



Single Phase Rectifier Bridge, 3 A, 6 A



D-72

FEATURES

- Suitable for printed circuit board or chassis mounting
- Compact construction
- High surge current capability
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS
COMPLIANT

DESCRIPTION

The VS-KBPC series of single phase rectifier bridge consists of four silicon junctions connected as a full bridge. These devices are intended for general use in industrial and consumer equipment.

PRIMARY CHARACTERISTICS

$I_{O(AV)}$	3.0 A to 6.0 A
V_{RRM}	50 V to 1000 V
Package	D-72
Circuit configuration	Single phase bridge

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES KBPC1	VALUES KBPC6	UNITS
I_o		3	6	A
	T_C	50	50	°C
I_{FSM}	50 Hz	50	125	A
	60 Hz	55	137	
I^2t	50 Hz	12.5	78	A ² s
	60 Hz	11.4	71	
V_{RRM}	Range	50 to 1000		V
T_J		-40 to +150		°C

ELECTRICAL SPECIFICATIONS

VOLTAGE RATINGS

PART NUMBER	V_{RRM} , MAXIMUM REPETITIVE PEAK REVERSE VOLTAGE V	V_{RSM} , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE V	V_{RMS} , MAXIMUM RECOMMENDED RMS SUPPLY VOLTAGE V
VS-KBPC1005	50	50	20
VS-KBPC101	100	100	40
VS-KBPC102	200	200	80
VS-KBPC104	400	400	125
VS-KBPC106	600	600	250
VS-KBPC108	800	800	380
VS-KBPC110	1000	1000	500
VS-KBPC6005	50	50	20
VS-KBPC601	100	100	40
VS-KBPC602	200	200	80
VS-KBPC604	400	400	125
VS-KBPC606	600	600	250
VS-KBPC608	800	800	380
VS-KBPC610	1000	1000	500



FORWARD CONDUCTION					
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES KBPC1	VALUES KBPC6	UNITS
Maximum DC output current	I_O	$T_C = 50\text{ }^\circ\text{C}$, resistive or inductive load	3.0	6.0	A
		$T_C = 50\text{ }^\circ\text{C}$, capacitive load	2.4	4.7	
Maximum peak one cycle, non-repetitive surge current	I_{FSM}	$t = 10\text{ ms}$, 20 ms	Following any rated load condition and with rated V_{RRM} reapplied	50	125
		$t = 8.3\text{ ms}$, 16.7 ms		55	137
Maximum I^2t capability for fusing	I^2t	$t = 10\text{ ms}$	Initial $T_J = T_J$ maximum 100 % V_{RRM} reapplied	12.5	78
		$t = 8.3\text{ ms}$		11.4	71
		$t = 10\text{ ms}$		17.7	110
		$t = 8.3\text{ ms}$		16.1	1000
Maximum $I^2\sqrt{t}$ capability for fusing	$I^2\sqrt{t}$	$t = 0.1\text{ ms to } 10\text{ ms}$, no voltage reapplied	177	1105	$A^2\sqrt{s}$
Maximum peak forward voltage per diode	V_{FM}	$I_{FM} = 0.5 \times I_O$, $T_J = 25\text{ }^\circ\text{C}$	1.1	1.2	V
Typical peak reverse leakage per diode	I_{RM}	$T_J = 25\text{ }^\circ\text{C}$, 100 % V_{RRM}	10	10	μA
		$T_J = 150\text{ }^\circ\text{C}$, 100 % V_{RRM}	1.0	1.0	mA
Operating frequency range	f		40 to 1000		Hz
Maximum repetitive peak reverse voltage range	V_{RRM}		50 to 1000		V

THERMAL AND MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	VALUES KBPC1	VALUES KBPC6	UNITS
Operating and storage temperature range	T_J, T_{Stg}	-40 to +150		$^\circ\text{C}$
Thermal resistance, junction to case	R_{thJC}	-	-	K/W
Approximate weight		5	6	g
		0.18	0.21	oz.



93585_01 Maximum Allowable Case Temperature ($^\circ\text{C}$)

Fig. 1 - Case Temperature Ratings



93585_02 Maximum Allowable Case Temperature ($^\circ\text{C}$)

Fig. 2 - Case Temperature Ratings



93585_03

Fig. 3 - Non-Repetitive Surge Ratings



93585_04

Fig. 4 - Non-Repetitive Surge Ratings

CIRCUIT CONFIGURATION



LINKS TO RELATED DOCUMENTS

Dimensions	www.vishay.com/doc?95250
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DIMENSIONS in millimeters (inches): **KBPC6, KBPC8**



DIMENSIONS in millimeters (inches): **KBPC1**





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