CRYDOM COMPANY

POWER MODULES

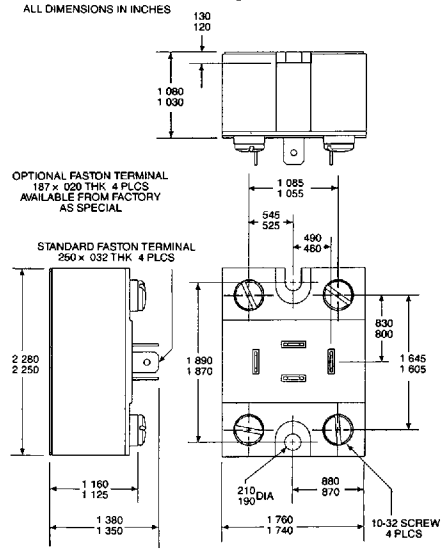
SERIES M50

42.5A-100A
SCR/DIODE CIRCUITS

PARAMETER	SYM.	UNITS	SPECIFICATION LIMITS				CONDITIONS
DC Output Current (Max)	I_O	A	42 5	50	80	100	T_C = 85°C (Circuits 1, 2, 3 & 6)
One-Cycle Surge Current (Peak)	I_{TSM}	A	600	600	1200	1500	60Hz Sine Wave, Non-Repetitive (Fig 6)
I²t for Fusing (Max)	I²t	A²S	1500	1500	6000	9350	60Hz Sine Wave with Full Reapplied Voltage
Rate-of-Rise of On-State Current (Max.)	di/dt	A/µS	100				
Rate-of-Rise of Off-State Voltage (Max)	dv/dt	V/µS	200				Exponential Rise to 80% V_{VDRM} Gate Open Circuit, T_C = 125°C
Repetitive Peak Off-State and Reverse Blocking Voltage (Max.)	V_{DRM} & V_{RRM}	V	300V for 120V_{RMS}(-1) 600V for 240V_{RMS}(-2) 800V for 280V_{RMS}(-3) 1000V for 440V_{RMS}(-4) *1200V for 480V_{RMS}(-5)				T_J = 125°C
Isolation Voltage (Min.)	V_{ISOL}	Vrms	2500				Any Terminal-to-Base
Junction Operating Temp. Range	T_J	°C	– 40 to 125				
Storage Temperature Range	T_{STG}	°C	– 40 to 125				
Thermal Resistance (Case-to-Sink)	$R\theta_{C-S}$	°C/W	.07				With Thermal Grease
Thermal Resistance (Junction-to-Case)	$R\theta_{J-C}$	°C/W	0.56	0.56	0.36	0.36	Per Device
Forward Gate Current (Peak)	I_{FGM}	A	5				See Fig 7
Forward Gate Voltage (Peak)	V_{FGM}	V	25				
Reverse Gate Voltage (Peak)	V_{RGM}	V	5				
Gate Power (Peak)	P_{GM}	W	20				10 µS Duration
Gate Current Required to Fire all Devices (Max.)	I_{GT}	mA	150				T_C = 25°C
Gate Voltage Required to Fire all Devices (Max)	V_{GT}	V	3				
Latching Current (Max)	I_L	mA	300				
Holding Current (Max.)	I_H	mA	150				
Leakage Current	I_{DRM} & I_{DM}	mA	10				T_J = 125°C at Peak Rated Voltage
Case Style			**M50**				

*Higher values are available. Consult Factory

M50 Outline/Mounting Dimensions



MOUNTING TORQUE REQUIRED·
(A) Mounting Screws (not included) 20 in.-lb
(B) Terminal Studs (screws included, unmounted) 30 in -lb

Part Number Designation Code

M50 50 1 2 FV

CASE STYLE
M50

DC OUTPUT CURRENT
50, 80, OR 100A (M50 CASE)

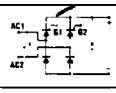
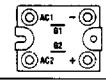
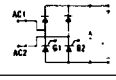
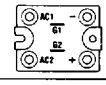
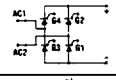
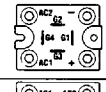
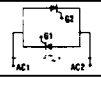
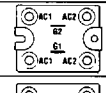
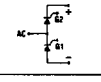
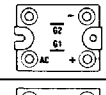
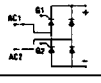
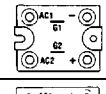
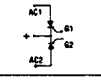
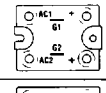
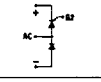
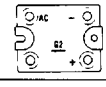
CIRCUIT DESIGNATION

***VOLTS AC (RMS)**
1-120V 4-440V
2-240V 5-480V
3-320V

F-FREE WHEELING DIODE
V-VOLTAGE SUPPRESSOR
FV-BOTH

*Consult Factory for higher voltages

CIRCUIT DESIGNATION

M50	CIRCUIT TYPE	CIRCUIT SCHEMATICS	CIRCUIT OPTIONS	TERMINAL LOCATIONS—M-50
1	HYBRID BRIDGE COMMON CATHODE SCRS		F,V	
2	HYBRID BRIDGE COMMON ANODE SCRS		F,V	
3*	FULL SCR BRIDGE		V	
4	AC SWITCH		V	
5	SCR DOUBLER		N/A	
6	HYBRID BRIDGE DOUBLER		V	
7	SCR CENTER TAP COMMON CATHODE		N/A	
8	HYBRID DOUBLER		N/A	

*Not available in 100A Rating.