Bulletin E2733 rev.C

International Rectifier IOR

2KBB SERIES
1.9A single phase rectifier bridge

Maximum Ratings and Characteristics

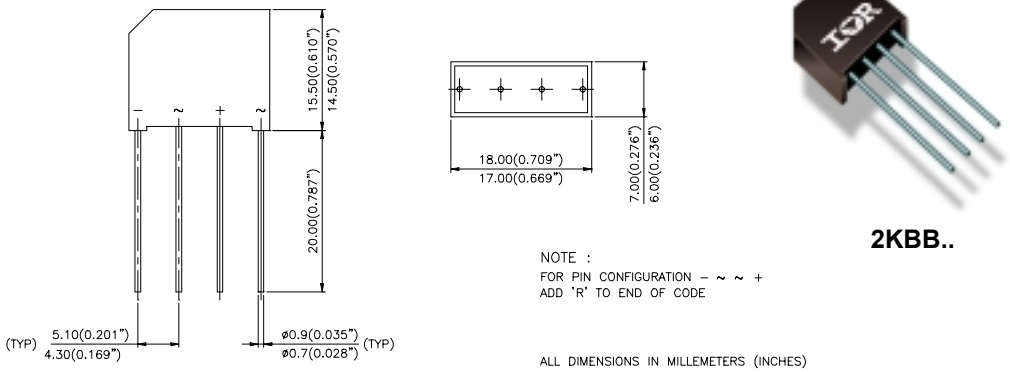
		2KBB..	Units
I_O		1.9	A
I_{FSM}	50Hz	50	A
	60Hz	52	A
I^2t	50Hz	17.7	A^2s
	60Hz	16.1	A^2s
V_{RRM}		100 to 1000	V
T_J		-40 to 150	°C

Description/Features

A 1.9A single phase diode brodge rectifier assembly consisting of four silicon junction diodes in a plastic encapsulation, intended for general applications in industrial and consumer equipment.

- Suitable for printed circuit board mounting
- Leads on standard 2.54mm (0.1in.) grid
- Compact construction
- High surge current capability
- Polarized package
- Equivalent to standard DIN parts

Part number	DIN code equivalent
2KBB10	B40C1500
2KBB20	B80C1500
2KBB40	B125C1500
2KBB60	B250C1500
2KBB80	B380C1500
2KBB100	B500C1500



2KBB..

Reverse voltage ratings and application data

Part number	V_{RRM}, V_{RSM}: maximum peak reverse voltage	I_{RM}: typical peak reverse current per diode at rated V_{RRM}		Application data (see figure 3)		
		T_J = 25°C	T_J = 150°C	V_{RMS}: maximum recommended AC supply voltage	C_{max}: maximum load capacitance	R_{min}: minimum source resistance
	V	μA	μA	V	μF	Ω
2KBB10, 2KBB10R	100	10	500	40	5000	0.5
2KBB20, 2KBB20R	200	10	500	80	3300	0.8
2KBB40, 2KBB40R	400	10	500	125	1600	1.5
2KBB60, 2KBB60R	600	10	500	250	1200	2.5
2KBB80, 2KBB80R	800	10	500	380	800	3.0
2KBB100, 2KBB100R	1000	10	500	500	600	5.0

ELECTRICAL SPECIFICATIONS

Forward conduction

		2KBB...	Units	Conditions
I_O	Maximum average rectified (DC) output current	1.9	A	T_A = 45°C, resistive or inductive load
		1.5	A	T_A = 45°C, capacitive load
I_{FSM}	Maximum peak one cycle, non-repetitive surge current	50	A	50 Hz half cycle sine wave or 6 ms rectangular pulse — Following any rated load condition, and with rated V_{RRM} applied following surge.
		52		60 Hz half cycle sine wave or 5 ms rectangular pulse
I^2t	Maximum I^2t capability for fusing	12.5	A^2s	t = 10 ms — Rated V_{RRM} applied following surge, initial T_J = 150°C.
		11.3		t = 8.3 ms
		17.7	A^2s	t = 10 ms — V_{RRM} = 0 following surge, initial T_J = 150°C.
		16.1		t = 8.3 ms
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ capability for fusing ①	177	$A^2\sqrt{s}$	V_{RRM} following surge = 0, t = 0.1 to 10 ms.
V_{FM}	Maximum peak forward voltage, per diode	1.1	V	I_O = 1.9A (3.0A pk)
f	Operating frequency range	40 to 2000	Hz	

① I^2t for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$.

THERMAL AND MECHANICAL SPECIFICATIONS

		2KBB...	Units	Conditions
T_J, T_{stg}	Operating and storage junction temperature ranges	-40 to 150	°C	
wt	Approximate weight	4 (0.14)	g (oz.)	

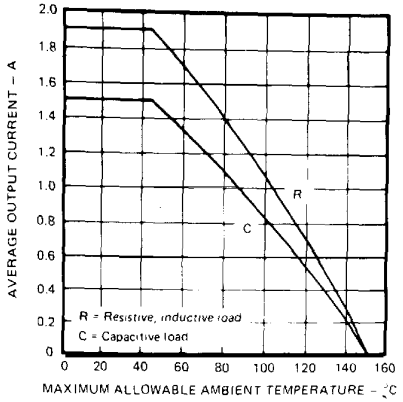


Fig. 1 – Average (DC) Output Current Vs. Maximum Allowable Ambient Temperature

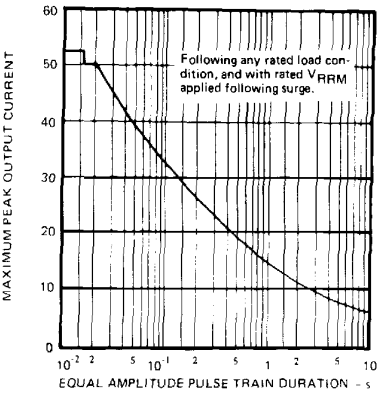


Fig. 2 – Maximum Non-repetitive Surge Current Vs. Pulse Train Duration (f = 50 Hz)

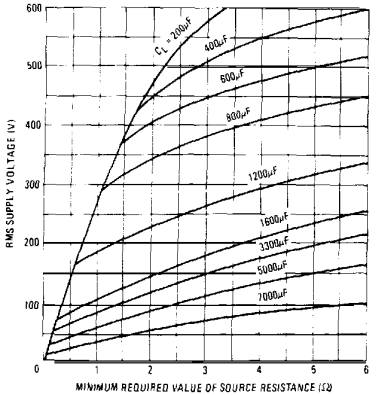


Fig. 3 – Minimum Required Source Resistance Vs. RMS Supply Voltage and Load Capacitance

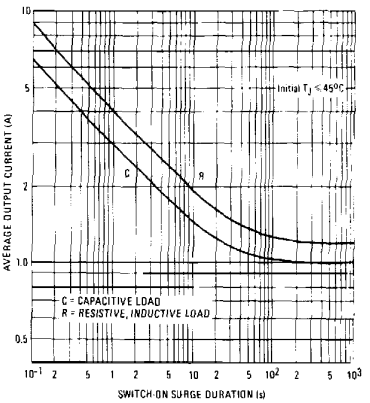


Fig. 4 – Maximum Switch-On Surge Current Vs. Surge Duration