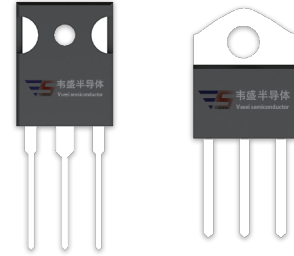


DESCRIPTION:

With high ability to withstand the shock loading of large current, BTW69-1200 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.

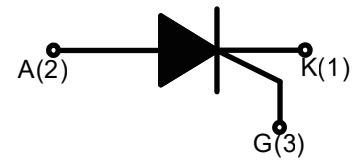


TO-247

TO-3P

MAIN FEATURES

Symbol	Value	Symbol
V_{DRM}/V_{RRM}	1000/1200	V
$I_{T(RMS)}$	55	A
I_{GT}	≤ 50	mA



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range		T_j	-40-125	$^{\circ}C$
Repetitive peak off-state voltage($T_j=25^{\circ}C$)		V_{DRM}	1000/1200	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)		V_{RRM}	1000/1200	V
Non repetitive 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	TO-3P Ins ($T_c=70^{\circ}C$)	$I_{T(RMS)}$	55	A
	TO-247S /TO-247 ($T_c=75^{\circ}C$)			
	TG-C ($T_c=73^{\circ}C$)			

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 ($I_G=2 \times I_{GT}$)	di/dt	150	$A/\mu s$
Peak gate current	I_{GM}	5	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V$ $R_L=33\Omega$	-	-	50	mA
V_{GT}		-	-	1.5	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ C$ $R_L=3.3K\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	150	mA
I_H	$I_T=500mA$	-	-	120	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$	800	-	-	$V/\mu s$

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=80A$ $tp=380\mu s$	$T_j=25^\circ C$	1.6	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	10	μA
I_{RRM}		$T_j=125^\circ C$	6	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-3P Ins	0.65	$^\circ C/W$
		TO-247S/TO-247J	0.6	
		TG-C	0.63	

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

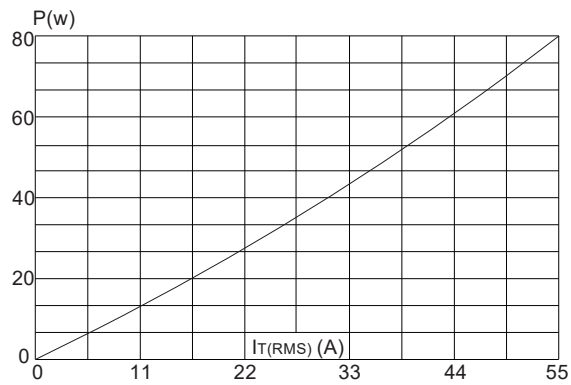


FIG.2: RMS on-state current versus case temperature

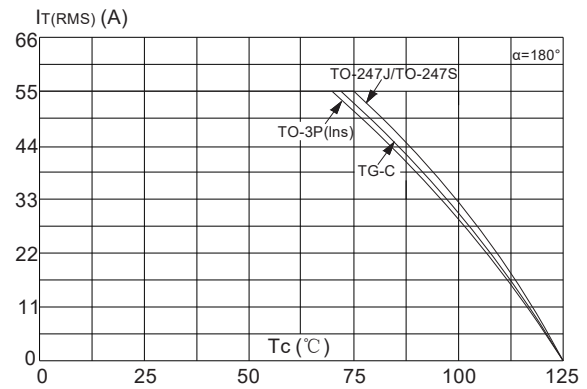


FIG.3: Surge peak on-state current versus number of cycles

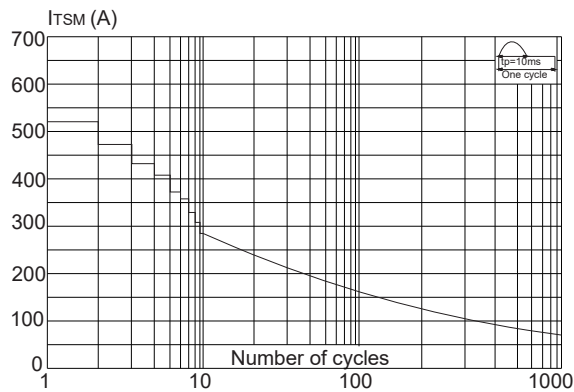


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 150\text{A}/\mu\text{s}$)

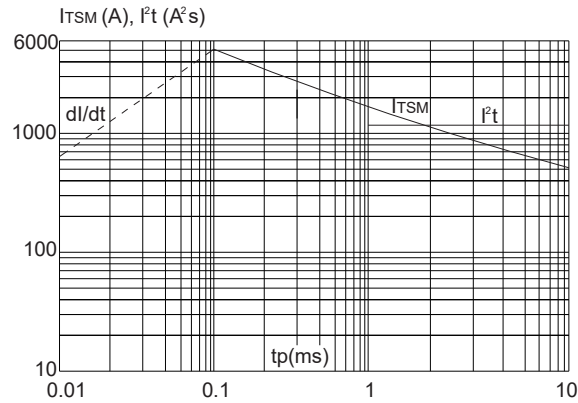


FIG.4: On-state characteristics (maximum values)

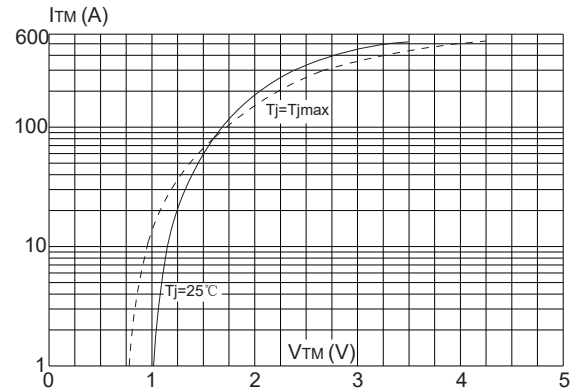


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

