

SanRex

Three Phase Diode Bridge With Built-In Thyristor

CVM75BB160

$I_D = 75A, V_{RRM} = 1600V$

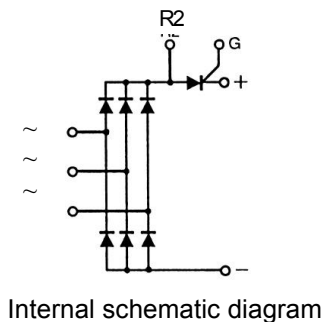
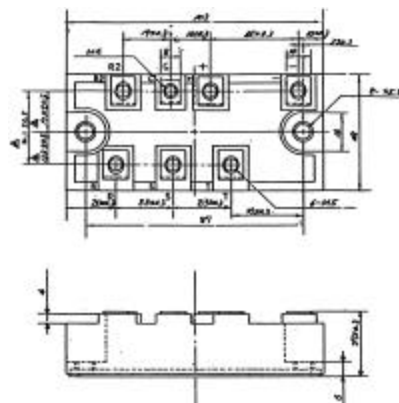
SanRex three phase diode bridge with built-in thyristor module **CVM75BB160** is designed for three phase full wave rectification requiring soft starting. Built-In Thyristor works to prevent inrush current to the circuit with high reliability by eliminating the mechanical relay contact. The modules are isolated for easy mounting with other components or a common heatsink.

Features

- * Low forward voltage drop
- * High surge forward current
- * Glass-passivated chips
- * Built-In Thyristor

Typical Applications

- * Welding and Plasma Cutting Machines
- * Rectifier in Switch Mode Power Supplies (SMPS)
- * Uninterruptible Power Supplies (UPS)
- * Motor drives



< Maximum Ratings & Electrical Characteristics for diodes >

$T_j = 25^{\circ}C$ unless otherwise noted

Symbol	Item	Conditions	Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1600	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage		1700	V
I_D	Output Current (DC)	$T_C = 98^{\circ}C$	75	A
I_{FSM}	Surge Forward Current	$\frac{1}{2}$ cycle, 60Hz, Peak value, non-repetitive	1000	A
T_j	Junction Temperature		-30 to +150	$^{\circ}C$
I_{RRM}	Repetitive Peak Reverse Current	$V_R = V_{RRM}, T_j = 150^{\circ}C$	12	mA
V_{FM}	Forward Voltage Drop	$I_F = 75A, \text{Inst. measurement}$	1.50	V
$R_{th(j-c)}$	Thermal Resistance	Junction to case	0.23	$^{\circ}C/W$

< Maximum Ratings & Electrical Characteristics for Thyristor >

$T_j = 25^\circ\text{C}$ unless otherwise noted

Symbol	Item	Conditions	Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1600	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage		1630	V
V_{DRM}	Repetitive Peak Off-State Voltage		1600	V
$I_{T(AV)}$	Average On-State Current	1 ph half wave average, 180°C conductive angle, (3 Ph full wave rectification $T_c = 97^\circ\text{C}$)	75	A
I_{TSM}	Surge On-State Current	$\frac{1}{2}$ cycle, 60Hz, Peak value, non-repetitive	1000	A
I^2t	I^2t (for fusing)		4150	A^2s
di/dt	Critical Rate of Rise of On-State Current	$I_G=100\text{mA}$, $V_D=1/2V_{DRM}$, $dI_G/dt=0.1\text{A/Fs}$	150	A/Fs
T_j	Junction Temperature		-30 to +135	$^\circ\text{C}$
I_{DRM}/I_{RRM}	Repetitive Peak Off-State/Reverse Current	$V_R = V_{DRM}$, V_{RRM} , $T_j = 135^\circ\text{C}$	60	mA
V_{TM}	Forward Voltage Drop	$I_F = 75\text{A}$, Inst. measurement	1.15	V
I_{GT}/V_{GT}	Maximum Gate Trigger Current/Voltage	$I_T = 1\text{A}$, $V_D = 6\text{V}$	70/3	mA/V
dv/dt	Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{DRM}$, $T_j = 125^\circ\text{C}$	500	V/Fs
R_{th}	Thermal Resistance	Junction to case	0.44	$^\circ\text{C/W}$

< Maximum Ratings & Electrical Characteristics per module >

$T_j = 25^\circ\text{C}$ unless otherwise noted

Symbol	Item	Conditions	Ratings	Unit
T_{stg}	Storage Temperature		-30 to +125	V
	Mounting Torque	Mounting (M5)	Recommended 1.5-2.5	N·m
		Terminal (M4)	Recommended 1.0-1.4	
$R_{th(c-f)}$	Thermal Resistance	Case to fin	0.10	$^\circ\text{C/W}$
V_{ISO}	Isolation Voltage (R.M.S.)	A.C. 1 minute	2500	V
	Mass	Typical Value	300	g