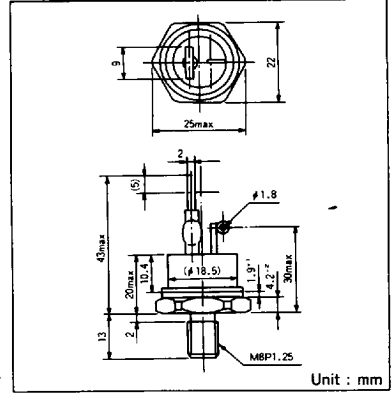


# TRIAC

# SSG50C

For general A.C. power control applications such as A.C. switches, light controls, speed controls and heater controls etc.

- General A.C. power use
- $I_{T(RMS)} = 50A$
- High voltage up to 1200V
- High surge current of 800A
- Package types; stud



## Maximum Ratings

Symbol	Item	SSG50C40	SSG50C60	SSG50C80	SSG50C100	SSG50C120	Unit
$V_{DRM}$	Repetitive Peak Off-State Voltage	400	600	800	1000	1200	V

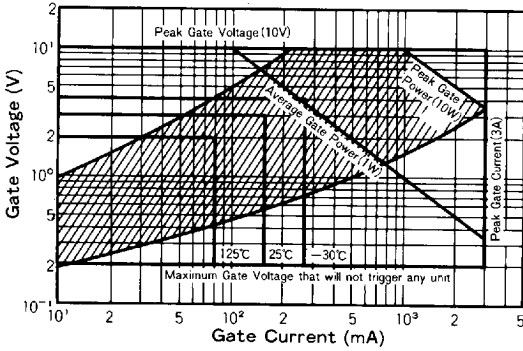
Symbol	Item	Conditions	Ratings	Unit
$I_{T(RMS)}$	R.M.S On-State Current	$T_c = 85^\circ C$	50	A
$I_{TSM}$	Surge On-State Current	One cycle, 50/60Hz, peak, non-repetitive	720/800	A
$I^2t$	$I^2t$	Value for one cycle of surge current	2660	A <sup>2</sup> S
$P_{GM}$	Peak Gate Power Dissipation		10	W
$P_{G(AV)}$	Average Gate Power Dissipation		1	W
$I_{GM}$	Peak Gate Current		3	A
$V_{GM}$	Peak Gate Voltage		10	V
$di/dt$	Critical Rate of Rise of On-State Current	$I_G = 150mA, T_j = 25^\circ C, V_D = \frac{1}{2} V_{DRM}, di_G/dt = 1A/\mu s$	50	A/ $\mu s$
$T_j$	Operating Junction Temperature		-30 ~ +125	$^\circ C$
$T_{stg}$	Storage Temperature		-30 ~ +125	$^\circ C$
	Mounting Torque	Recommended Value 56kgf·cm	70	kgf·cm
	Mass	Excluding nut & washer. 6.2g. and wrapping material 5.3g	50	g

## Electrical Characteristics

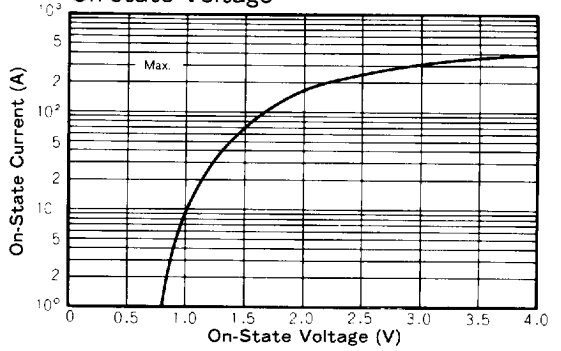
Symbol	Item	Conditions	Ratings	Unit
$I_{DRM}$	Repetitive Peak Off-State Current, max.	at $V_{DRM}$ , single phase, half wave, $T_j = 125^\circ C$	8	mA
$V_{TM}$	Peak On-State Voltage, max.	$I_T = 70A, T_j = 25^\circ C$ Inst. measurement	1.5	V
$I_{GT1}^+$	Gate Trigger Current, max.	$T_j = 25^\circ C, I_T = 1A, V_D = 6V$	150	mA
$I_{GT1}^-$		$T_j = 25^\circ C, I_T = 1A, V_D = 6V$	150	
$I_{GT3}^+$			—	
$I_{GT3}^-$		$T_j = 25^\circ C, I_T = 1A, V_D = 6V$	150	
$V_{GT1}^+$	Gate Trigger Voltage, max.	$T_j = 25^\circ C, I_T = 1A, V_D = 6V$	3	V
$V_{GT1}^-$		$T_j = 25^\circ C, I_T = 1A, V_D = 6V$	3	
$V_{GT3}^+$			—	
$V_{GT3}^-$		$T_j = 25^\circ C, I_T = 1A, V_D = 6V$	3	
$V_{GD}$	Non-Trigger Gate Voltage, min.	$T_j = 125^\circ C, V_D = \frac{1}{2} V_{DRM}$	0.2	V
$t_{gt}$	Turn On Time, max	$I_T = 50A, I_G = 150mA, V_D = \frac{1}{2} V_{DRM}, T_j = 25^\circ C, di_G/dt = 1A/\mu s$	10	$\mu s$
$dv/dt$	Critical Rate of Rise of On-State Voltage, min.	$T_j = 125^\circ C, V_D = \frac{2}{3} V_{DRM}$ , Exponential wave.	50	V/ $\mu s$
$\{dv/dt\}_c$	Critical Rate of Rise off-State Voltage at commutation, min	$T_j = 125^\circ C, \{di/dt\}_c = 40A/ms, V_D = \frac{2}{3} V_{DRM}$	20	V/ $\mu s$
$I_H$	Holding Current, typ.	$T_j = 25^\circ C$	50	mA
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to case	0.6	$^\circ C/W$

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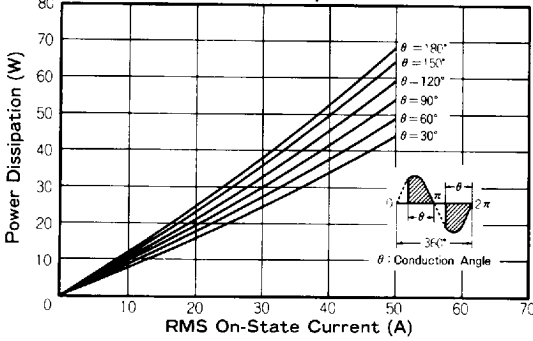
Gate Characteristics



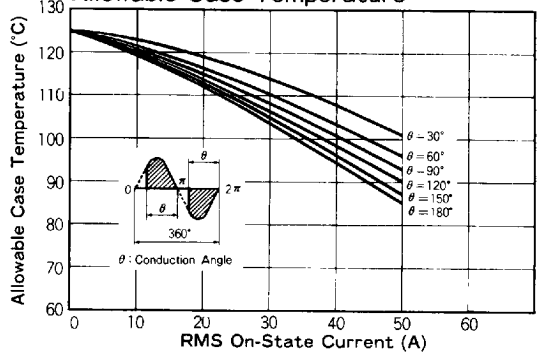
On-state Voltage



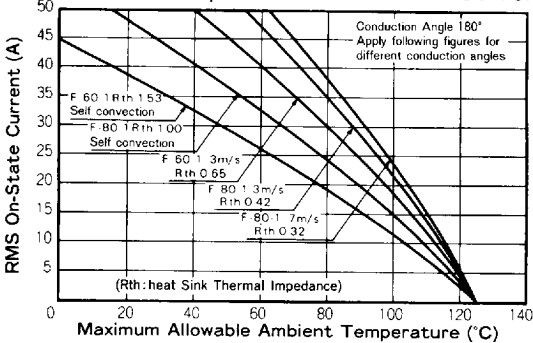
On state Current vs. Maximum Power Dissipation



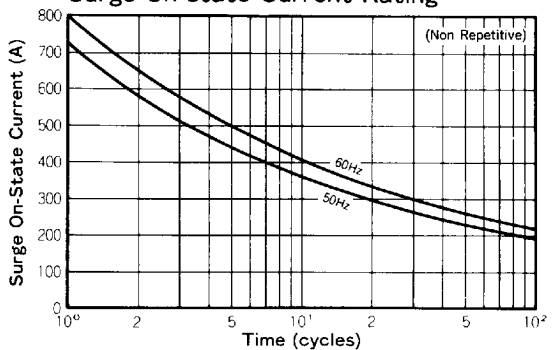
On state Current vs. Allowable Case Temperature



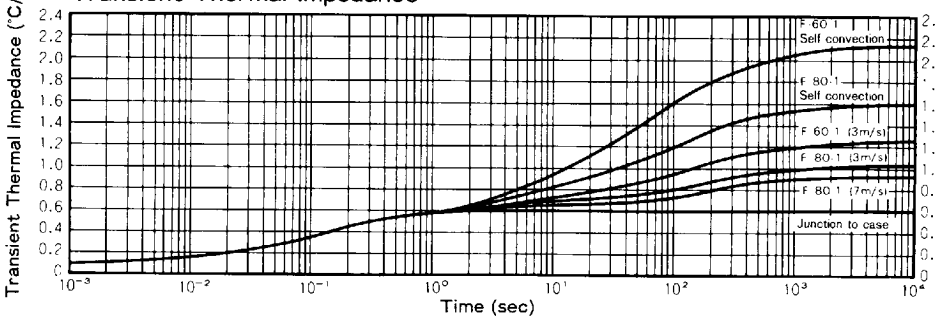
Ambient temp. vs. RMS On state Current



Surge On state Current Rating



Transient Thermal Impedance



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