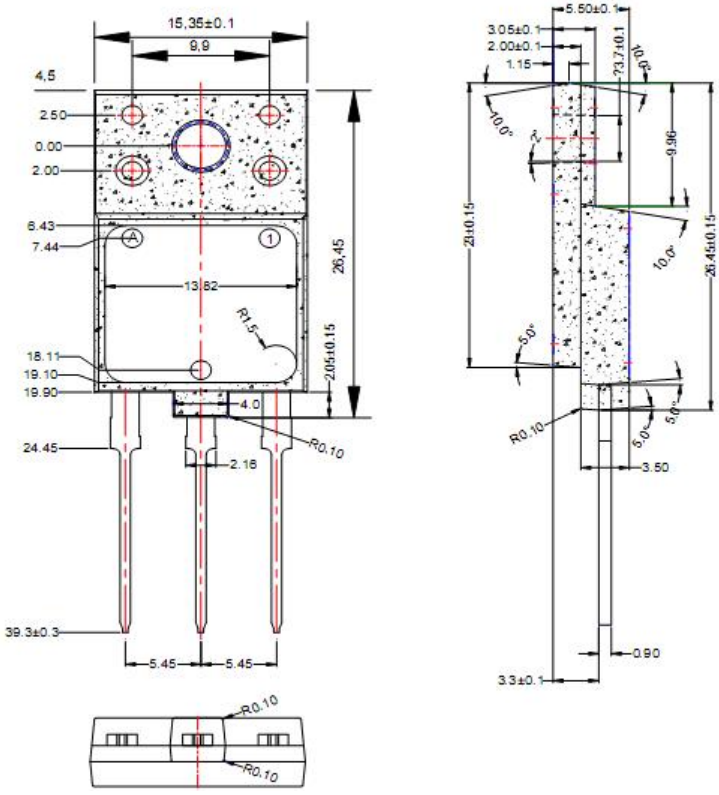
Marking Diagram



Where XXXXX is YYWWL

SST40UF-800BW = Part name
YY = Year
WW = Week
L = Lot Number

Mechanical Dimensions TO-3PF



Ratings and Characteristics Curves

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

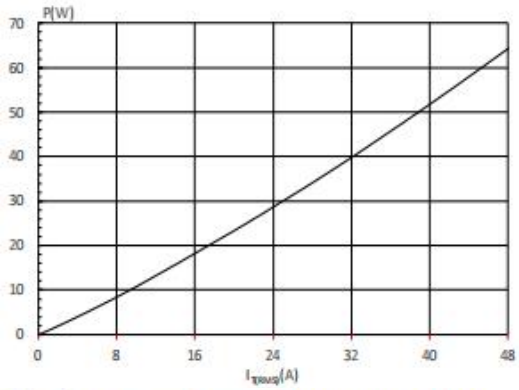


FIG.2: RMS on-state current versus case temperature

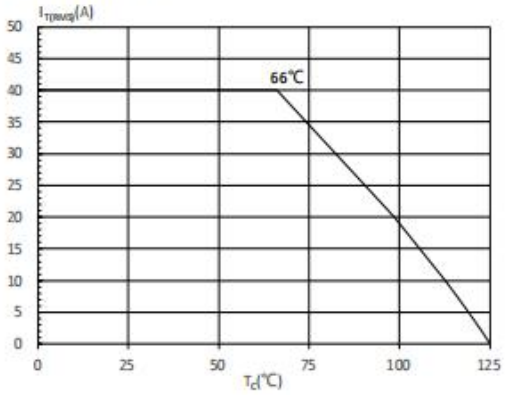


FIG.3: Surge peak on-state current versus number of cycles

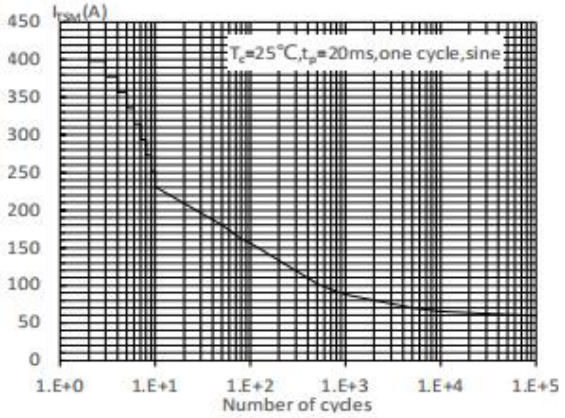


FIG.4: On-state characteristics

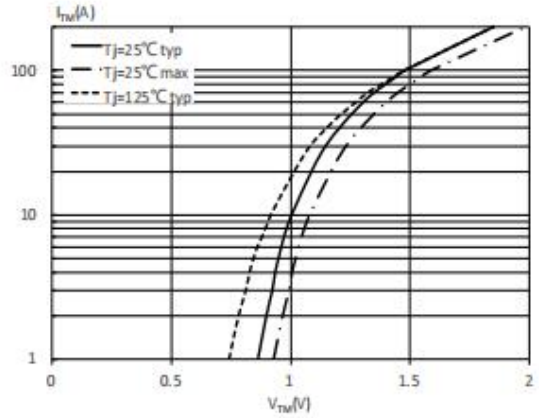


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p<20ms, and corresponding value of I^2t (dI/dt< 100A/μs)

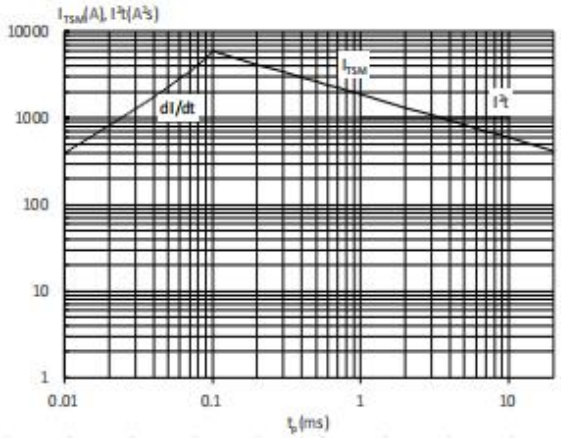
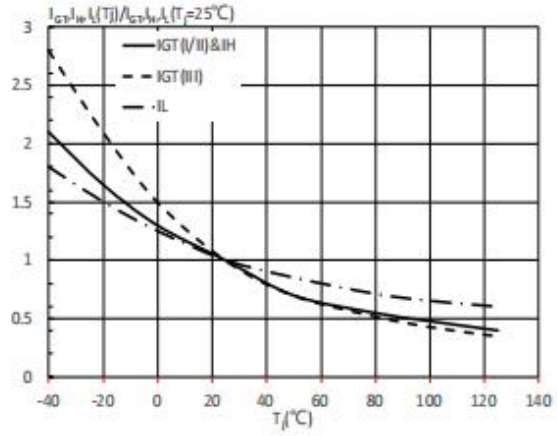


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Technical Data
Data Sheet N2919, Rev.-

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