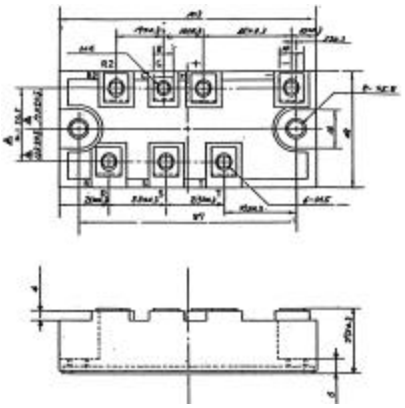
SanRex

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.

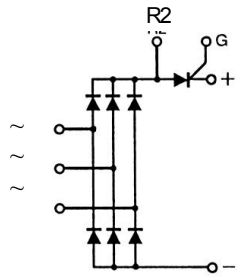


Features

* 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



Internal schematic diagram

< Maximum Ratings & Electrical Characteristics for diodes > Tj = 25°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°C	75	A
I_{FSM}	Surge Forward Current	½ cycle, 60Hz, Peak value, non-repetitive	1000	A
Tj	Junction Temperature		-30 to +150	°C
I_{RRM}	Repetitive Peak Reverse Current	V_R = V_{RRM}, Tj= 150°C	12	mA
V_{FM}	Forward Voltage Drop	I_F= 75A, Inst. measurement	1.50	V
Rth(j-c)	Thermal Resistance	Junction to case	0.23	°C/W

Three phase Diode Bridge with Built-In Thyristor CVM75BB160

< Maximum Ratings & Electrical Characteristics for Thyristor> Tj = 25°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°C)	75	A
I_{TSM}	Surge On-State Current	½ 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=100mA, V_D=1/2V_{DRM}, dI_G/dt=0.1A/Fs	150	A/Fs
Tj	Junction Temperature		-30 to +135	°C
I_{DRM}/I_{RRM}	Repetitive Peak Off-State/Reverse Current	V_R = V_{DRM}, V_{RRM}, Tj= 135°C	60	mA
V_{TM}	Forward Voltage Drop	I_F= 75A, Inst. measurement	1.15	V
I_{GT}/V_{GT}	Maximum Gate Trigger Current/Voltage	I_T=1A, V_D=6V	70/3	mA/V
dv/dt	Critical Rate of Rise of Off-State Voltage	V_D = 2/3 V_{DRM}, Tj= 125°C	500	V/Fs
Rth	Thermal Resistance	Junction to case	0.44	°C/W

< Maximum Ratings & Electrical Characteristics per module > Tj = 25°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	2.7	N·m
		Terminal (M4)	Recommended 1.0-1.4	1.5	
Rth(c-f)	Thermal Resistance		Case to fin	0.10	°C/W
V_{ISO}	Isolation Voltage (R.M.S.)		A.C. 1 minute	2500	V
	Mass		Typical Value	300	g