ShinDengen

D3FE60

General Rectifying Diodes
600V, 3.0A

Feature

- Small SMD
- High ESD Capability
- Based on AEC-Q101
- Pb free terminal
- RoHS:Yes

OUTLINE

Package (House Name): 2F



Equivalent circuit



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

Item	Symbol	Conditions	Ratings	Unit
Storage temperrature	T_{stg}		-55 to 150	°C
Junction temperature	T_j		-55 to 150	°C
Repetitive peak reverse voltage	V_{RRM}		600	V
Average forward current	$I_{F(AV)}$	50Hz sine wave, Resistance load, Tl=105°C	3	A
Average forward current	$I_{F(AV)}$	50Hz sine wave, Resistance load, On alumina substrate, Ta=25°C ※	1.8	A
Average forward current	$I_{F(AV)}$	50Hz sine wave, Resistance load, On glass-epoxy substrate, Ta=25°C ※	1.28	A
Surge forward current	I_{FSM}	50Hz sine wave, Non-repetitive 1 cycle peak value, Tj=25°C	150	A
Surge forward current	I_{FSM1}	tp=1ms, sine wave, Non-repetitive, peak value, Tj=25°C	400	A

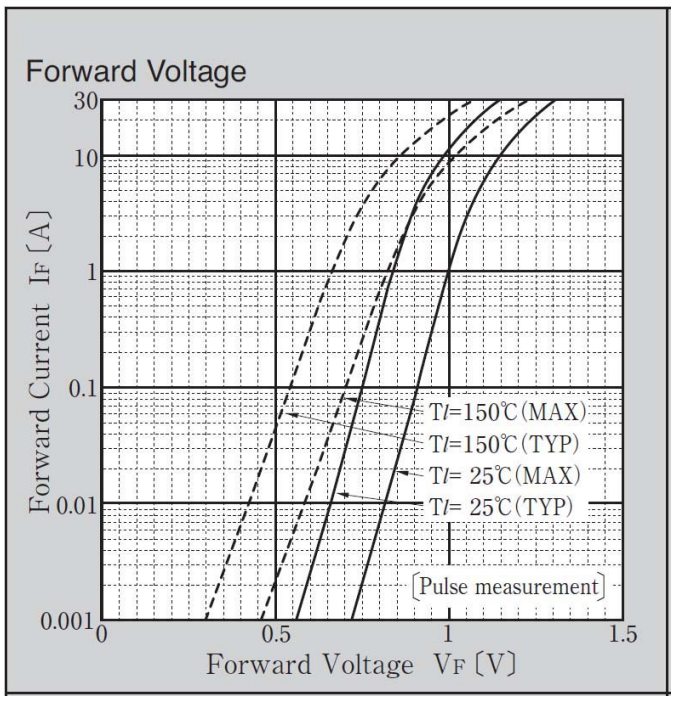
※ ：See the original Specifications

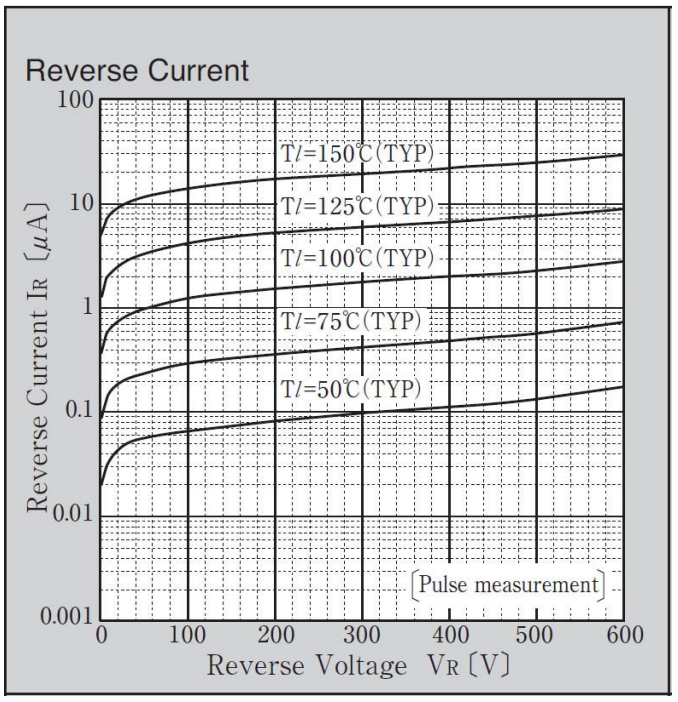
Electrical Characteristics (unless otherwise specified : Tl=25°C)

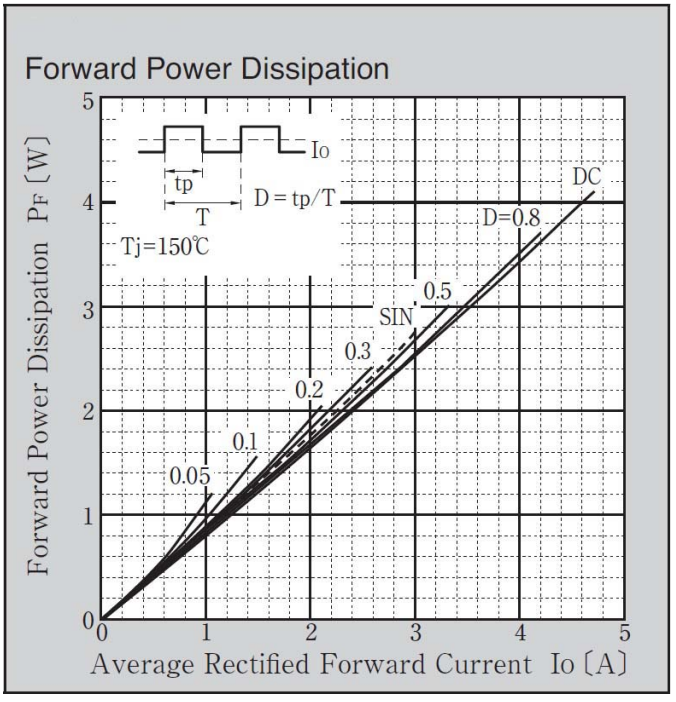
Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Forward voltage	V_F	IF＝3A, Pulse measurement			1.05	V
Reverse current	I_R	VR=600V, Pulse measurement			10	μA
Electro static dischange Capability	V_{ESD}	C=330pF, R=330Ω, Polarity±, Aerial discharge		25		kV
Thermal resistance	$R_{th(j-l)}$	Junction to lead			16	°C/W
Thermal resistance	$R_{th(j-a)}$	Junction to ambient, On alumina substrate ※			80	°C/W
Thermal resistance	$R_{th(j-a)}$	Junction to ambient, On glass-epoxy substrate ※			115	°C/W

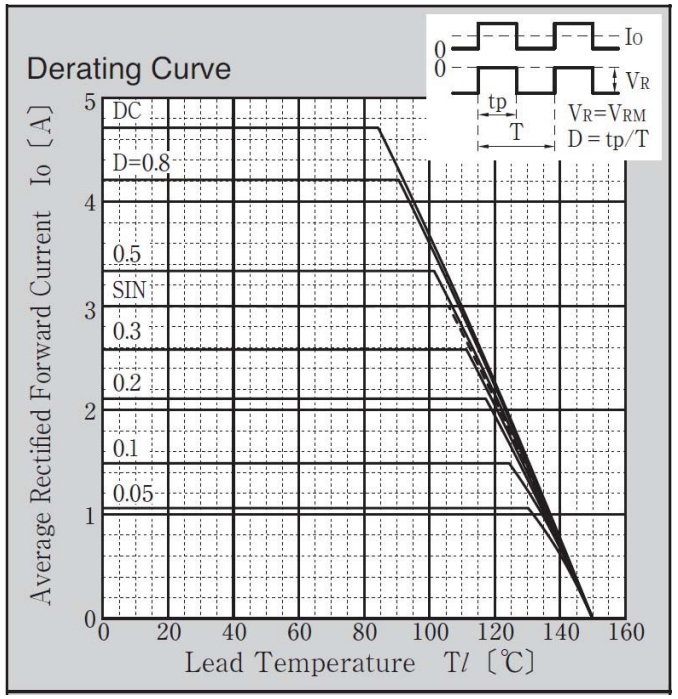
※ ：See the original Specifications

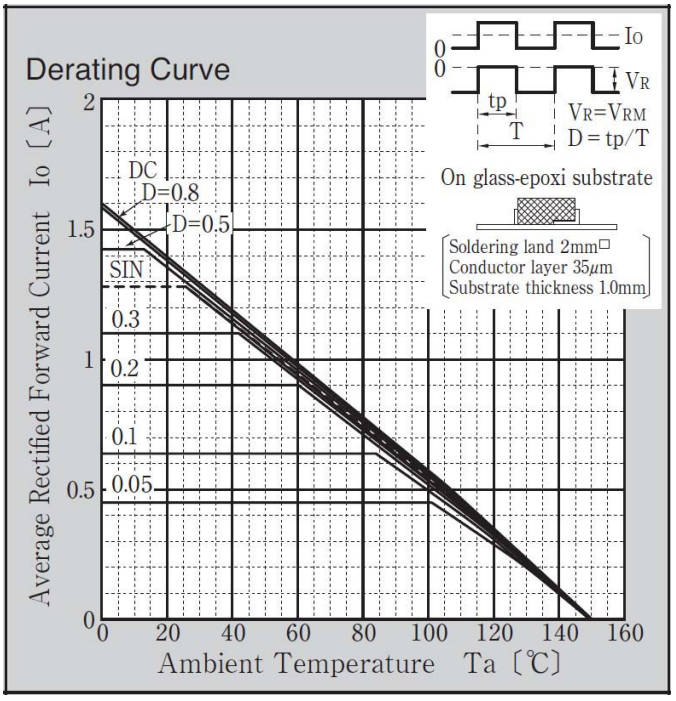
CHARACTERISTIC DIAGRAMS

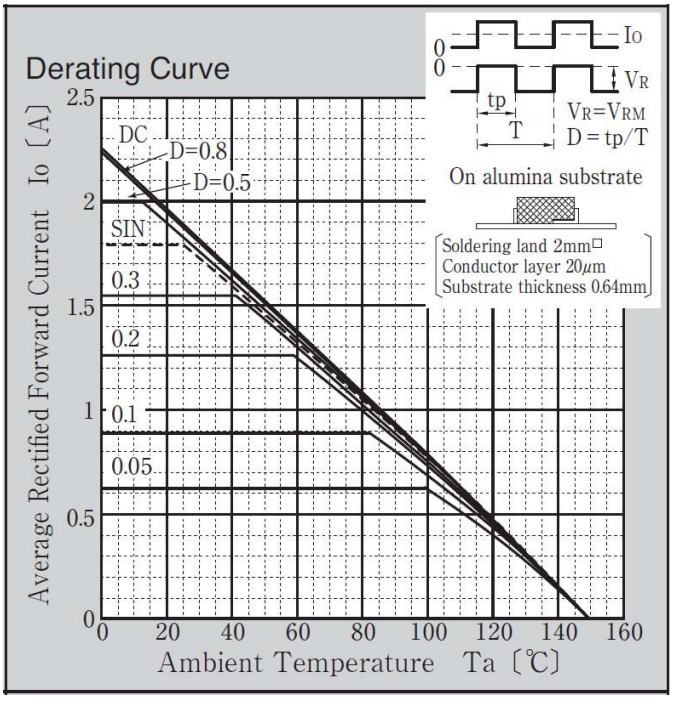


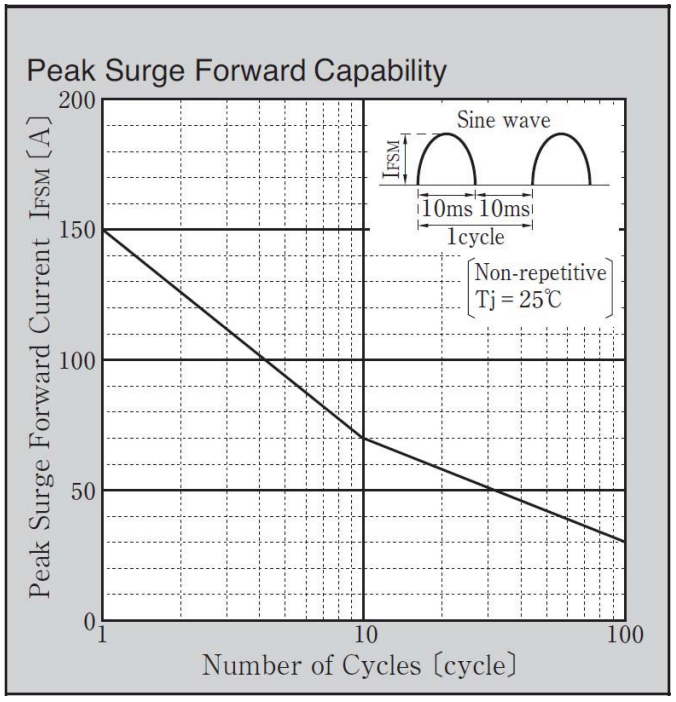


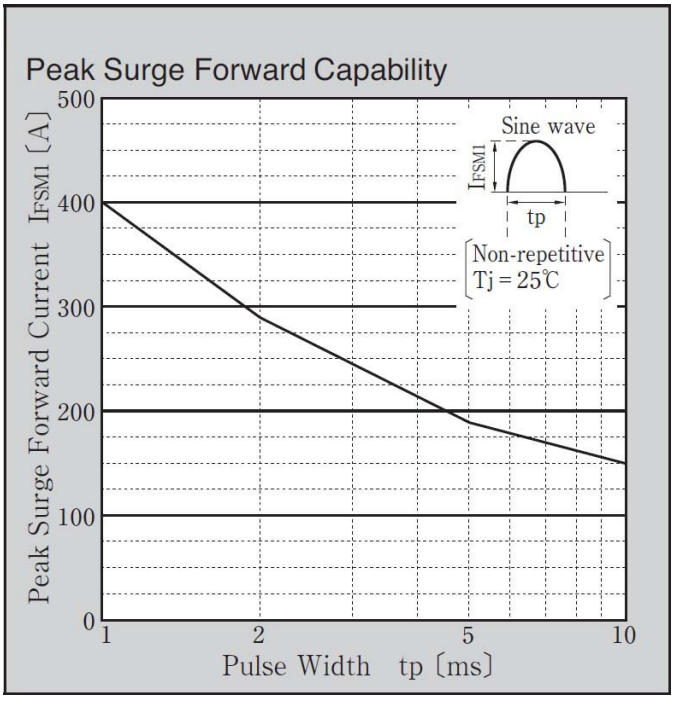


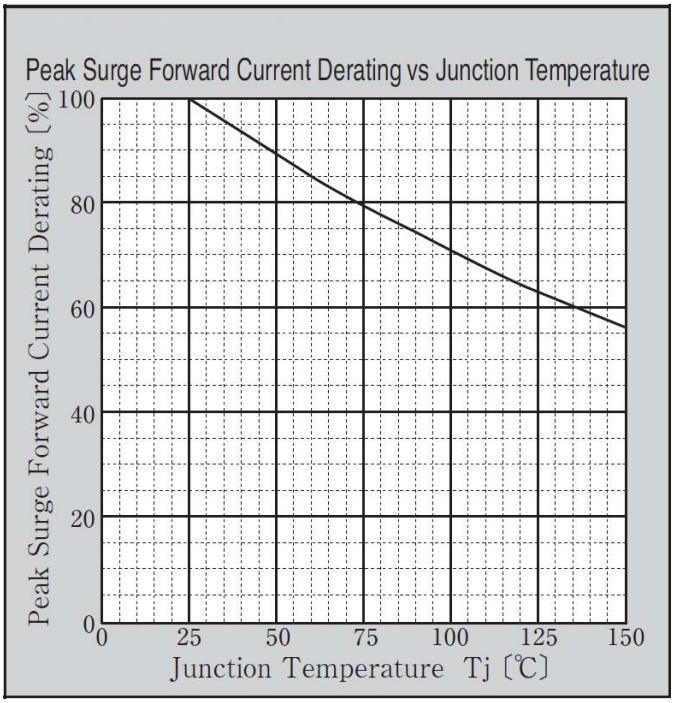


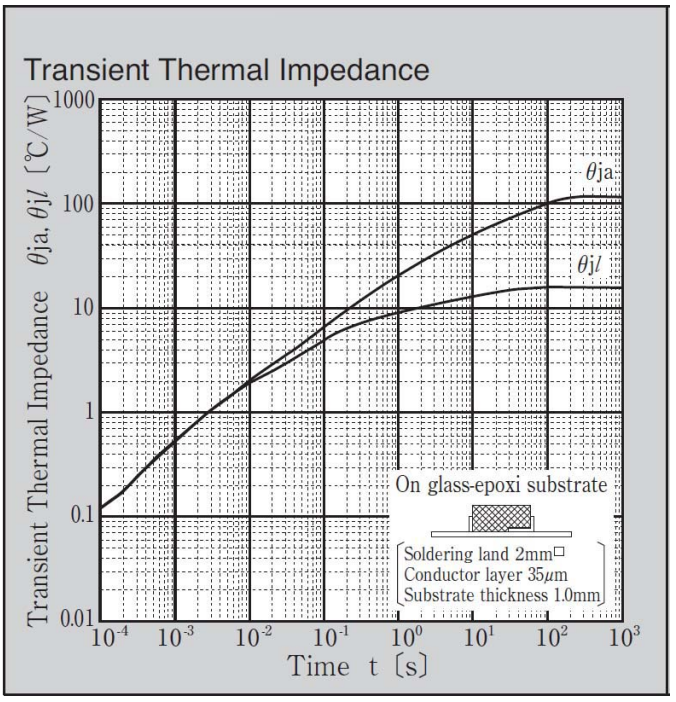

Derating Curve
Average Rectified Forward Current Io〔A〕
Ambient Temperature Ta〔℃〕
DC
D=0.8
D=0.5
SIN
0.3
0.2
0.1
0.05
Io
VR
tp
T
VR=VRM
D=tp/T
On glass-epoxi substrate
Soldering land 2mm□
Conductor layer 35μm
Substrate thickness 1.0mm

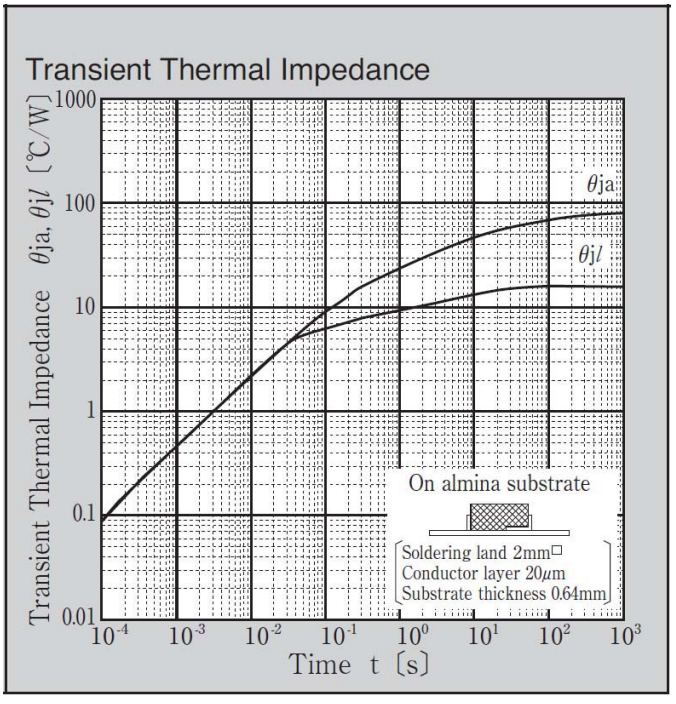

Derating Curve
Average Rectified Forward Current Io〔A〕
Ambient Temperature Ta〔℃〕
DC
D=0.8
D=0.5
SIN
0.3
0.2
0.1
0.05
Io
VR
tp
T
VR=VRM
D=tp/T
On alumina substrate
Soldering land 2mm□
Conductor layer 20μm
Substrate thickness 0.64mm


Peak Surge Forward Capability
Peak Surge Forward Current IFSM〔A〕
Number of Cycles〔cycle〕
Sine wave
IFSM
10ms 10ms
1cycle
Non-repetitive
Tj = 25℃


Peak Surge Forward Capability
Peak Surge Forward Current IFSM1〔A〕
Pulse Width tp〔ms〕
Sine wave
IFSM1
tp
Non-repetitive
Tj = 25℃


Peak Surge Forward Current Derating vs Junction Temperature
Peak Surge Forward Current Derating 〔%〕
100
80
60
40
20
0
0
25
50
75
100
125
150
Junction Temperature Tj 〔℃〕


Transient Thermal Impedance
Transient Thermal Impedance θja, θjl 〔℃/W〕
1000
100
10
1
0.1
0.01
θja
θjl
On glass-epoxi substrate
Soldering land 2mm□
Conductor layer 35μm
Substrate thickness 1.0mm
10-4 10-3 10-2 10-1 100 101 102 103
Time t 〔s〕

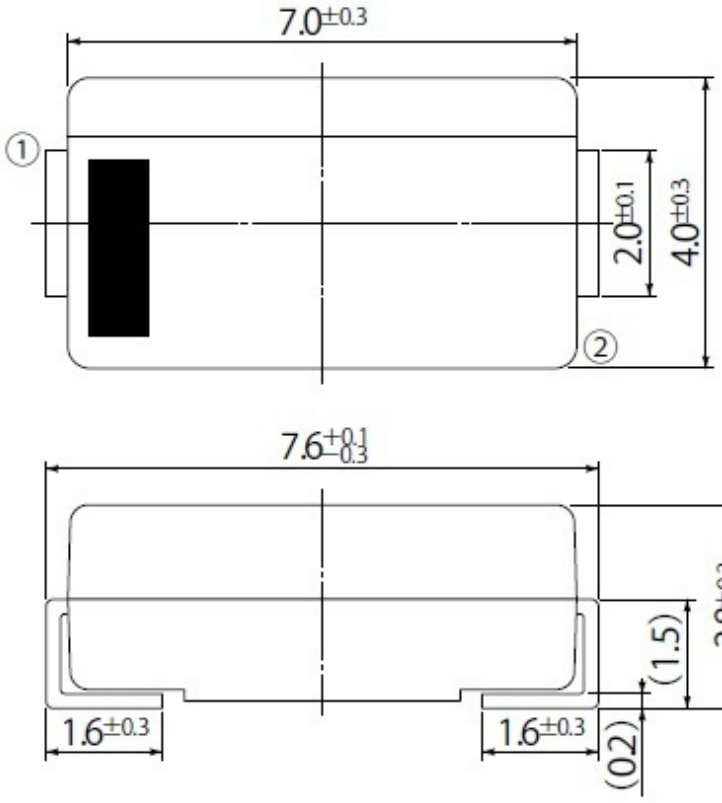

Transient Thermal Impedance
Transient Thermal Impedance θja, θjl 〔℃/W〕
1000
100
10
1
0.1
0.01
θja
θjl
On almina substrate
Soldering land 2mm□
Conductor layer 20μm
Substrate thickness 0.64mm
10-4 10-3 10-2 10-1 100 101 102 103
Time t 〔s〕

Outline Dimensions

unit:mm

B9

JEDEC Code	–
JEITA Code	–
House Name	2F



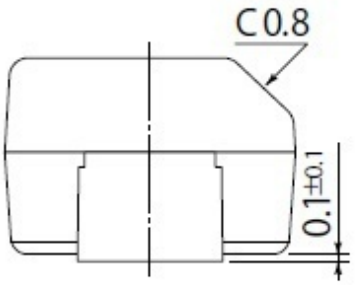
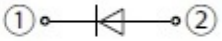
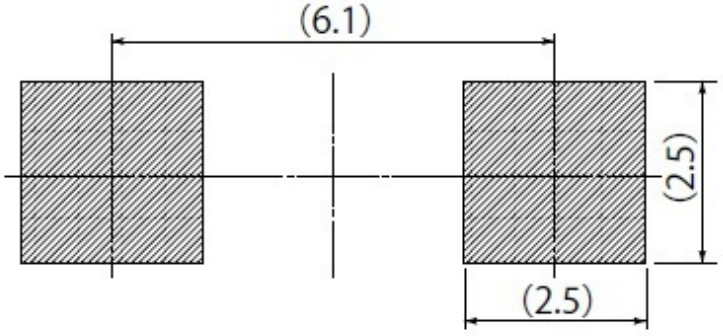


Fig. B9-1





Referential Soldering Pad

・Optimize soldering pad to the board design and soldering condi tion.

The content specified herein is subject to change for improvement without notice.
If you wish to use any such products, please be sure to refer to the specifications.

U182-1(2026.09)

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.
4. Please note that all information described or contained herein is subject to change without notice due to product upgrades and other reasons. When buying Shindengen products, please contact the Company’s offices or distributors to obtain the latest information.
5. Shindengen shall not bear any responsibility with regards to damages or infringement of any third-party patent rights and other intellectual property rights incurred due to the use of information on this website.
6. The information and materials on this website neither warrant the use of Shindengen's or any third party’s patent rights and other intellectual property rights, nor grant license to such rights.
7. In the event that any product described or contained herein falls under the category of strategic products controlled under the Foreign Exchange and Foreign Trade Control Law of Japan, exporting of such products shall require an export license from the Japanese government in accordance with the above law.
8. No reprinting or reproduction of the materials on this website, either in whole or in part, is permitted without proper authorization from Shindengen.