



POWER MODULES

SERIES M50

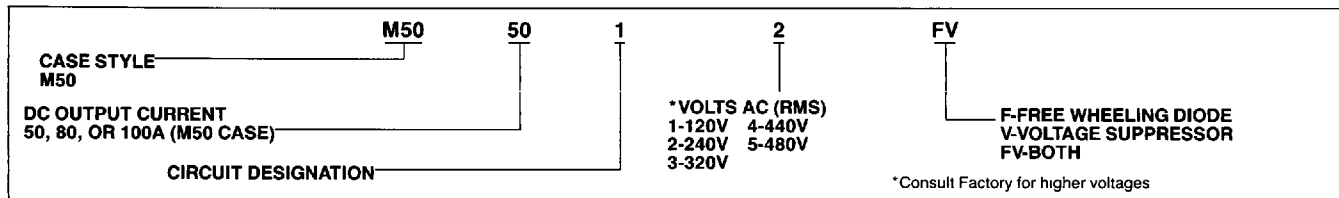
42.5A-100A

SCR/DIODE CIRCUITS

PARAMETER	SYM.	UNITS	SPECIFICATION LIMITS				CONDITIONS
			42.5	50	80	100	
DC Output Current (Max)	I_O	A	42.5	50	80	100	$T_C = 85^\circ\text{C}$ (Circuits 1, 2, 3 & 6)
One-Cycle Surge Current (Peak)	I_{TSM}	A	600	600	1200	1500	60Hz Sine Wave, Non-Repetitive (Fig 6)
I ² t for Fusing (Max)	I^2t	A ² S	1500	1500	6000	9350	60Hz Sine Wave with Full Reapplied Voltage
Rate-of-Rise of On-State Current (Max.)	dv/dt	A/ μ S	100				
Rate-of-Rise of Off-State Voltage (Max)	dv/dt	V/ μ S	200				Exponential Rise to 80% V_{VDRM} Gate Open Circuit, $T_C = 125^\circ\text{C}$
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)				$T_J = 125^\circ\text{C}$
Isolation Voltage (Min.)	V_{ISOL}	Vrms	2500				Any Terminal-to-Base
Junction Operating Temp. Range	T_J	$^\circ\text{C}$	-40 to 125				
Storage Temperature Range	T_{STG}	$^\circ\text{C}$	-40 to 125				
Thermal Resistance (Case-to-Sink)	$R\theta_{C-S}$	$^\circ\text{C/W}$.07				With Thermal Grease
Thermal Resistance (Junction-to-Case)	$R\theta_{J-C}$	$^\circ\text{C/W}$	0.56	0.56	0.36	0.36	Per Device
Forward Gate Current (Peak)	I_{FGM}	A	5				
Forward Gate Voltage (Peak)	V_{FGM}	V	25				See Fig 7
Reverse Gate Voltage (Peak)	V_{RGM}	V	5				
Gate Power (Peak)	P_{GM}	W	20				10 μ S Duration
Gate Current Required to Fire all Devices (Max.)	I_{GT}	mA	150				
Gate Voltage Required to Fire all Devices (Max)	V_{GT}	V	3				$T_C = 25^\circ\text{C}$
Latching Current (Max)	I_L	mA	300				
Holding Current (Max.)	I_H	mA	150				
Leakage Current	I_{DM} & I_{DRM}	mA	10				$T_J = 125^\circ\text{C}$ at Peak Rated Voltage
Case Style			M50				

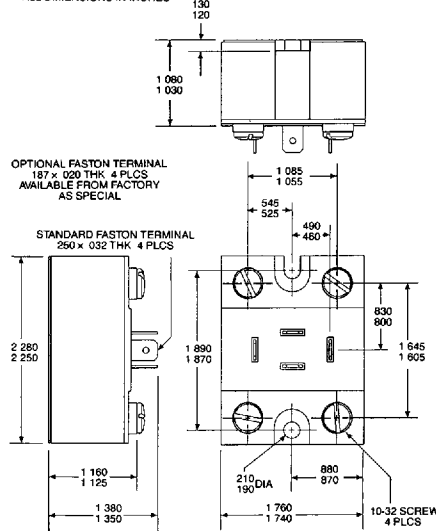
*Higher values are available. Consult Factory

Part Number Designation Code



M50 Outline/Mounting Dimensions

ALL DIMENSIONS IN INCHES



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

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.