IXYS

Data Sheet No. 911012A November 1991

Single-Phase Diode Rectifier Bridge

VBO20

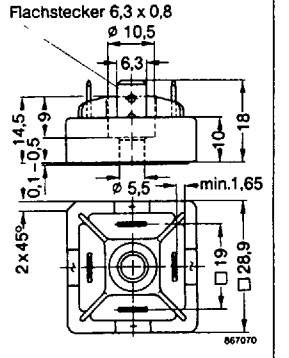
FEATURES:

- Avalanche Rated Parts Available
- Isolated Direct Copper Bond Base Plate
- Easy Chassis Mounting
- 1/4" Fast-On Connectors
- Blocking Voltage to 1600 Volts
- UL Registered (E72873M)

Part Number		V_{RRM}	I_{dav}
Normal	Avalanche		
VBO20-04N02		400V	31A
VBO20-06N02		600V	
VBO20-08N02		800V	
VBO20-10N02		1000V	
VBO20-12N02	VBO20-12A02	1200V	
VBO20-14N02	VBO20-14A02	1400V	
VBO20-16N02	VBO20-16A02	1600V	

APPLICATIONS:

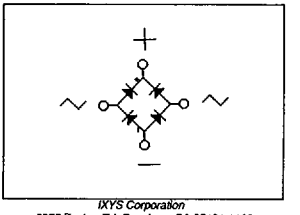
- Power Supplies
- Input Rectifiers for Variable Frequency
- Rectifiers for DC Motor Field Current



MAXIMUM RATINGS

Parameter		Symbol	Rating	Unit
Repetitive Peak Reverse Voltage	-04	V_{RRM}	400	V
	-06	V_{RRM}	600	V
	-08	V_{RRM}	800	V
	-10	V_{RRM}	1000	V
	-12	V_{RRM}	1200	V
	-14	V_{RRM}	1400	V
	-16	V_{RRM}	1600	V
Avalanche Power	(T_{VJ} = T_{VJM}, t=10µs)	P_{RSM}	3 4	kW
Isolation Voltage	(50/60Hz, 1 min)	V_{ISOL}	2500	V_{RMS}
Average DC Output Current	(T_C = 85°C)	I_{dAV}	31	A
RMS Current Limit (2)		I_{dRMS}	45	A
Peak Single-Cycle Surge Current, 10ms	(T_{VJ} = 45°C)	I_{FSM}	300	A
	(T_{VJ} = T_{VJM})		250	A
Peak Single-Cycle Surge Current, 8 3ms	(T_{VJ} = 45°C)	I_{FSM}	315	A
	(T_{VJ} = T_{VJM})		265	A
I^2t, 10ms	(T_{VJ} = 45°C)	$\int i^2t$	450	A^2s
	(T_{VJ} = T_{VJM})		312	A^2s
I^2t, 8 3ms	(T_{VJ} = 45°C)	$\int i^2t$	420	A^2s
	(T_{VJ} = T_{VJM})		290	A^2s
Operating & Storage Temperature		T_J	-40 to +150°C	°C
Operating & Storage Temperature		T_{STG}	-40 to +125°C	°C
Torque Limit for Mounting Screws (1)		M_D	2 5/22	Nm/in-lb
Weight			15/0 6	g/oz

* IXYS reserves the right to change limits, test conditions, and dimensions without notice



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VBO20

ELECTRICAL CHARACTERISTICS (per diode)

CHARACTERISTIC	TEST CONDITION	SYMBOL	MAX	UNIT
Reverse Leakage Current	T_{VJ} = 125°C; V_R = V_{RRM}	I_R	5 0	mA
Forward Voltage Drop	I_F = 55A, T_{VJ} = 25°C	V_F	1 6	V
Forward Drop Constants for Power Loss Calculations	T_{VJ} = T_{VJM}	V_{TO}	0 85	V
		r_F	14	mΩ

THERMAL CHARACTERISTICS

MODULE	Junction - to - Case	R_{thJC}	3 0	K/W
	Case - to - Heatsink	R_{thCS}	0.1	K/W
DIODE	Junction - to - Case	R_{thJC}	0 75	K/W
	Case - to - Heatsink	R_{thCS}	0 4	K/W

Note: (1) Recommended mounting torque using an M5 or 10-32 UNF fastener is 1 5-2 0 Nm (13 3-17.7 in-lb)

Power dissipation vs. direct output current and ambient temperature or three-phase, rectangular, output current.