DESCRIPTION:

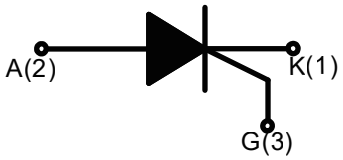
With high ability to withstand the shock loading of large current, BTW69-800 series of silicon controlled rectifiers provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc.

TO-247

TO-3P

MAIN FEATURES

Symbol	Value	Symbol
V_{DRM}/ V_{RRM}	600/800	V
$I_{T(RMS)}$	55	A
I_{GT}	10-50	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		V_{DRM}	600/800	V
Repetitive peak reverse voltage		V_{RRM}	600/800	V
RMS on-state current	TO-3P Ins (T_C=70℃)	$I_{T(RMS)}$	55	A
	TO-247S/TO-247J (T_C=75℃)			
	TG-C (T_C=73℃)			
Non repetitive surge peak on-state current (tp=10ms)		I_{TSM}	520	A
I^2t value for fusing (tp=10ms)		I^2t	1350	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT})		dI/dt	150	A/μs

Peak gate current	I_{GM}	5	A
Peak gate power	P_{GM}	10	W
Average gate power dissipation (T_j=125℃)	$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V R_L=33Ω	10	15	50	mA
V_{GT}		-	-	1.5	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	0.2	-	-	V
I_L	I_G=1.2I_{GT}	-	-	100	mA
I_H	I_T=500mA	-	-	80	mA
dV/dt	V_D=2/3V_{DRM} T_j=125℃ Gate Open	700	-	-	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=80A tp=380μs	T_C=25℃	1.6	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_C=25℃	10	μA
I_{RRM}		T_C=125℃	6	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-3P Ins	0.65	℃/W
		TO-247S/ TO-247J	0.60	
		TG-C	0.63	

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

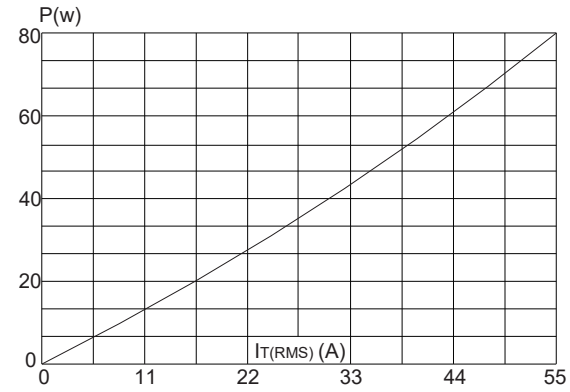


FIG.2: RMS on-state current versus case temperature

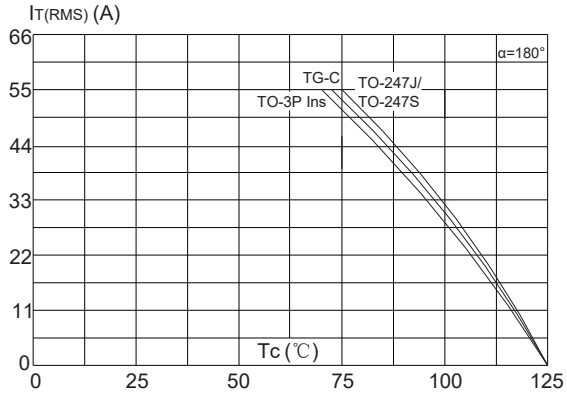


FIG.3: Surge peak on-state current versus number of cycles

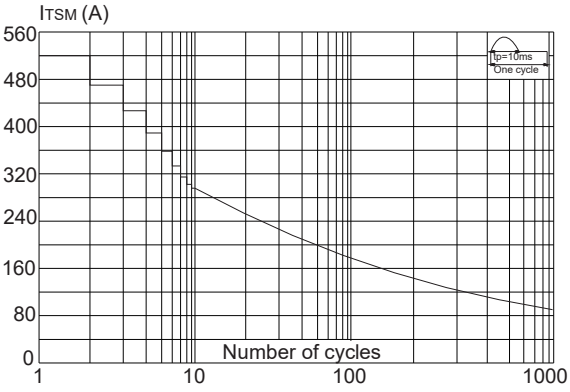


FIG.4: On-state characteristics (maximum values)

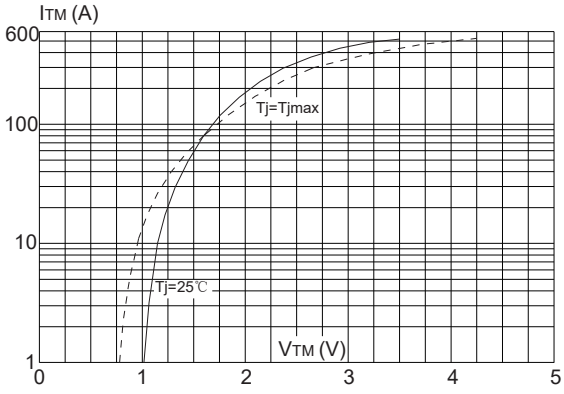


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t (dI/dt < 150A/μs)

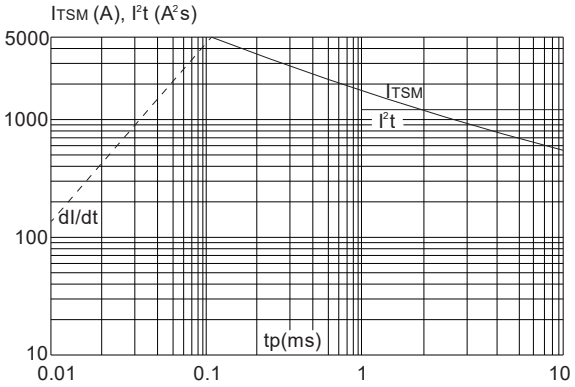


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature