

# THYRISTOR MODULE (SINGLE PHASE BRIDGE TYPE)

## FSD20A30/60

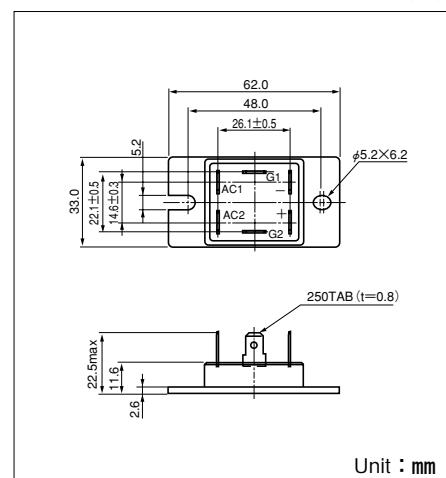
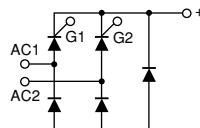
UL:E76102(M)

FSD20A is a single phase bridge module consist of thyristors and diodes

- $I_D=20A$ ,  $V_{RRM}=600V$
- Easy Construction
- Highly reliable glass passivated chips

### (Applications)

Rectification (Bridge)  
Motor Drive



( $T_j=25^\circ\text{C}$  unless otherwise specified)

### ■ Maximum Ratings

Symbol	Item	Ratings		Unit
		FSD20A30	FSD20A60	
$V_{RRM}$	Repetitive Peak Reverse Voltage	300	600	V
$V_{DRM}$	Repetitive Peak Off-State Voltage	300	600	V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(AV)}$	Average On-State Current	Single phase, half wave, $180^\circ$ conduction, $T_c : 65^\circ\text{C}$	20	A
$I_{TSM}$	Surge On-State Current	$\frac{1}{2}\text{cycle}$ , 50Hz/60Hz, peak value, non-repetitive	180/200	A
$I^2t$	$I^2t$		165	$\text{A}^2\text{s}$
$P_{GM}$	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 On-State Current	$I_G=100\text{mA}$ , $T_j=25^\circ\text{C}$ , $V_D=\frac{1}{2}V_{DRM}$ , $dI_G/dt=1\text{A}/\mu\text{s}$	100	$\text{A}/\mu\text{s}$
$V_{ISO}$	Isolation Breakdown Voltage (R.M.S.)	A.C.1minute	2500	V
$T_j$	Operating Junction Temperature		-30 to +125	$^\circ\text{C}$
$T_{stg}$	Storage Temperature		-30 to +125	$^\circ\text{C}$
	Mounting Torque (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	$\text{N}\cdot\text{m}$ ( $\text{kgf}\cdot\text{cm}$ )
	Mass		66	g

### ■ Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
$I_{DRM}$	Repetitive Peak Off-State Current, max.	at $V_{DRM}$ , single phase, half wave, $T_j=125^\circ\text{C}$	5	mA
$I_{RRM}$	Repetitive Peak Reverse Current, max.	at $V_{DRM}$ , single phase, half wave, $T_j=125^\circ\text{C}$	5	mA
$V_{TM}$	Peak On-State Voltage, max.	On-State Current 30A, $T_j=25^\circ\text{C}$ Inst. measurement	1.5	V
$I_{GT}/V_{GT}$	Gate Trigger Current/Voltage, max.	$T_j=25^\circ\text{C}$ , $I_T=1\text{A}$ , $V_D=6\text{V}$	40/1.2	$\text{mA}/\text{V}$
$V_{GD}$	Non-Trigger Gate, Voltage. min.	$T_j=125^\circ\text{C}$ , $V_D=\frac{1}{2}V_{DRM}$	0.2	V
$t_{gt}$	Turn On Time, max.	$I_T=10\text{A}$ , $I_G=100\text{mA}$ , $T_j=25^\circ\text{C}$ , $V_D=\frac{1}{2}V_{DRM}$ , $dI_G/dt=1\text{A}/\mu\text{s}$	10	$\mu\text{s}$
$dv/dt$	Critical Rate of Rise of Off-State Voltage, min.	$T_j=125^\circ\text{C}$ , $V_D=\frac{2}{3}V_{DRM}$ , Exponential wave.	50	$\text{V}/\mu\text{s}$
$I_H$	Holding Current, typ.	$T_j=25^\circ\text{C}$	30	mA
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to case	1.0	$^\circ\text{C}/\text{W}$

**SanRex®**

50 Seaview Blvd. Port Washington, NY 11050-4618 PH.(516)625-1313 FAX(516)625-8845 E-mail: semi@sanrex.com

