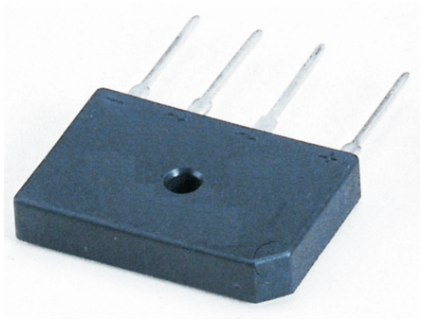
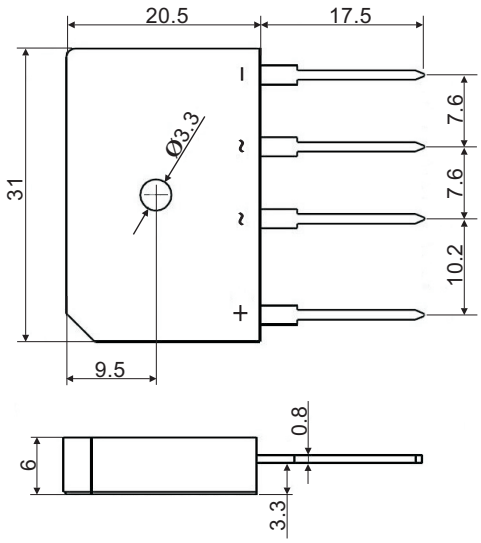
Single-Phase Bridge Rectifier, 50A

KBJ5004 Thru KBJ5012



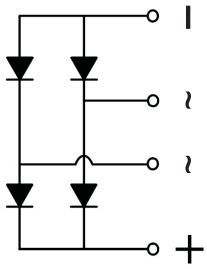


All dimensions in millimeters

FEATURES

- UL recognition file number E320098
- Typical IR less than 2.0 μA
- High surge current capability
- Low thermal resistance
- Compliant to RoHS
- Isolation voltage up to 2500V

RoHS COMPLIANT



TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for big power supply, field supply for DC motor, industrial automation applications.

ADVANTAGE

- International standard package
  Epoxy meets UL 94 V-O flammability rating
- Small volume, light weight
- Small thermal resistance
- High heat-conduction rate
- Low temperature rise
- **Weight**: 10g (0.35 ozs)

PRIMARY CHARACTERRISTICS	
$I_{F(AV)}$	50A
V_{RRM}	400V to 1200V
I_{FSM}	450A
I_R	5 μA
V_F	1.10V
$T_{J\ max.}$	150°C

MAJOR RATINGS AND CHARACTERISTICS (T_A = 25°C unless otherwise noted)								
PARAMETER	**SYMBOL**	**KBJ50**					**UNIT**
		04	**06**	**08**	**10**	**12**	
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	800	1000	1200	V
Peak reverse non-repetitive voltage	V_{RSM}	500	700	900	1100	1300	V
Maximum DC blocking voltage	V_{DC}	400	600	800	1000	1200	V
Maximum average forward rectified output current	$I_{F(AV)}$	50					A
Peak forward surge current single sine-wave superimposed on rated load	I_{FSM}	450					A
Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms) for fusing	I^2t	1012					A^2s
RMS isolation voltage from case to leads	V_{ISO}	2500					V
Operating junction storage temperature range	T_J	-40 to 150					°C
Storage temperature range	T_{STG}	-40 to 125					°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)									
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**KBJ50**					**UNIT**
			04	**06**	**08**	**10**	**12**	
Maximum instantaneous forward drop per diode	I_F = 25A	V_F	1.10					V
Maximum reverse DC current at rated DC blocking voltage per diod	T_A = 25°C	I_R	5					μA
	T_A = 150°C		500					

THERMAL AND MECHANICAC (T_A = 25°C unless otherwise noted)									
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**KBJ50**					**UNIT**
			04	**06**	**08**	**10**	**12**	
Typical thermal resistance junction to case	Single-side heat dissipation, sine half wave	$R_{\theta JC}$ (1)	1.0					°C/W
Mounting torque ± 10 % to heatsink M3	A mounting compound is recommended and the torque should be rechecked after a period of 3 hours to allow for the spread of the compound.		2.5					Nm
Approximate weight			10					g

Notes

(1) With heatsink, single side heat dissipation, half sine wave.

(2) M3 screw.

Device code

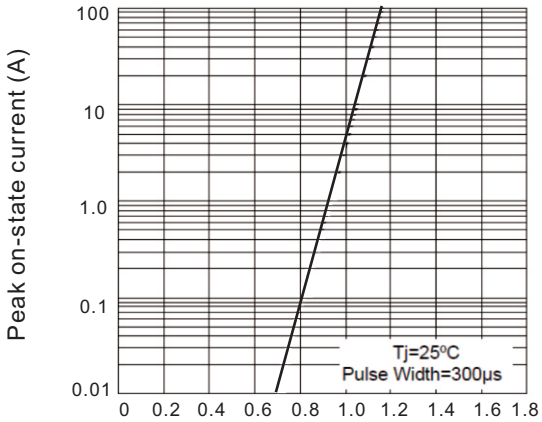
KBJ	50	10
①	②	③

1 - Module type: “KBJ” Package , 1Ø Bridge

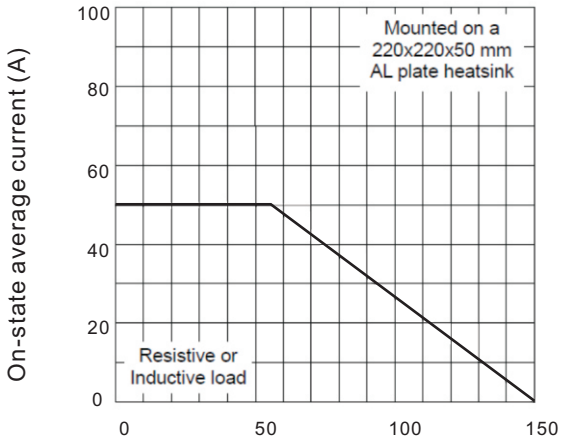
2 - $I_{F(AV)}$ rating:"50" for 50A

3 - Voltage code:code x 100 = V_{RRM}

On-state current and voltage



Case temperature vs on-state average current



On-state surge current vs cycles