

## 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](http://www.vishay.com/doc?99912)


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### 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 <sup>2</sup> 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	A <sup>2</sup> s
		$t = 8.3\text{ ms}$		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 <sup>2</sup> √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		°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 (°C)

Fig. 1 - Case Temperature Ratings



93585\_02 Maximum Allowable Case Temperature (°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	<a href="http://www.vishay.com/doc?95250">www.vishay.com/doc?95250</a>
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## D-72

### DIMENSIONS in millimeters (inches): **KBPC6, KBPC8**



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





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