SanRex®

Three Phase Half Control Bridge (Low Profile of 17mm height)

SFF150AA160

$I_{F(AV)}$= 150A, V_{RRM}= 1600V

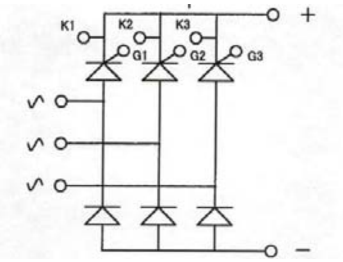
SanRex Three Phase Half Control Bridge Module **SFF150AA** is designed for applications requiring low profile converter-inverter circuit designs. Thanks to the **17mm flat case height design**, the **SFF150AA160** can be connected with IGBT modules at the same 17mm case height. This advantage typically reduces the needed parts and manufacturing cost. It also enables level parallel connections for larger capacity, contributes reducing stray inductance, improving high efficiency and reliability

Features

- * Low Case Height of 17mm
- * Very Low On-state Voltage Drop
- * High Surge Current Capability
- * RoHS Compliance

Typical Applications

- * Welding and Plasma Cutting Machines
- * Battery Chargers
- * Power Supplies
- * Motor Controls



Internal schematic diagram

< Maximum Ratings > Tj = 25°C (unless otherwise noted)

Symbol	Item	SFF150AA160	Unit
*V_{RRM}	Repetitive Peak Reverse Voltage	1600	V
*V_{RSM}	Non-Repetitive Peak Reverse Voltage	1700	V

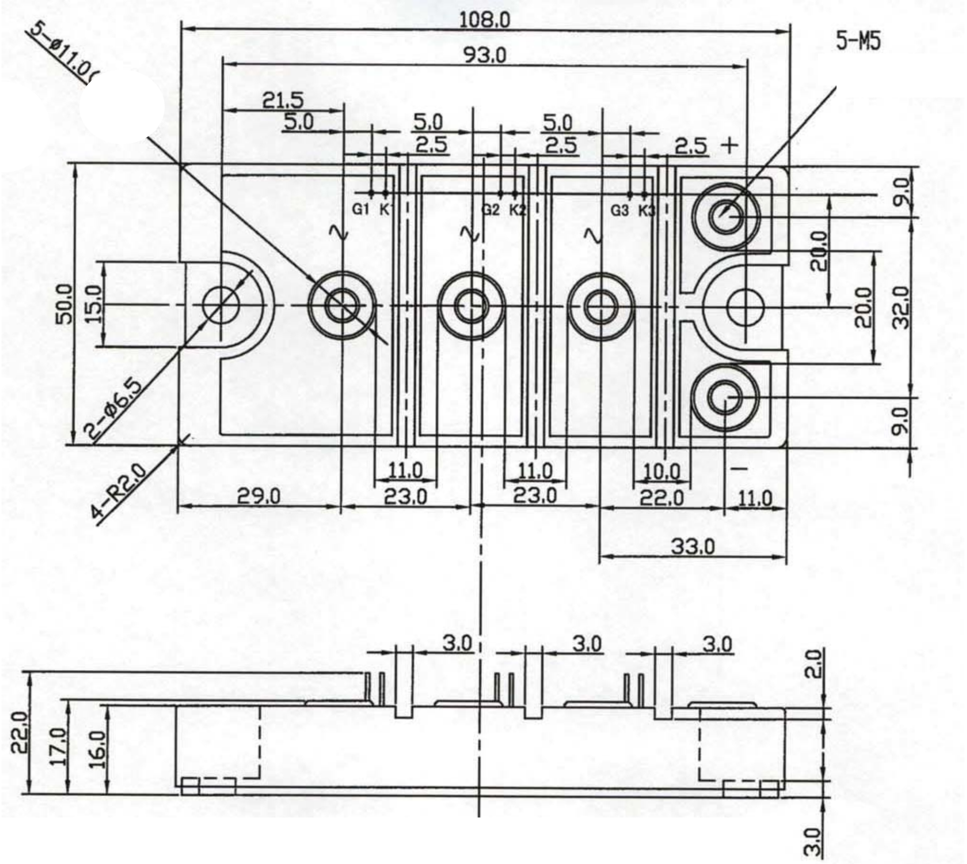
Symbol	Item		Conditions	Ratings	Unit
I_D	D.C. Output Current		Three phase, Full wave, $T_C = 87°C$	150	A
*I_{TSM}	Surge On-state Current		1/2cycle, 60Hz, Peak, non-repetitive	1300	A
*I^2t	I^2t (for fusing)		Value for one cycle surge current	7000	A^2s
PGM	Peak Gate Power Dissipation			10	W
PG(AV)	Average Gate Power Dissipation			1	W
IFGM	Peak Gate Current			3	A
VFGM	Peak Gate Voltage (Fwd)			10	V
VRGM	Peak Gate Voltage (Rvs)			5	V
di/dt	Critical Rate of Rise of On-State Current			100	A/μs
*V_{ISO}	Isolation Voltage		A.C. 1 minute	2500	V
*Tj	Junction Temperature			-40 to +150	°C
*Tstg	Storage Temperature			-40 to +125	°C
	Mounting Torque	Mounting M5	Recommended 1.5-2.5	2.7	N·m
		Terminal M5	Recommended 1.5-2.5	2.7	
	Mass		Typical Value	290	g

Three Phase Half Control Bridge SFF150AA160

< Electrical Characteristics > Tj= 25°C (unless otherwise noted)

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive Peak Off-state Current	$V_D = V_{DRM}$, Tj= 150°C	-	-	50	mA
$*I_{RRM}$	Repetitive Peak Reverse Current	$V_R = V_{RRM}$, Tj= 150°C	-	-	50	mA
$*V_{TM}$	On-state Voltage	I_T= 150A	-	-	1.80	V
$*VT_{(T0)}$	Threshold Voltage	Tj= 25°C	-	-	1.16	V
		Tj= 150°C	-	-	0.85	V
*rT	Dynamic Resistance	Tj= 25°C	-	-	4.5	mΩ
		Tj= 150°C	-	-	6.0	mΩ
IGT	Gate Trigger Current	V_D = 6V, I_T=1A	-	-	150	mA
VGT	Gate Trigger Voltage	V_D = 6V, I_T=1A	-	-	3.0	V
VGD	Gate Non-Trigger Voltage	Tj= 150°C, $V_D = 1/2V_{DRM}$	0.25	-	-	V
IH	Holding Current		-	130	-	mA
IL	Latching Current		-	150	-	mA
dv/dt	Critical Rate of Rise of On-State Voltage	Tj= 150°C, $V_D = 2/3V_{DRM}$, Exp. waveform	-	-	1000	V/μs
Rth(j-c)	Thermal Resistance	Junction to case (per Thyristor)	-	-	0.64	°C/W
Rth(c-f)		Case to hetsink (per Module)	-	-	0.06	°C/W

Marked with * for Thyrister and Diode, Without * for Thyrister only



* Dimensions in millimeters (1mm=0.0394")