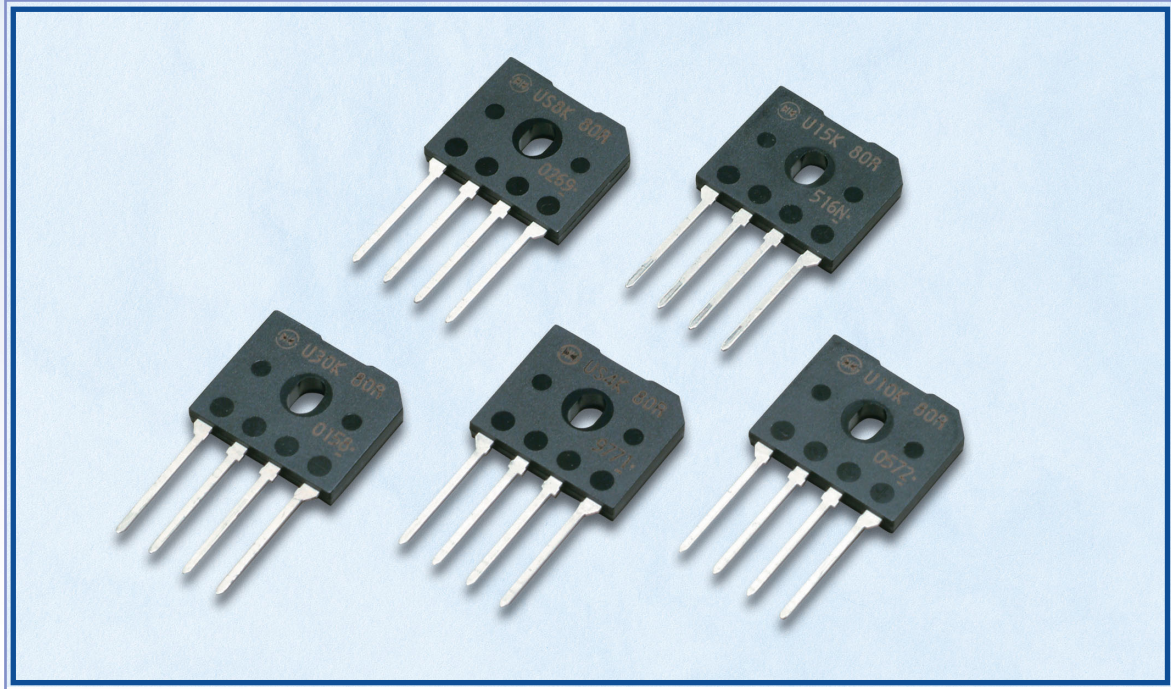


# SILICON BRIDGE DIODES

## **USKB SERIES**

UL File No. E142422



### Summary

Bridge diodes are being required to take up less space accompanying the reduced size of electronic equipment. In order to respond to these needs, Shindengen has developed a new package in offering a complete lineup of bridge diodes that can be used in a wide range of power supply environments.

### Features

- Rectified forward current : 4A (US4KB80R) , 6A (US6KB80R) , 8A (US8KB80R) ,  
(with heat sink)                      10A (US10KB80R) , 15A (US15KB80R) , 30A (US30KB80R)
- Large current capacity of 30A with compact package
- High  $I_{FSM}$  and High Voltage
- UL approved Bridge Rectifier Diodes, registered in file number E142422
- High-density mounting for improved space efficiency through the use of SIP (Single In-Line Package)

### Application

TV, Monitor, Switching power supply, PC, Audio, Printer



## SHINDENGEN

## RATINGS

### ● Absolute Maximum Ratings (Tc=25°C/Unless otherwise specified)

Item	Symbol	Conditions	US4KB80R	US6KB80R	US8KB80R	Unit	
Storage Temperature	Tstg		-55~150			°C	
Operation Junction Temperature	Tj		150			°C	
Maximun Reverse Voltage	V <sub>RM</sub>		800			V	
Average Rectified Forward Current	I <sub>O</sub>	60Hz sine wave, Resistance load	With heatsink	4 (Tc=125°C)	6 (Tc=116°C)	8 (Tc=108°C)	A
			Without heatsink	2.1 (Ta=30°C)	2.1 (Ta=30°C)	2.2 (Ta=26°C)	
Peak Surge Forward Current	I <sub>FSM</sub>	60Hz sine wave, Non-repetitive 1 cycle peak value, Tj=25°C	150	175	200	A	
	I <sub>FSM</sub> <sup>1</sup>	Non-repetitive, Tj=25°C	245 (tp=3ms)	470 (tp=1ms)	575 (tp=1ms)		
Current Squared Time	I <sub>t</sub> <sup>2</sup>	Tj=25°C, Per diode	93 (3ms≤t<8.3ms)	112 (1ms≤t<8.3ms)	166 (1ms≤t<8.3ms)	A <sup>2</sup> s	
Dielectric Strength	V <sub>dis</sub>	Terminals to cace, AC 1 minute	2.0			kV	
Mounting Torque	TOR	(Recommended torque:0.5N·m)	0.8			N·m	

### ● Electrical Characteristics (Tc=25°C/Unless otherwise specified)

Forward Voltage	V <sub>F</sub>	Pulse measurement, Per diode	MAX. 1.00 (I <sub>F</sub> =2A)	MAX. 1.00 (I <sub>F</sub> =3A)	MAX. 1.00 (I <sub>F</sub> =4A)	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =800V, Pulse measurement, Per diode	MAX. 10			μA
Thermal Resistance	θ <sub>JC</sub>	Junction to case, With heatsink	MAX. 3.5	MAX. 3.0	MAX. 2.8	°C/W
	θ <sub>JL</sub>	Junction to lead, Without heatsink	MAX. 5			
	θ <sub>JA</sub>	Junction to ambient, Without heatsink	MAX. 35			
Type No.			US4K80R	US6K80R	US8K80R	

### ● Absolute Maximum Ratings (Tc=25°C/Unless otherwise specified)

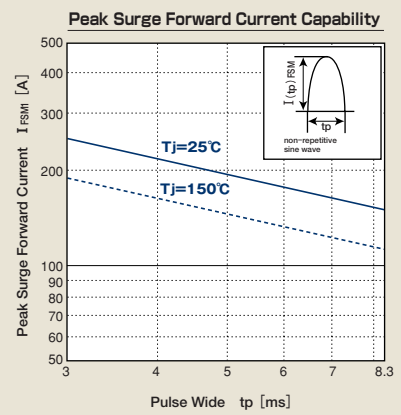
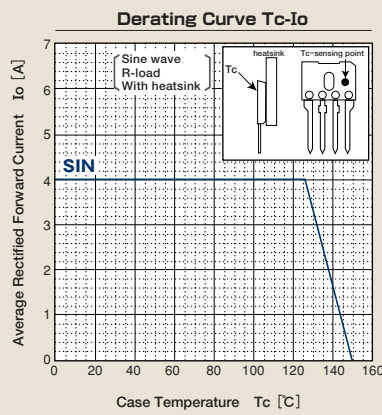
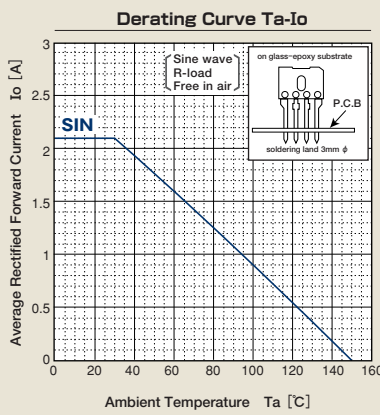
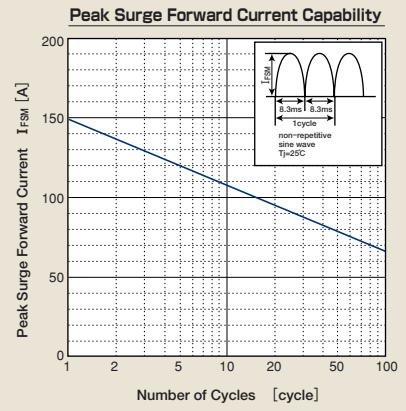
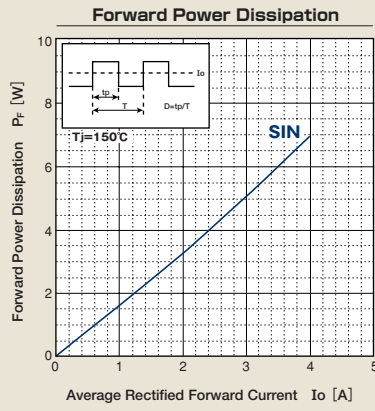
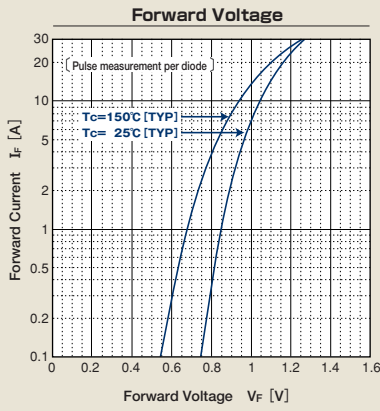
Item	Symbol	Conditions	US10KB80R	US15KB80R	US30KB80R	Unit	
Storage Temperature	Tstg		-55~150			°C	
Operation Junction Temperature	Tj		150			°C	
Maximun Reverse Voltage	V <sub>RM</sub>		800			V	
Average Rectified Forward Current	I <sub>O</sub>	60Hz sine wave, Resistance load	With heatsink	10 (Tc=100°C)	15 (Tc=101°C)	30 (Tc=97°C)	A
			Without heatsink	2 (Ta=28°C)	2 (Ta=30°C)	2.1 (Ta=27°C)	
Peak Surge Forward Current	I <sub>FSM</sub>	60Hz sine wave, Non-repetitive 1 cycle peak value, Tj=25°C	150	200	350	A	
	I <sub>FSM</sub> <sup>1</sup>	Non-repetitive, Tj=25°C	245 (tp=3ms)	330 (tp=3ms)	1000 (tp=1ms)		
Current Squared Time	I <sub>t</sub> <sup>2</sup>	Tj=25°C, Per diode	93 (3ms≤t<8.3ms)	166 (3ms≤t<8.3ms)	510 (1ms≤t<8.3ms)	A <sup>2</sup> s	
Dielectric Strength	V <sub>dis</sub>	Terminals to cace, AC 1 minute	2.0			kV	
Mounting Torque	TOR	(Recommended torque:0.5N·m)	0.8			N·m	

### ● Electrical Characteristics (Tc=25°C/Unless otherwise specified)

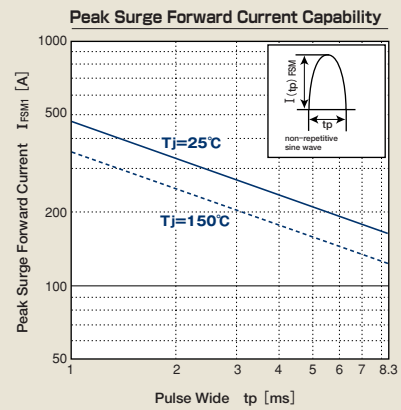
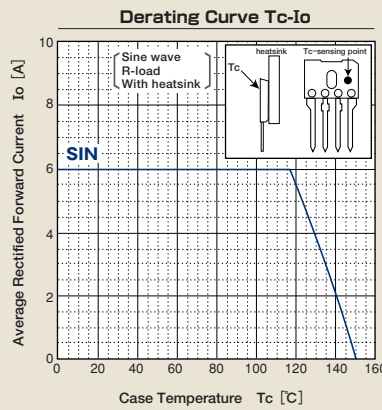
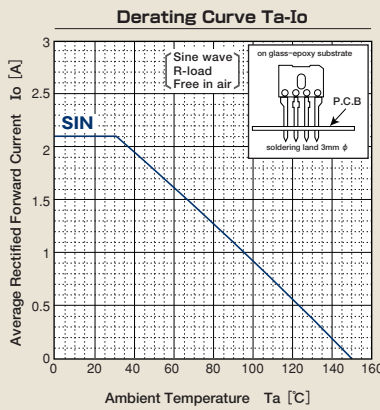
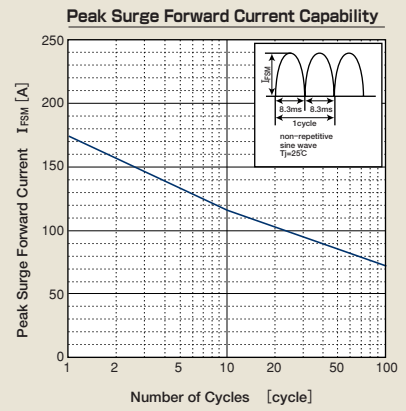
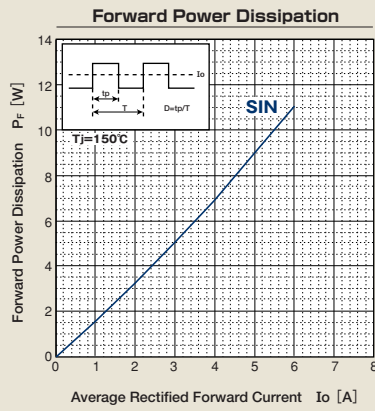
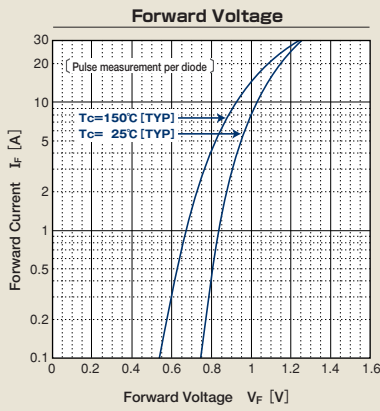
Forward Voltage	V <sub>F</sub>	Pulse measurement, Per diode	MAX. 1.10 (I <sub>F</sub> =5A)	MAX. 1.10 (I <sub>F</sub> =7.5A)	MAX. 1.10 (I <sub>F</sub> =15A)	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =800V, Pulse measurement, Per diode	MAX. 10			μA
Thermal Resistance	θ <sub>JC</sub>	Junction to case, With heatsink	MAX. 2.5	MAX. 1.5	MAX. 0.8	°C/W
	θ <sub>JL</sub>	Junction to lead, Without heatsink	MAX. 5			
	θ <sub>JA</sub>	Junction to ambient, Without heatsink	MAX. 35			
Type No.			U10K80R	U15K80R	U30K80R	

# CHARACTERISTIC DIAGRAMS

## US4KB80R



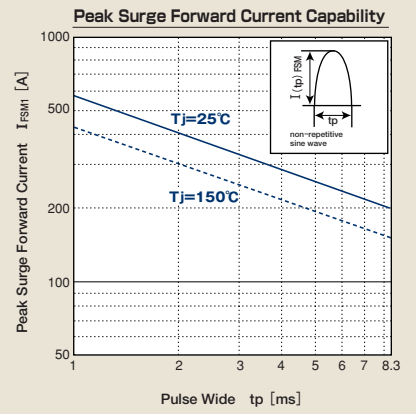
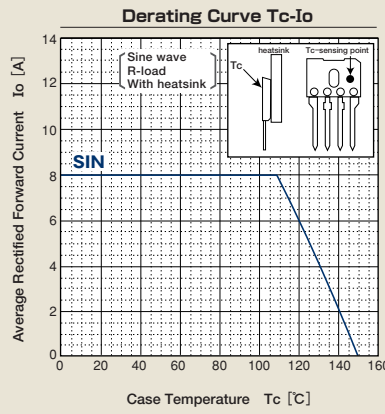
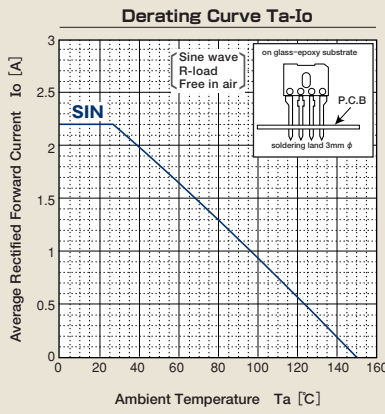
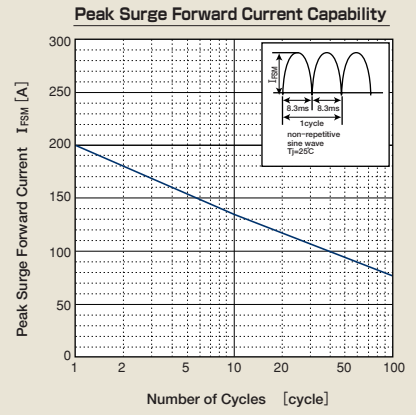
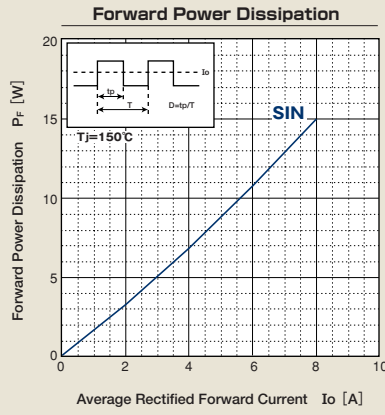
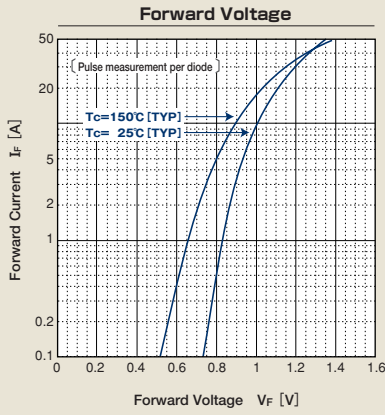
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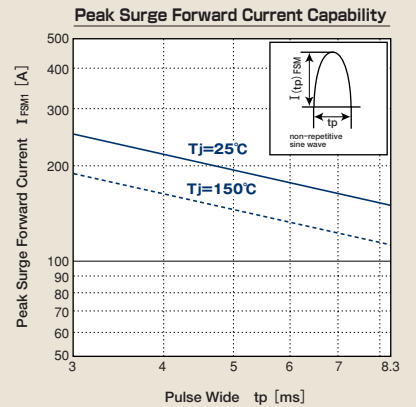
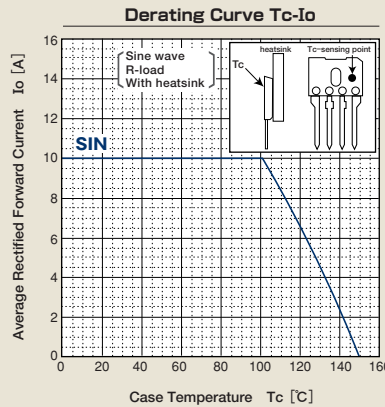
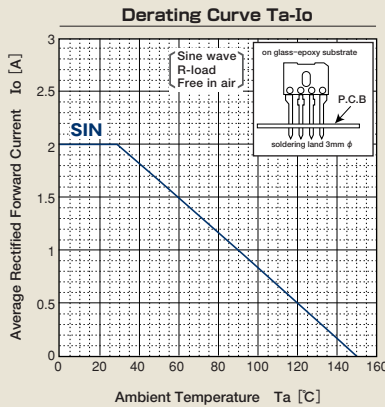
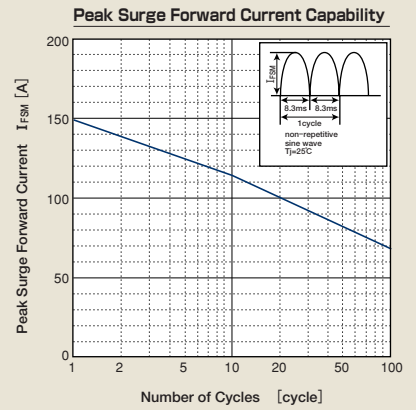
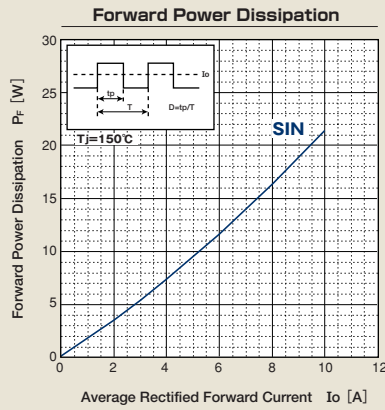
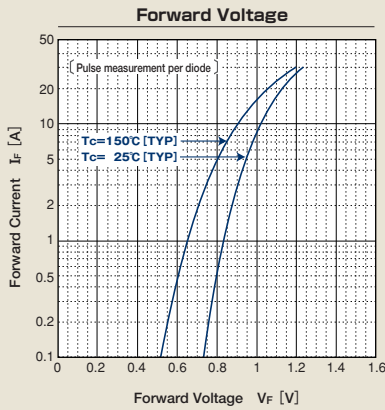


# CHARACTERISTIC DIAGRAMS

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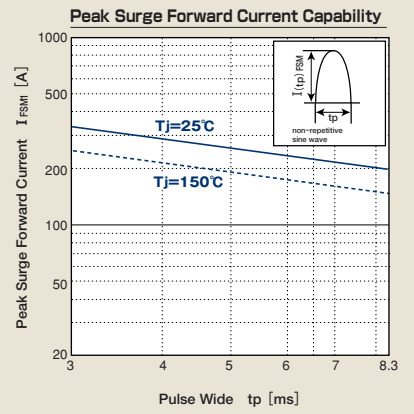
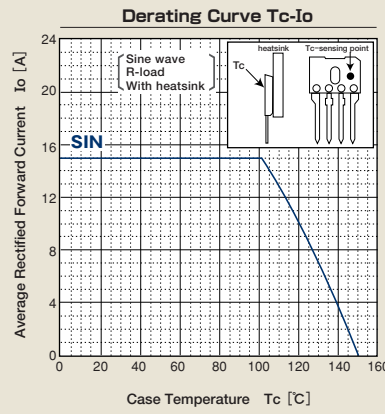
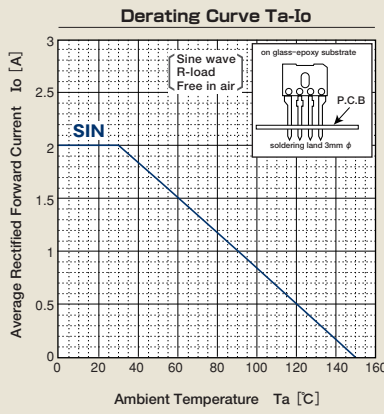
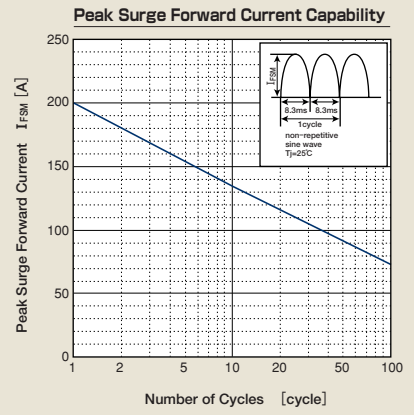
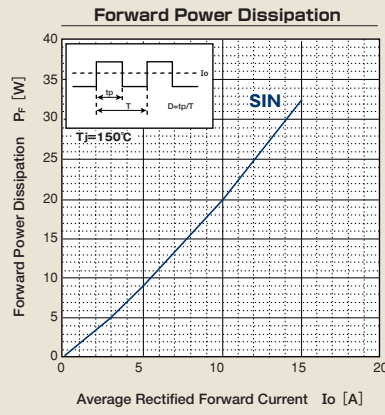
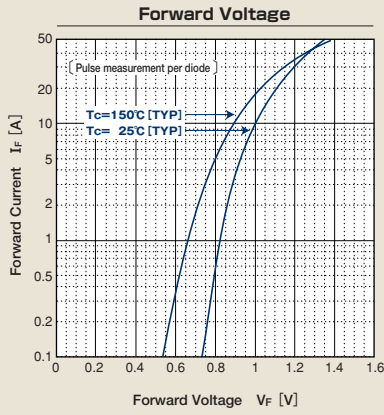


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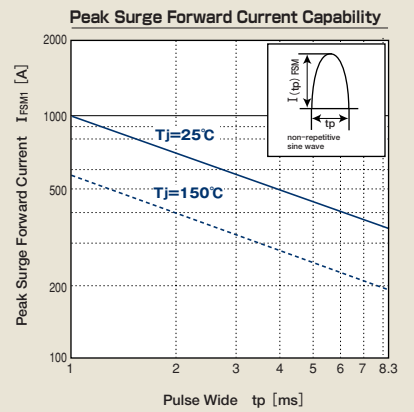
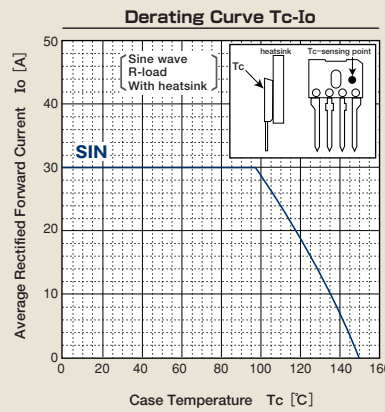
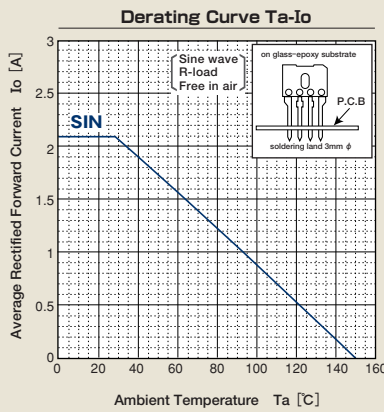
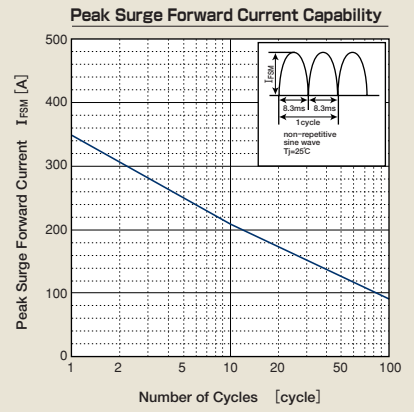
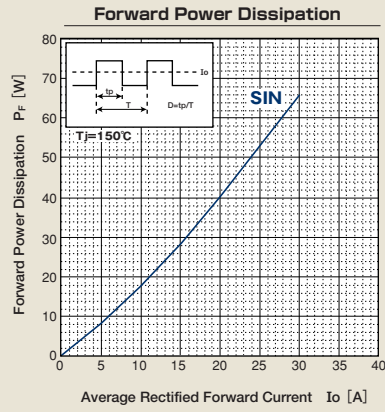
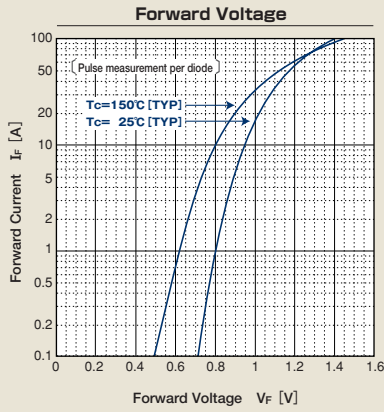


# CHARACTERISTIC DIAGRAMS

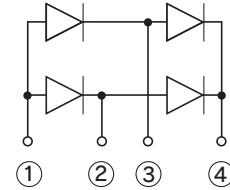
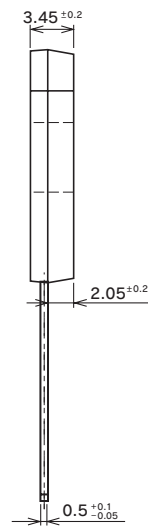
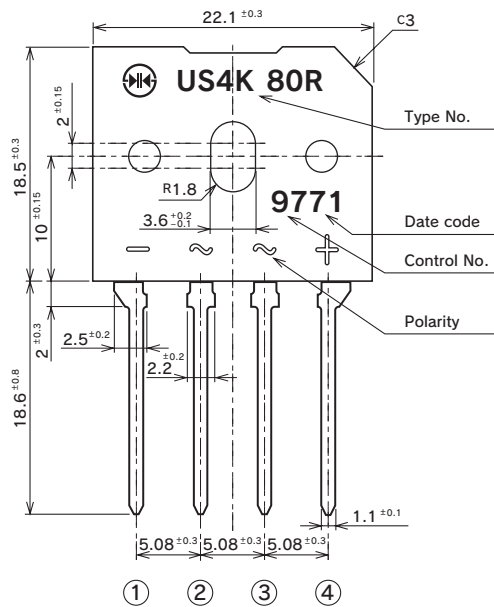
## US15KB80R



## US30KB80R



## OUTLINE DIMENSIONS

**Package : D6K**


Unit : mm

■The level of quality of our products is intended for use in standard applications. (OA and other office equipment, communication equipment, measuring instruments, home appliances, industrial equipment, etc.) In the case these products are to be used in equipment or devices in which failure or malfunction of a product may directly affect human life or health (Nuclear power control equipment, aerospace equipment, devices and systems for preserving life, transportation equipment, traffic control equipment, safety control devices, fire prevention/anti-theft equipment, combustion control equipment, etc.), always make sure to contact us in advance.

■All specifications are subject to change without notice.

■Please contact us for the latest specifications before you order.

■Please use our products after confirming the details in the specifications and the application manuals.

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