

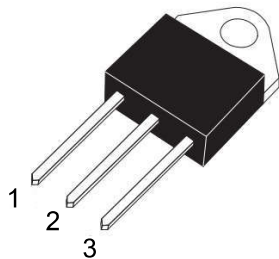
Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	55	A
$V_{DRM} V_{RRM}$	1200	V
V_{TM}	1.8	V

Feature

- High thermal cycling performance
- High voltage capacity
- Very high current surge capability

Package

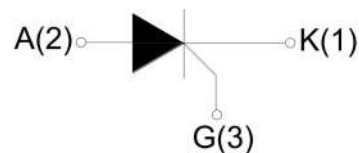


TO-3P Insulated

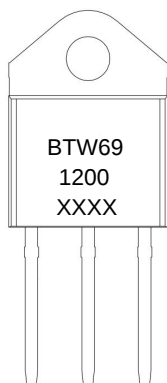
Application

- Line rectifying 50/60 Hz
- Softstart AC motor control
- DC Motor control
- Power converter
- AC power control
- Lighting and temperature control

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V_{DRM}	1200	V
Repetitive peak reverse voltage	V_{RRM}	1200	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	$I_{T(RMS)}$	55	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	550	A
Average on-state current (180° conduction angle)	$I_{T(AV)}$	35	A
I^2t value for fusing (tp=10ms)	I^2t	1500	A
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	150	A/ μ s
Peak gate current	I_{GM}	5	A
Average gate power dissipation	$P_{G(AV)}$	2	W
Junction Temperature	T_J	-40 ~ +125	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

Electrical characteristics (Ta=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition			Value	Unit
Gate trigger current	I _{GT}	V _D =12V R = 140Ω		MAX.	60	mA
Gate trigger voltage	V _{GT}			MAX.	1.3	V
Gate non-trigger voltage	V _{GD}	V _D =V _{DRM} T _j =125°C		MIN.	0.2	V
latching current	I _L	I _G =1.2I _{GT}		MAX.	250	mA
Holding current	I _H	I _T =50mA		MAX.	200	mA
Critical-rate of rise of commutation voltage	dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN.	800	V/μs
STATIC CHARACTERISTICS						
Forward "on" voltage	V _{TM}	I _{TM} =80A tp=380μs		MAX.	1.8	V
Repetitive Peak Off-State Current	I _{DRM}	V _D =V _{DRM} V _R =V _R RM	T _j =25°C	MAX.	20	μA
Repetitive Peak Reverse Current	I _{RRM}		T _j =125°C	MAX.	8	mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	TO-3P		TYP.	0.65	°C/W

Typical Characteristics

FIG.1 Maximum power dissipation versus on-state current

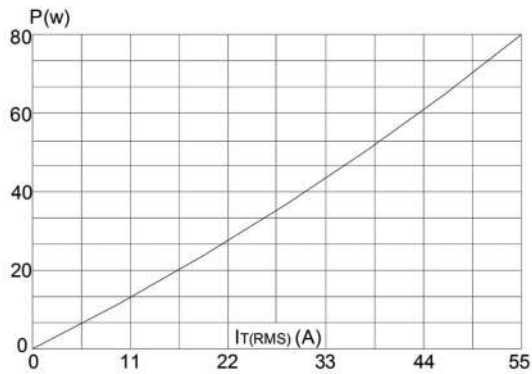


FIG.2: on-state current versus case temperature

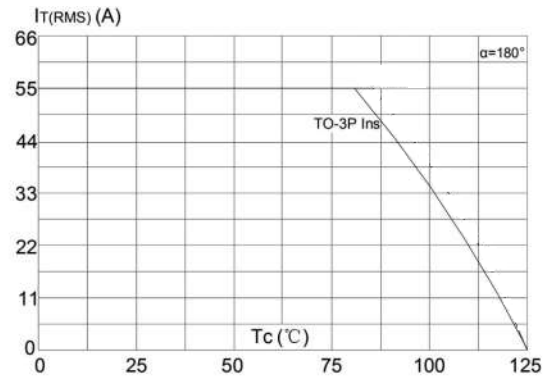


FIG.3: Surge peak on-state current versus number of cycles

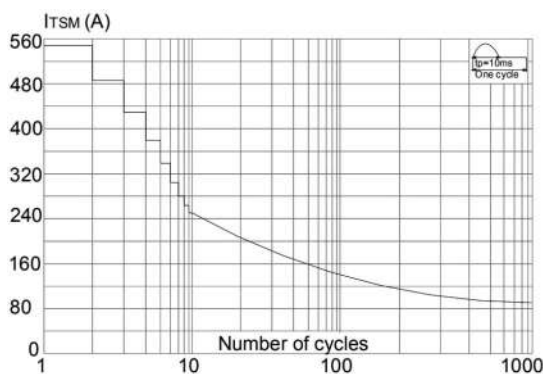


FIG.4: On-state characteristics (maximum values)

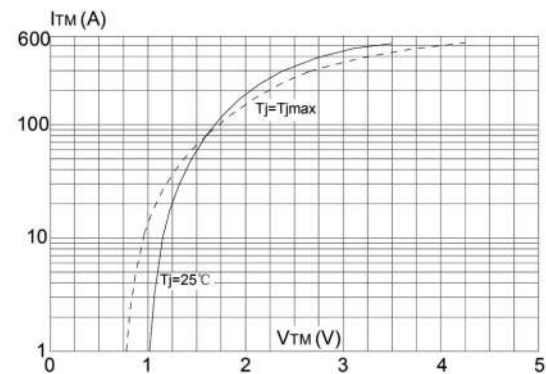


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of $I_2 t$

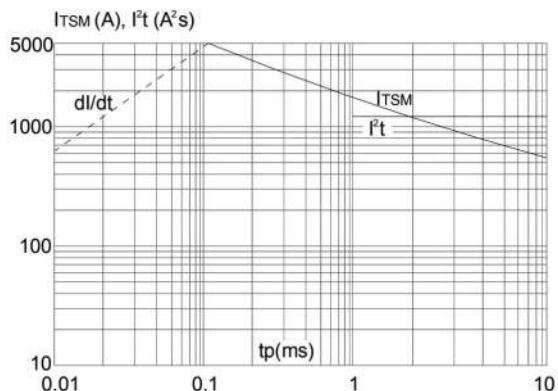
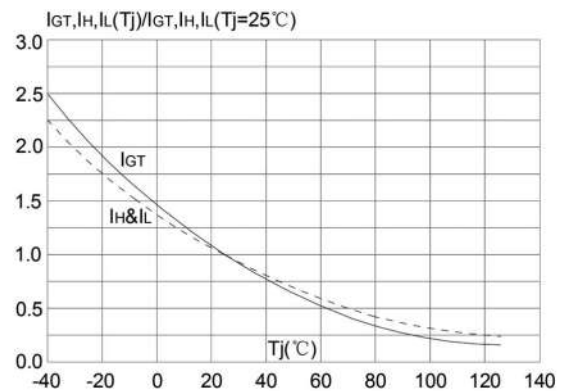
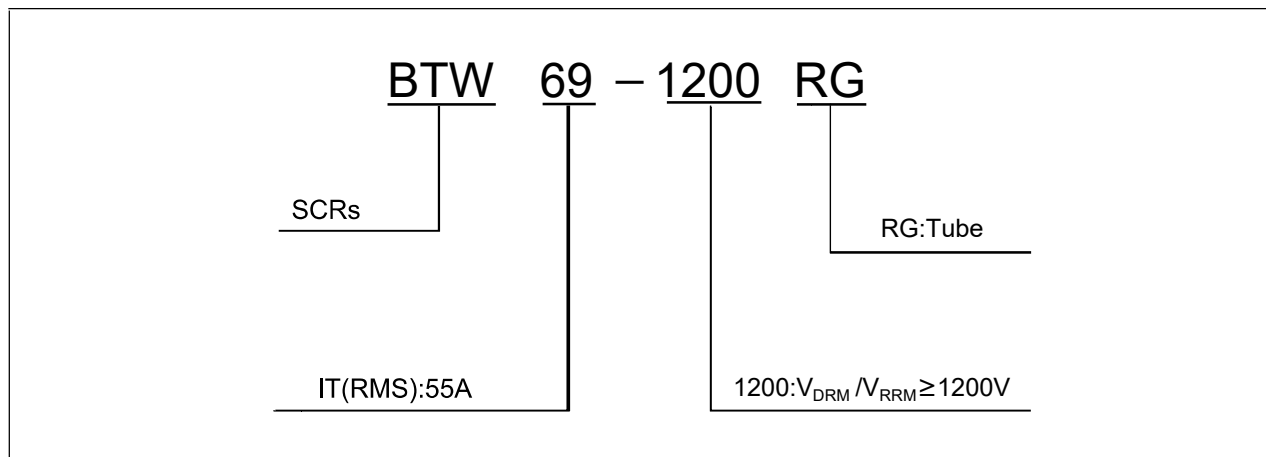


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature



Ordering Information



TO-3P Insulated Package Information

