ShinDengen

D5FY6ST

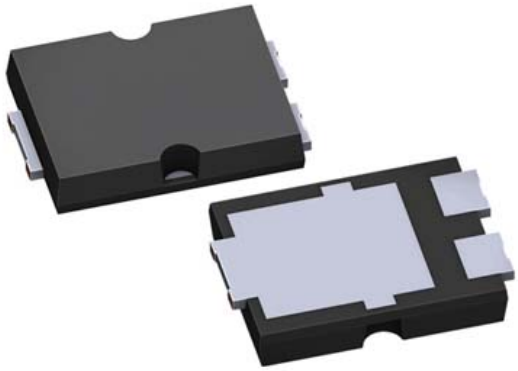
Schottky Barrier Diodes
60V, 5A

Feature

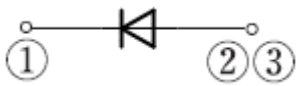
- Permit high current with a small package
- Tj=175℃
- Ultra low I_R
- Based on AEC-Q101
- Halogen free
- Pb free terminal
- RoHS:Yes

OUTLINE

Package (House Name): FY
Package (JEDEC Code): TO-277A similar



Equivalent circuit



Absolute Maximum Ratings (unless otherwise specified : Tl=25℃)

Item	Symbol	Conditions	Ratings	Unit
Storage temperrature	Tstg		-55 to 175	℃
Junction temperature	Tj		-55 to 175	℃
Repetitive peak reverse voltage	V_{RRM}		60	V
Average forward current	I_F(AV)	50Hz sine wave, Resistance load, With heatsink ,Tl=164℃ ※	5	A
Average forward current	I_F(AV)	50Hz sine wave, Resistance load, On alumina substrate, Ta=25℃ ※	3.7	A
Average forward current	I_F(AV)	50Hz sine wave, Resistance load, On glass-epoxy substrate, Ta=25℃ ※	3.5	A
Surge forward current	I_{FSM}	50Hz sine wave, Non-repetitive, 1cycle, Peak value, Tj=25℃	210	A

※ :See the original Specifications

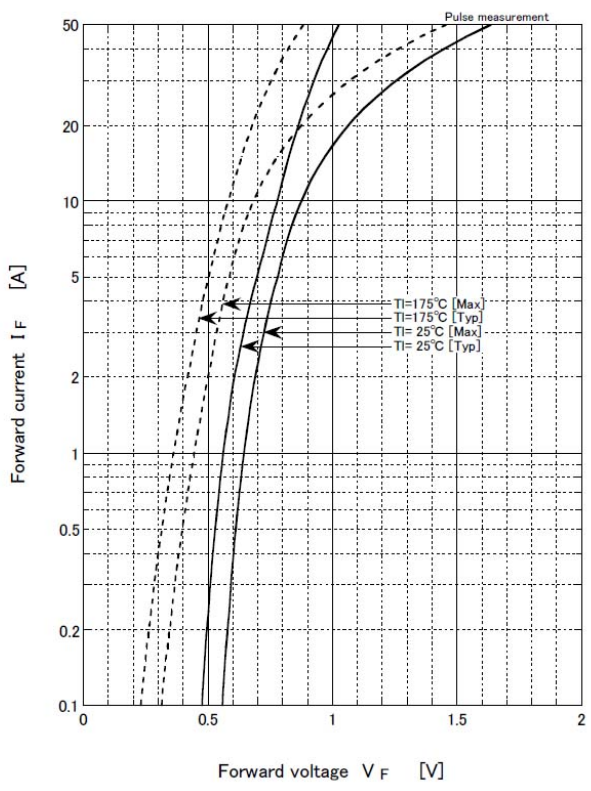
Electrical Characteristics (unless otherwise specified : Tl=25℃)

Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Forward voltage	V_F	IF=5A, Pulse measurement			0.78	V
Reverse current	I_R	VR=60V, Pulse measurement			0.015	mA
Total capacitance	Ct	f=1MHz, VR=10V		148		pF
Thermal resistance	Rth(j-l)	Junction to lead, With heatsink ※			3	℃/W
Thermal resistance	Rth(j-a)	Junction to ambient, On alumina substrate ※			60	℃/W
Thermal resistance	Rth(j-a)	Junction to ambient, On glass-epoxy substrate ※			65	℃/W

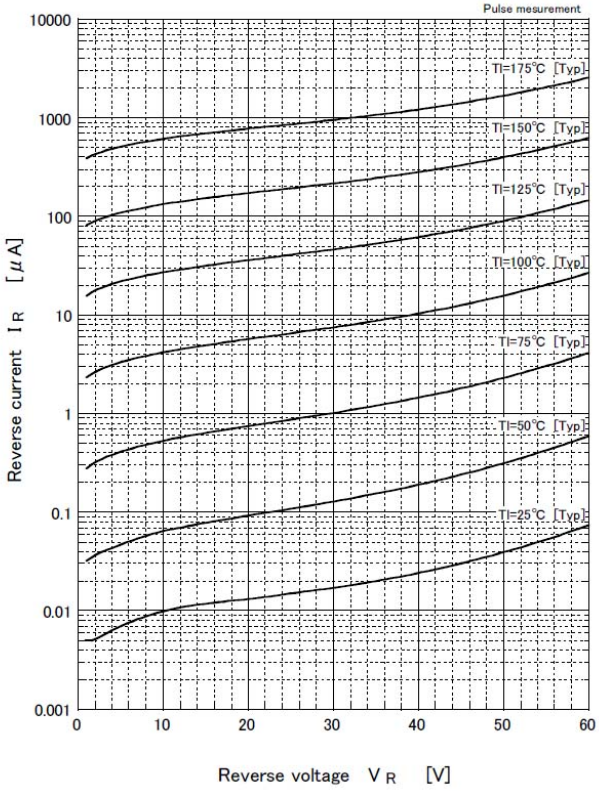
※ ：See the original Specifications

CHARACTERISTIC DIAGRAMS

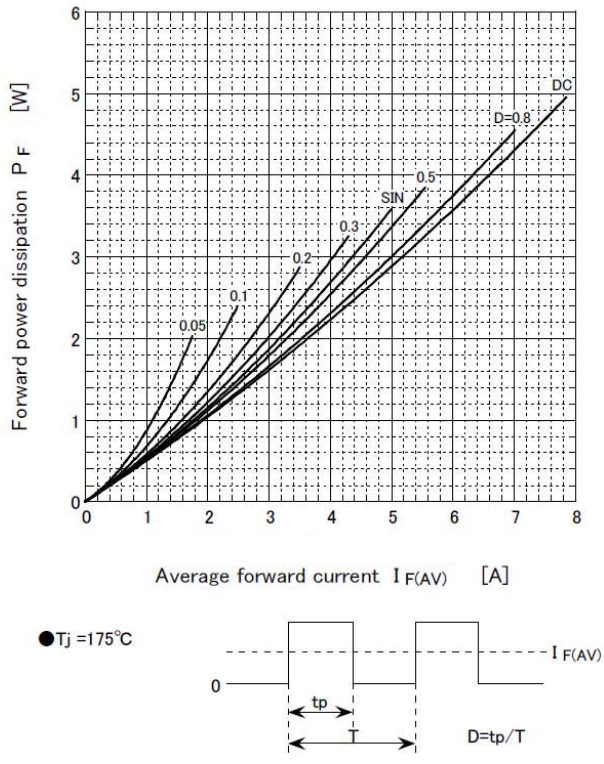
Forward voltage



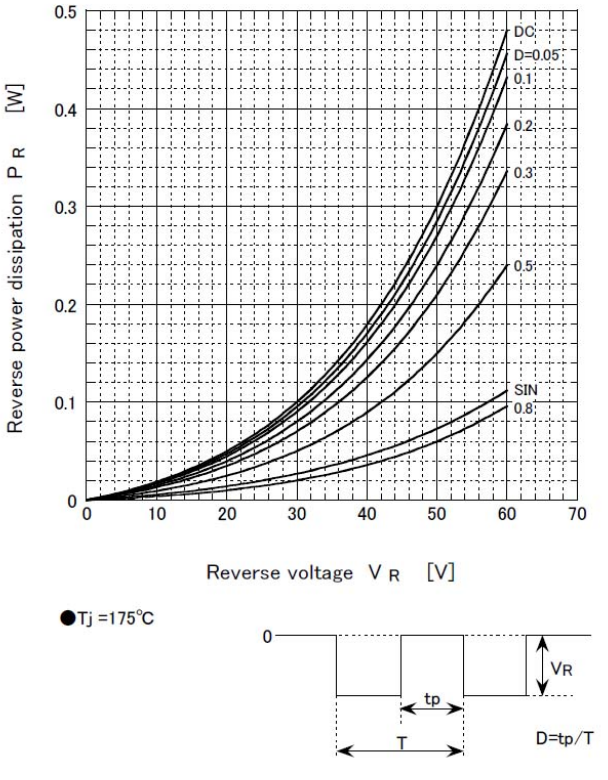
Reverse current



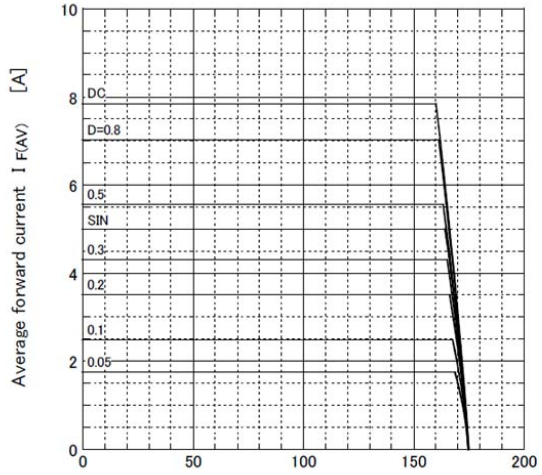
Forward power dissipation



Reverse power dissipation



Derating curve

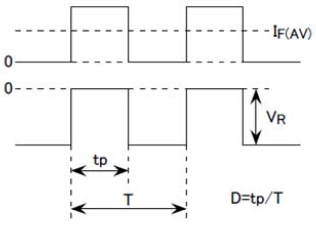


●V_R = 30V

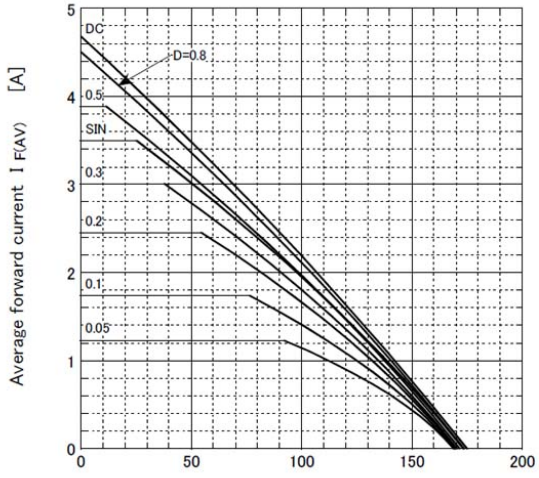
R-load
With heatsink

●Substrate detail

Item	
Substrate	Alumina
Substrate thickness	1mm
Conductor thickness	20μm
Pattern area	400mm²



Derating curve

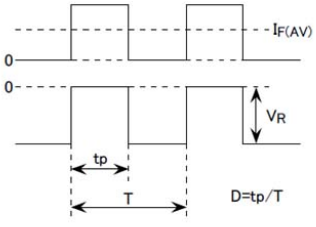


●V_R = 30V

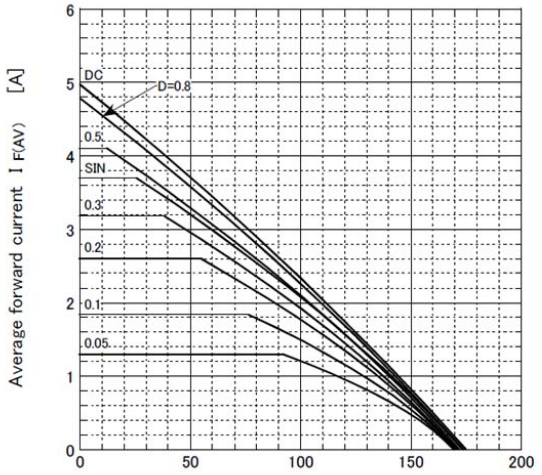
R-load
Free in air

●Substrate detail

Item	
Substrate	Alumina
Substrate thickness	1mm
Conductor thickness	20μm
Pattern area	400mm²



Derating curve

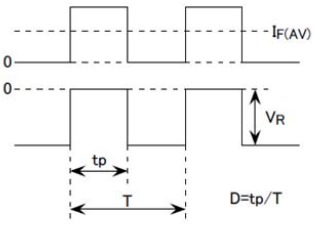


●V_R = 30V

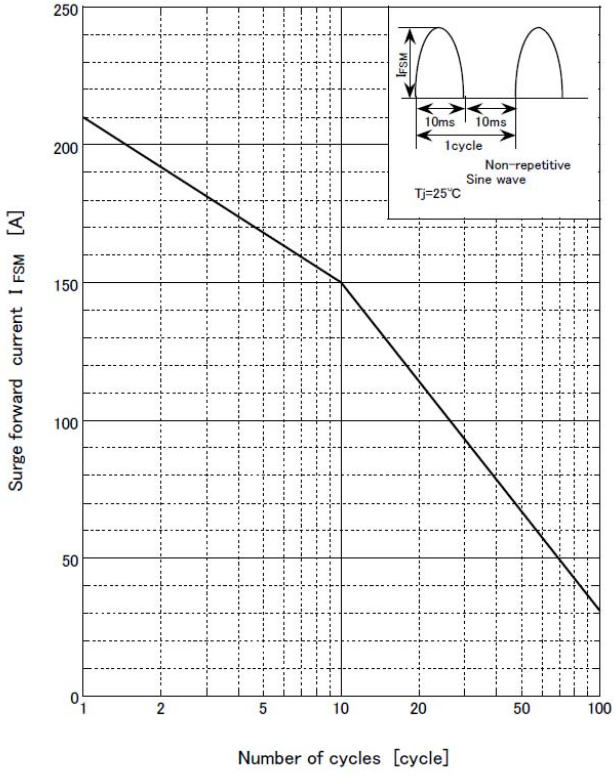
R-load
Free in air

●Substrate detail

Item	
Substrate	Glass-epoxy
Substrate thickness	1mm
Conductor thickness	35μm
Pattern area	400mm²



Surge forward current capability



Total capacitance

Transient thermal impedance

● Substrate detail

Item	
Substrate	Alumina
Substrate thickness	1mm
Conductor thickness	20μm
Pattern area	400mm²

Transient thermal impedance

● Substrate detail

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Substrate	Alumina
Substrate thickness	1mm
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Transient thermal impedance

● Substrate detail

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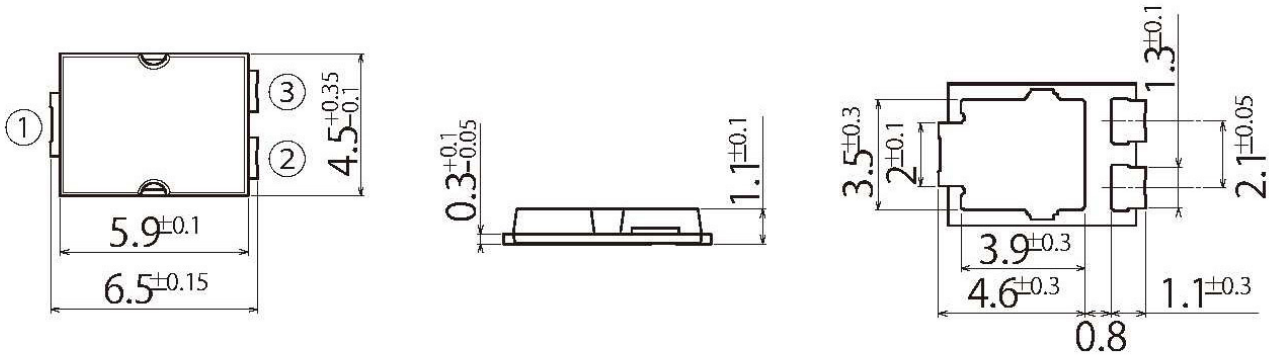
Outline Dimensions

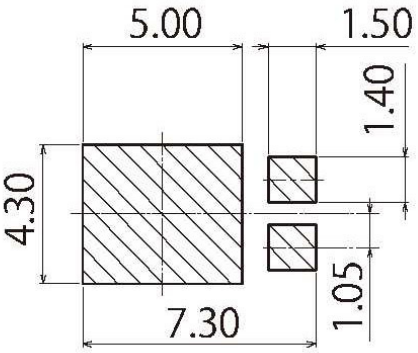
unit:mm

scale: 4/1

G4

JEDEC Code	TO-277A similar
JEITA Code	–
House Name	FY





Referential Soldering Pad

・Optimize soldering pad to the board design and soldering condition.

Notes

1. If you wish to use any such product, please be sure to refer to the specifications issued by Shindengen.
2. All products described or contained herein are designed with a quality level intended for use in standard applications requiring an ordinary level of reliability. If these products are to be used in equipment or devices for special or specific applications requiring an extremely high grade of quality or reliability in which failures or malfunctions of products may directly affect human life or health, a local Shindengen office must be contacted in advance to confirm that the intended use of the product is appropriate. Shindengen products are grouped into the following three applications according the quality grade.

   【Standard applications】
   Computers, office automation and other office equipment, communication terminals, test and measurement equipment, audio/visual equipment, amusement equipment, consumer electronics, machine tools, personal electronic equipment, industrial equipment, etc.
   【Special applications】
   Transportation equipment (vehicles, ships, etc.), trunk-line communication equipment, traffic signal control systems, anti-disaster/crime systems, safety equipment, medical equipment, etc.
   【Specific applications】
   Nuclear reactor control systems, aircraft, aerospace equipment, submarine repeaters, life support equipment and systems, etc.
3. Although Shindengen continuously endeavors to enhance the quality and reliability of its products, customers are advised to consider and take safety measures in their design, such as redundancy, fire containment and anti-failure, so that personal injury, fires, or societal damages can be prevented.
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