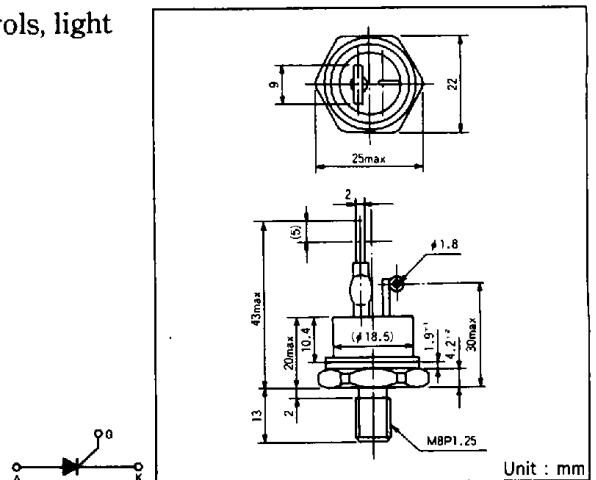


THYRISTOR SC50C

For general phase control applications such as speed controls, light controls and welders etc.

- General power use
- $I_T = 50A$, $I_{T(RMS)} = 78A$
- High voltage up to 1200V
- High surge current of 1000A
- Stud type



Maximum Ratings

Symbol	Item	SC50C-40	SC50C-60	SC50C-80	SC50C-100	SC50C-120	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	400	600	800	1000	1200	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage	480	720	960	1100	1300	V
V_{DRM}	Repetitive Peak Off-State Voltage	400	600	800	1000	1200	V

Symbol	Item	Conditions		Ratings	Unit
$I_{T(AV)}$	Average On-State Current	Single phase, half wave, 180° conduction, $T_c : 66.5^\circ C$		50	A
$I_{T(RMS)}$	R.M.S On-State Current	Single phase, half wave, 180° conduction, $T_c : 66.5^\circ C$		78	A
I_{TSM}	Surge On-State Current	$1/2$ cycle, 50Hz/60Hz, peak value, non-repetitive		900/1,000	A
I^2t	I^2t	Value for one cycle of surge current		4,160	A ² S
P_{GM}	Peak Gate Power Dissipation			10	W
$P_{G(AV)}$	Average Gate Power Dissipation			1	W
I_{FGM}	Peak Gate Current			3	A
V_{FGM}	Peak Gate Voltage(Forward)			10	V
V_{RGM}	Peak Gate Voltage(Reverse)			5	V
di/dt	Critical Rate of Rise of On-State Current	SC50C-40~60	$I_G = 100mA$, $T_j = 25^\circ C$, $V_D = 1/2 V_{DRM}$, $dI_G/dt = 0.1A/\mu s$	50	A/ μs
		SC50C-80~120		200	
T_j	Operating Junction Temperature			-30~+125	$^\circ C$
T_{stg}	Storage Temperature			-30~+125	$^\circ C$
	Mounting Torque			70	kgf·cm
	Mass	Excluding nut, washer 2.6g and wrapping material 0.1g		43	g

Electrical Characteristics

Symbol	Item	Conditions		Ratings	Unit
I_{DRM}	Repetitive Peak Off-State Current, max.	at V_{DRM} , single phase, half wave, $T_j = 125^\circ C$		5	mA
I_{RRM}	Repetitive Peak Reverse Current, max.	at V_{DRM} , single phase, half wave, $T_j = 125^\circ C$		5	mA
V_{TM}	Peak On-State Voltage, max.	On-State Current 150A, $T_j = 25^\circ C$ Inst. measurement		1.95	V
I_{GT}/V_{GT}	Gate Trigger Current/Voltage, max.	$T_j = 25^\circ C$, $I_T = 1A$, $V_D = 6V$		70/3	mA/V
V_{GD}	Non-Trigger Gate, Voltage, min.	$T_j = 125^\circ C$, $V_D = 1/2 V_{DRM}$		0.25	V
t_{gt}	Turn On Time, max	$I_T = 50A$, $I_G = 100mA$, $T_j = 25^\circ C$, $V_D = 1/2 V_{DRM}$, $dI_G/dt = 0.1A/\mu s$		10	μs
dv/dt	Critical Rate of Rise of On-State Voltage, min.	SC50C-40~60	$T_j = 125^\circ C$, $V_D = 2/3 V_{DRM}$	100	V/ μs
		SC50C-80~120		$T_j = 125^\circ C$, $V_D = 2/3 V_{DRM}$	
I_H	Holding Current, typ.	$T_j = 25^\circ C$		30	mA
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to case		0.6	$^\circ C/W$

* mark : Thyristor and Diode part. No mark : Thyristor part

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