ShinDengen

S1ZAS4

Schottky Barrier Diodes
40V, 1.2A

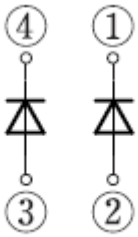
Feature

- SMD
- Low V_F
- Pb free terminal
- RoHS:Yes

OUTLINE

Package (House Name): 1Z
Package (JEDEC Code): TO-269AA

Equivalent circuit



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

Item	Symbol	Conditions	Ratings	Unit
Storage temperrature	Tstg		-40 to 150	℃
Junction temperature	Tj		150	℃
Repetitive peak reverse voltage	V_{RRM}		40	V
Repetitive peak surge reverse voltage	V_{RRSM}	Pulse width 0.5ms, duty=1/40	45	V
Average forward current	I_F(AV)	50Hz sine wave, Resistance load, On alumina substrate, 1 element operation, Ta=49℃	1.2	A
Average forward current	I_F(AV)	50Hz sine wave, Resistance load, On alumina substrate, 2 elements operation, Ta=45℃, per diode	0.9	A
Average forward current	I_F(AV)	50Hz sine wave, Resistance load, On glass-epoxy substrate, 1 element operation, Ta=47℃	1	A
Average forward current	I_F(AV)	50Hz sine wave, Resistance load, On glass-epoxy substrate, 2 elements operation, Ta=43℃	0.72	A
Surge forward current	I_{FSM}	50Hz sine wave, Non-repetitive, 1cycle, Peak value, Tj=125℃	40	A
Repetitive peak surge reverse power	P_{RRSM}	Pulse width 10μs, Tj=25℃, per diode	60	W

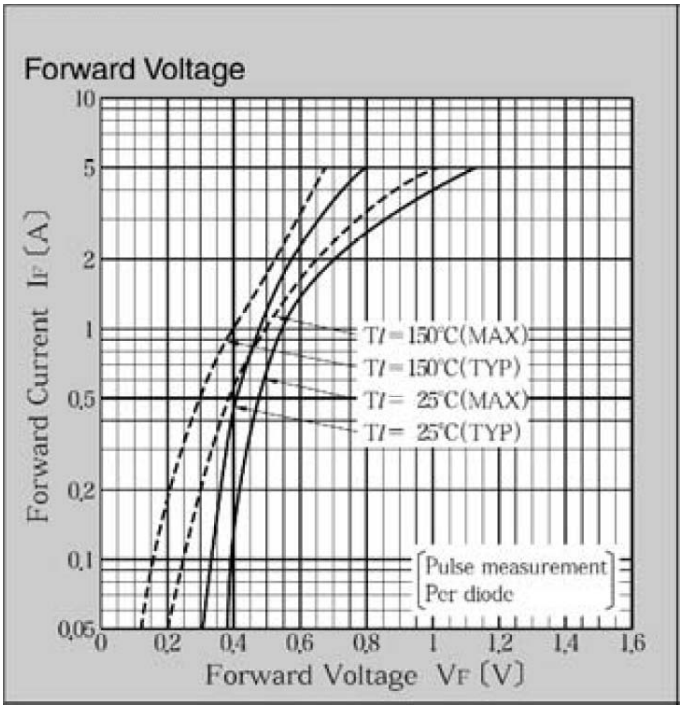
※ :See the original Specifications

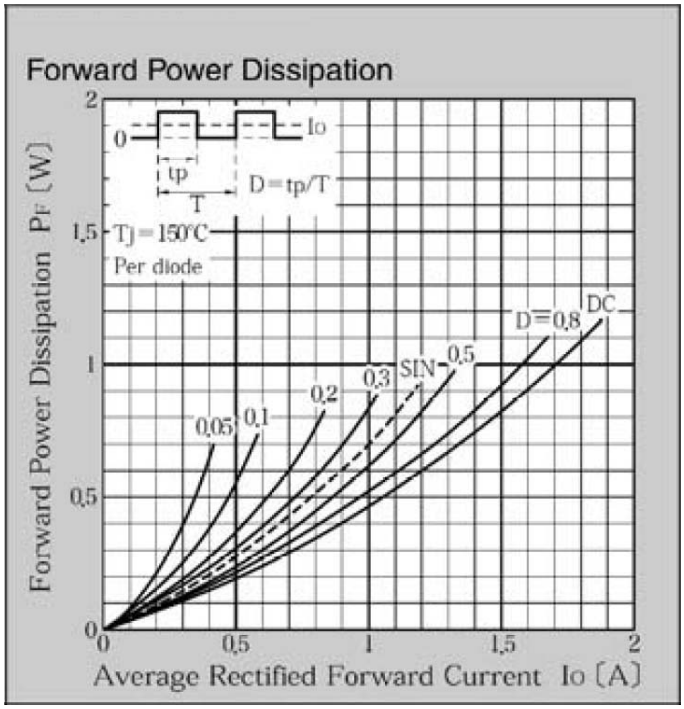
Electrical Characteristics (unless otherwise specified : Tl=25℃)

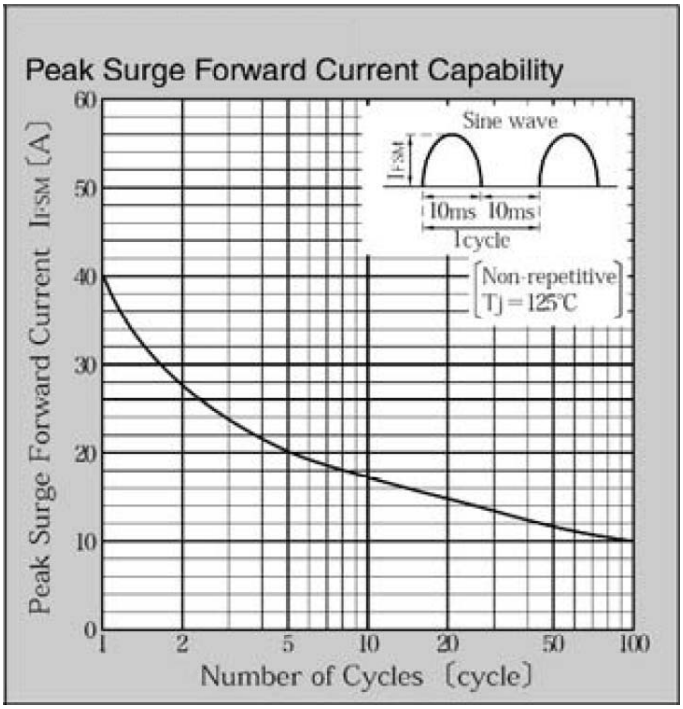
Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Forward voltage	V_F	IF=1A, Pulse measurement, per diode			0.55	V
Reverse current	I_R	VR=40V, Pulse measurement, per diode			1	mA
Total capacitance	Ct	f=1MHz, VR=10V, per diode		65		pF
Thermal resistance	Rth(j-l)	Junction to lead			25	℃/W
Thermal resistance	Rth(j-a)	Junction to ambient, On alumina substrate, 1 element operation			93	℃/W
Thermal resistance	Rth(j-a)	Junction to ambient, On alumina substrate, 2 elements operation, per diode			140	℃/W
Thermal resistance	Rth(j-a)	Junction to ambient, On glass-epoxy substrate, 1 element operation			120	℃/W
Thermal resistance	Rth(j-a)	Junction to ambient, On glass-epoxy substrate, 2 elements operation, per diode			186	℃/W

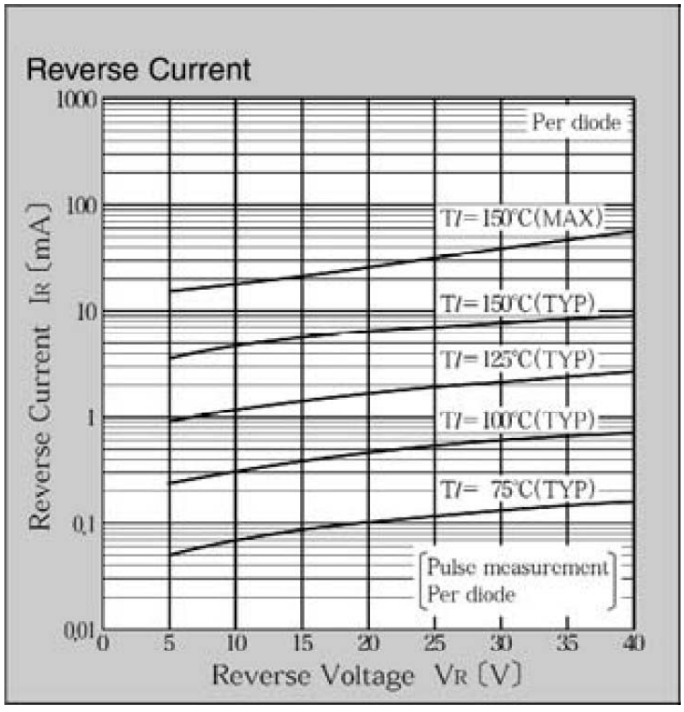
※ :See the original Specifications

CHARACTERISTIC DIAGRAMS

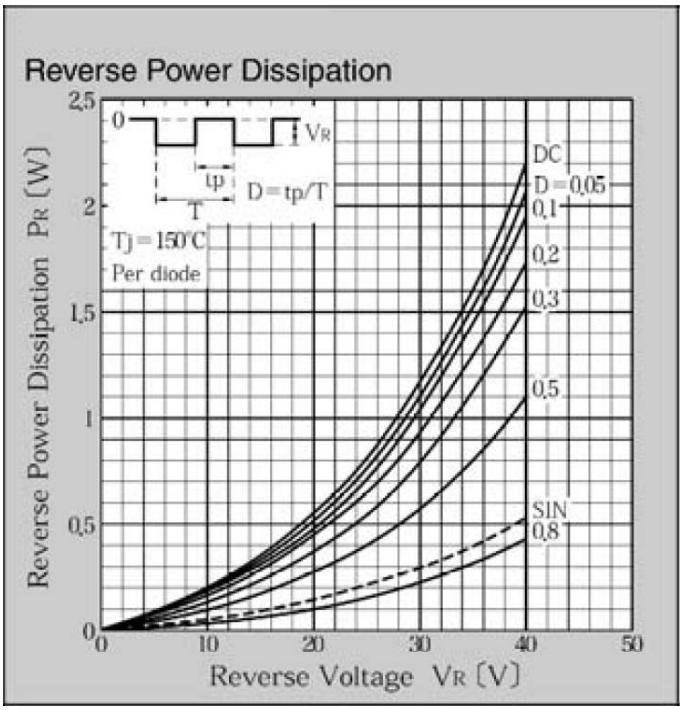




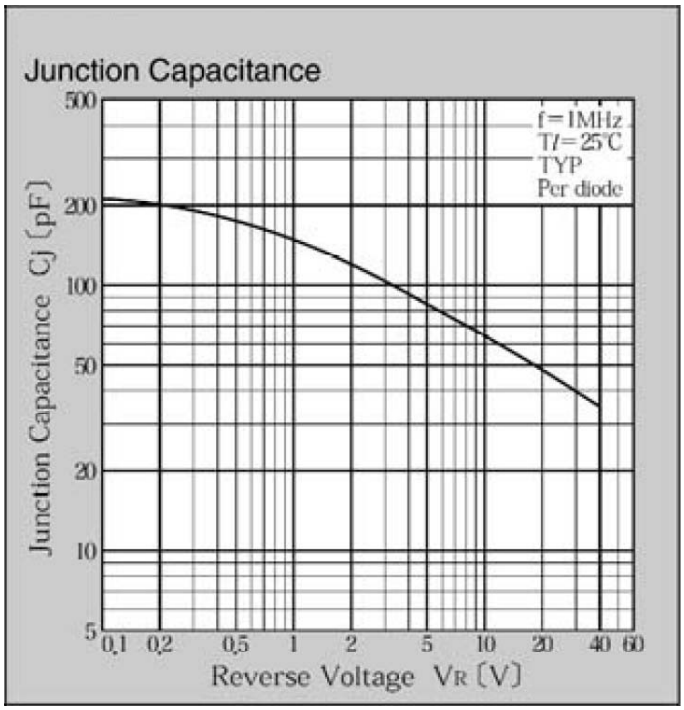




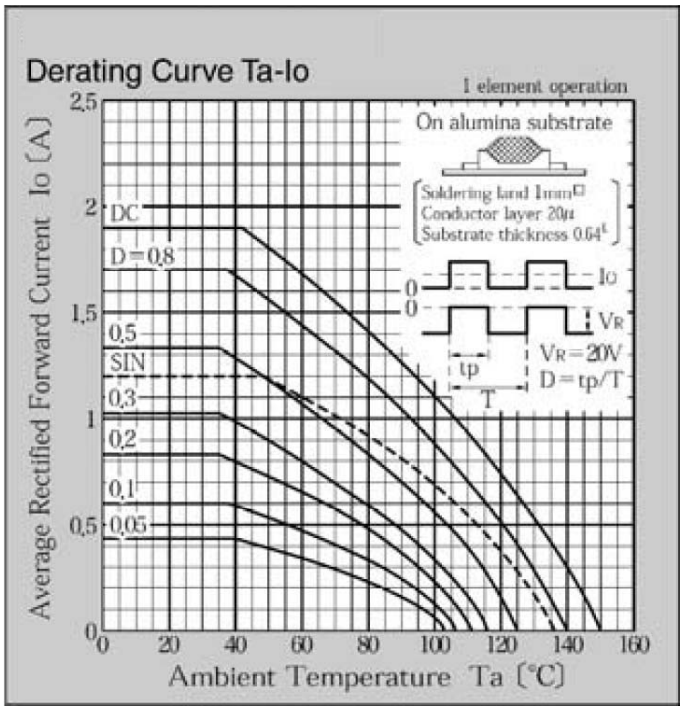
Reverse Power Dissipation



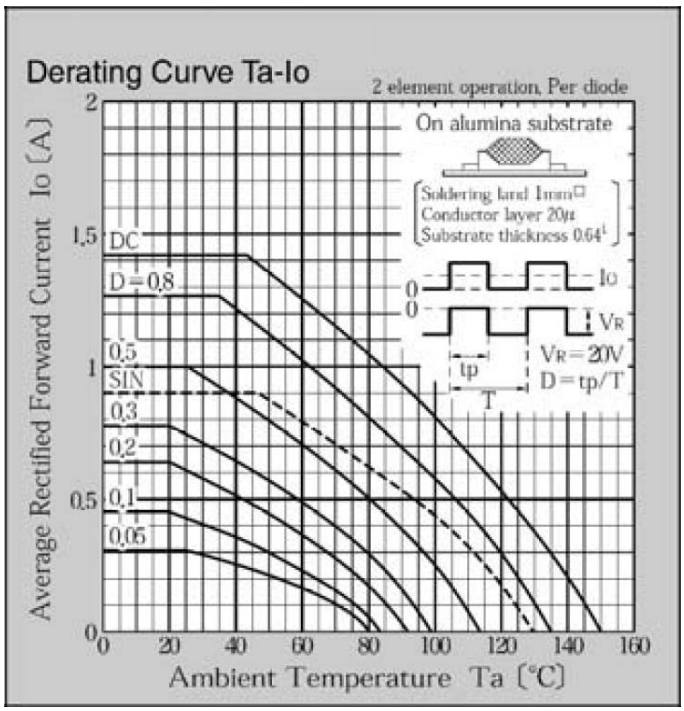
Junction Capacitance

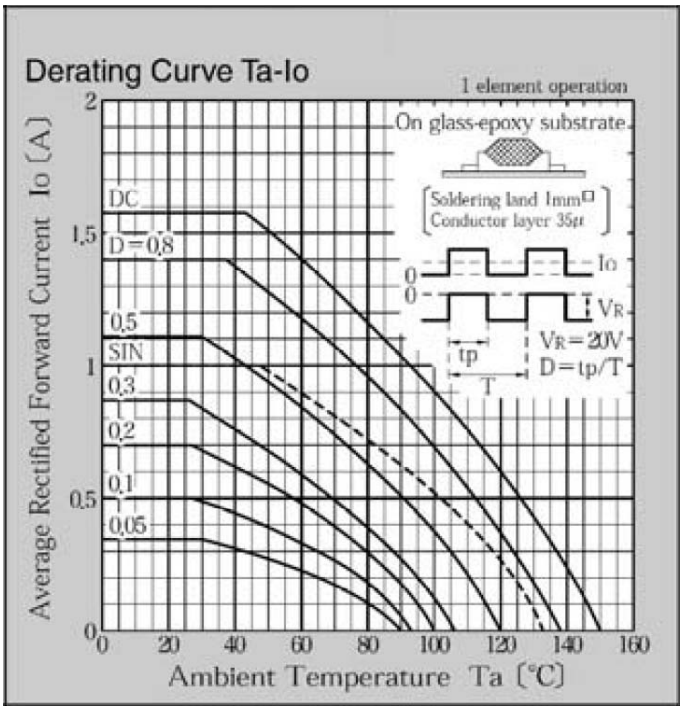


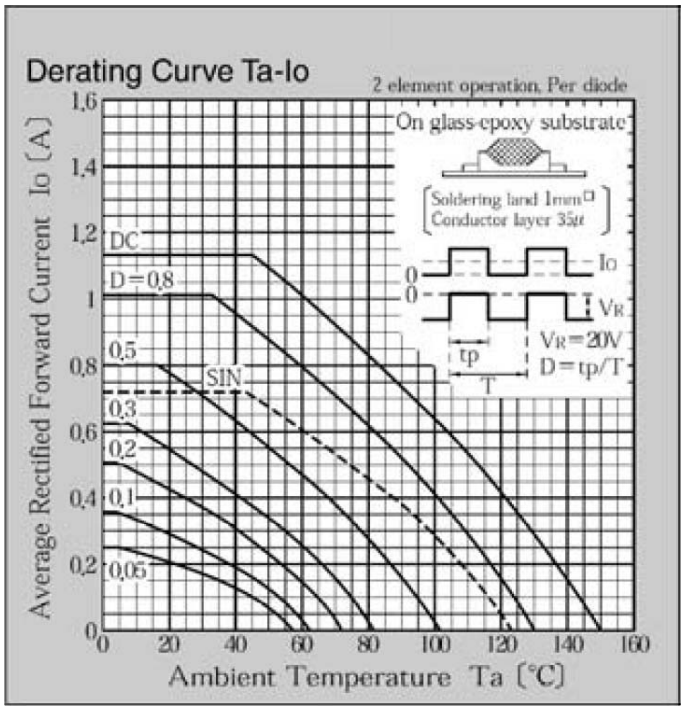
Derating Curve Ta-Io

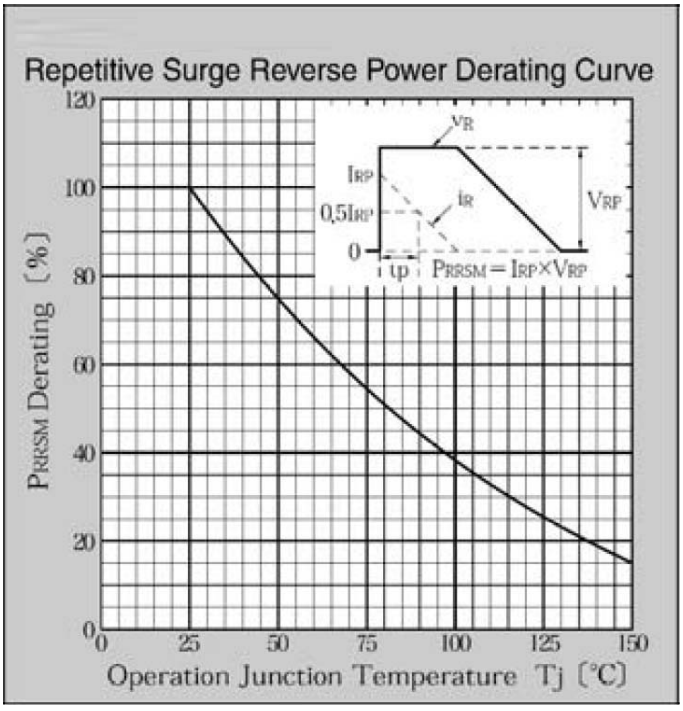


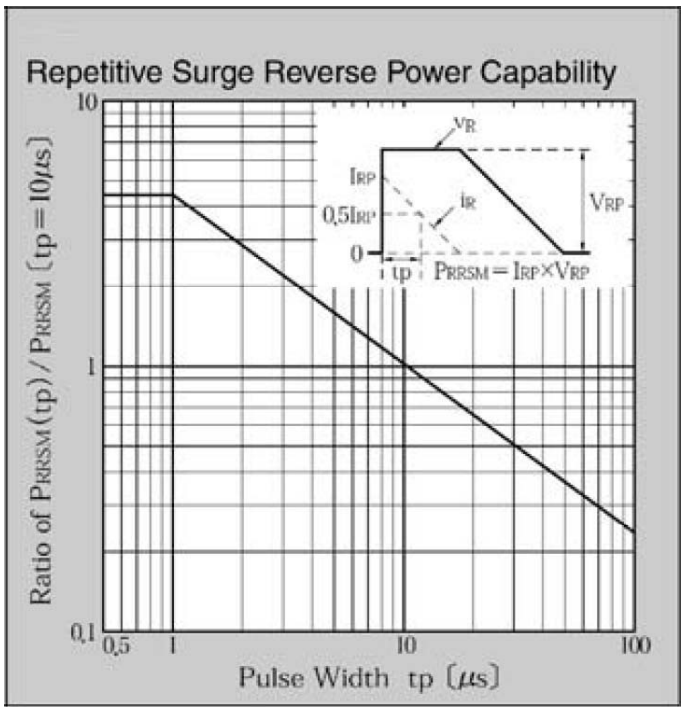
Derating Curve Ta-Io




Derating Curve Ta-Io
1 element operation
On glass-epoxy substrate
Soldering land 1mm□
Conductor layer 35μ
Io
VR
VR=20V
D=tp/T
tp
T
DC
D=0.8
0.5
SIN
0.3
0.2
0.1
0.05
Average Rectified Forward Current Io〔A〕
Ambient Temperature Ta〔℃〕
0
0.5
1
1.5
2
0
20
40
60
80
100
120
140
160


Derating Curve Ta-Io
2 element operation, Per diode
On glass-epoxy substrate
Soldering land 1mm□
Conductor layer 35μ
Io
VR
VR=20V
D=tp/T
tp
T
DC
D=0.8
0.5
SIN
0.3
0.2
0.1
0.05
Average Rectified Forward Current Io〔A〕
Ambient Temperature Ta〔℃〕
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
0
20
40
60
80
100
120
140
160


Repetitive Surge Reverse Power Derating Curve
VR
IRP
0.5IRP
iR
VRP
0
tp
PRRSM=IRP×VRP
PRRSM Derating〔%〕
Operation Junction Temperature Tj〔℃〕
0
20
40
60
80
100
120
0
25
50
75
100
125
150


Repetitive Surge Reverse Power Capability
VR
IRP
0.5IRP
iR
VRP
0
tp
PRRSM=IRP×VRP
Ratio of PRRSM(tp) / PRRSM〔tp=10μs〕
Pulse Width tp〔μs〕
0.1
1
10
0.5
1
10
100

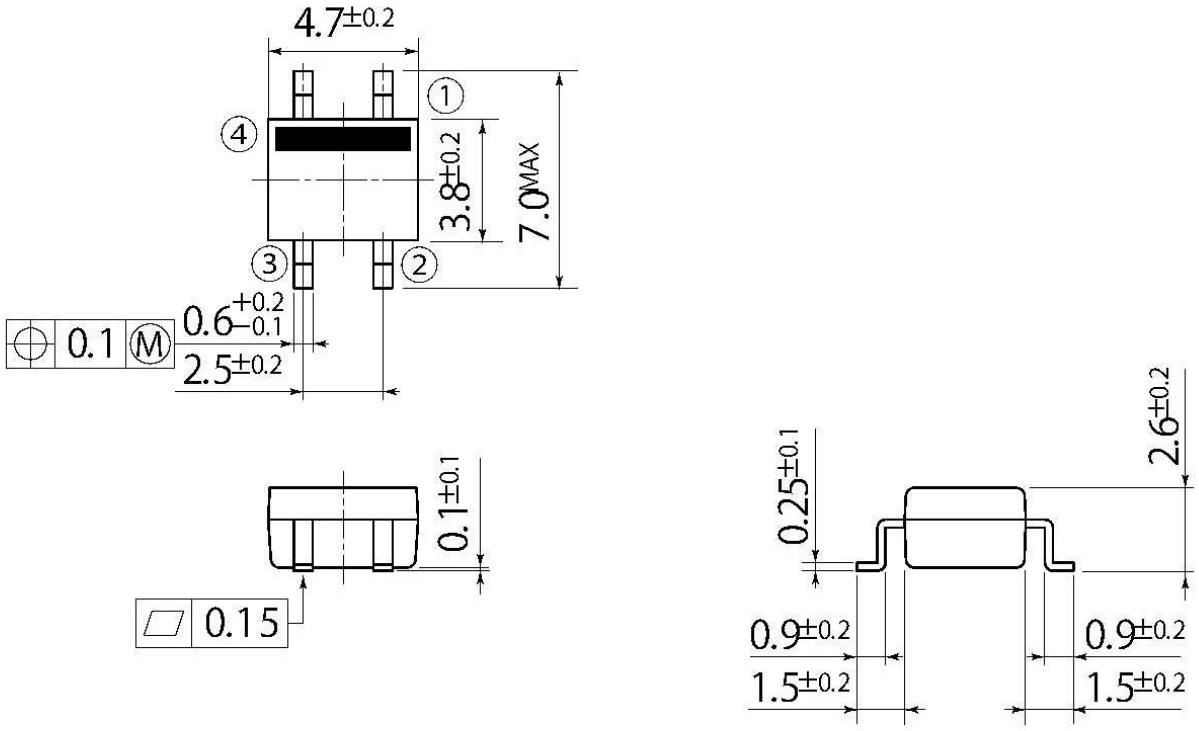
Outline Dimensions

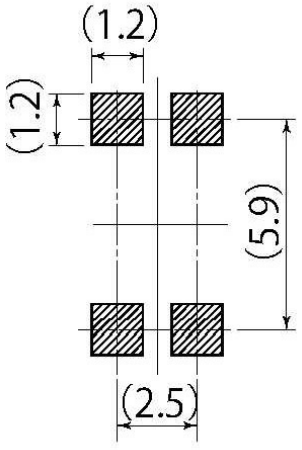
unit:mm

scale: 4/1

C2

JEDEC Code	TO-269AA
JEITA Code	–
House Name	1Z(SMD)





Referential Soldering Pad

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

Notes

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