Fast recovery diode

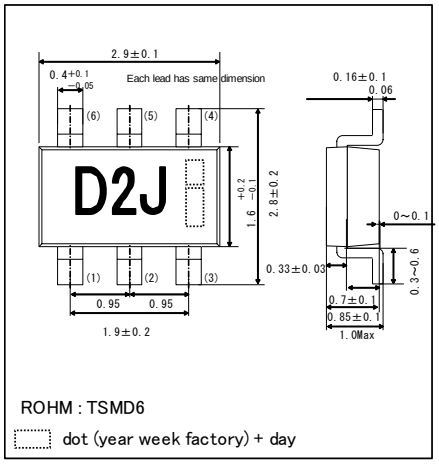
RF051UA1D

●**Applications**
General rectification

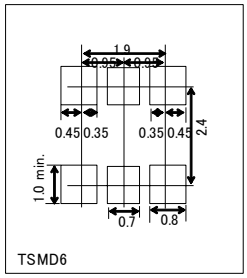
●**Features**
1) Small power mold type. (TSMD6)
2) Very fast recovery.
3) High reliability

●**Construction**
Silicon epitaxial planar

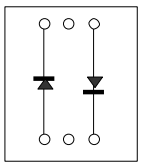
● **External dimensions** (Unit : mm)



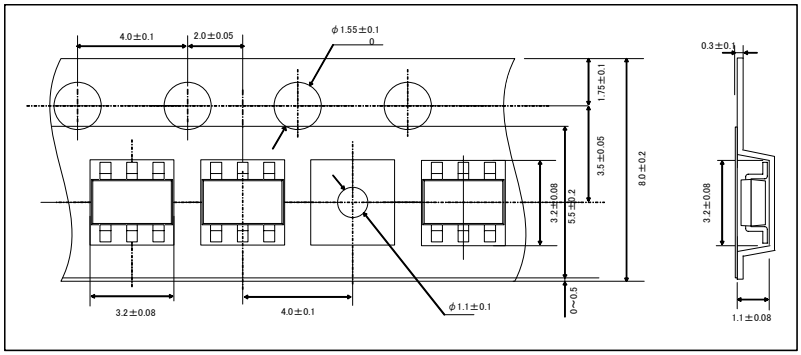
● **Land size figure** (Unit : mm)



●**Structure**



● **Taping specifications**(Unit : mm)



●**Absolute maximum ratings** (Ta=25°C)

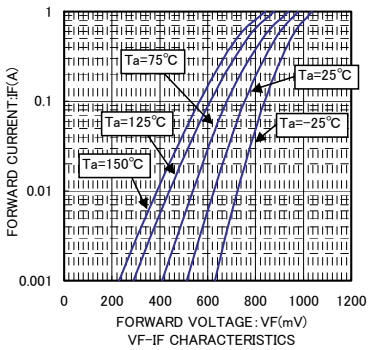
Parameter	Symbol	Limits	Unit
Reverse voltage (repatitive peak)	V_{RM}	100	V
Reverse voltage (DC)	V_R	100	V
Average rectified forward current (*1)	Io	0.5	A
Forward current surge peak（60Hz・1cyc）	I_{FSM}	5	A
Junction temperature	Tj	150	℃
Storage temperature	Tstg	-55 to +150	℃

(*1) Rating for a per diode

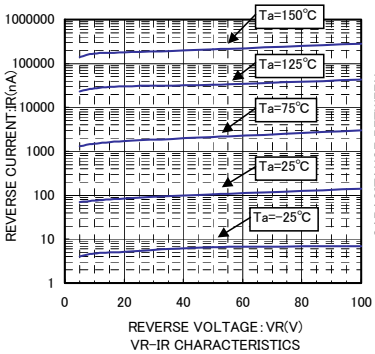
●**Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_F	-	-	0.98	V	I_F=0.5A
Reverse current	I_R	-	-	10	μA	V_R=100V
Reverse recovery time	trr	-	-	25	ns	I_F=0.5A,I_R=1A,Irr=0.25*I_R

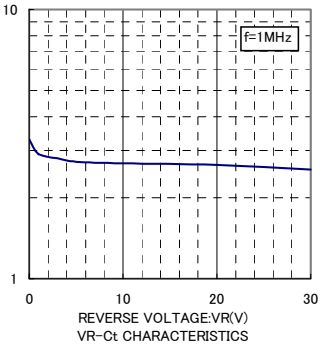
●Electrical characteristic curves (Ta=25°C)



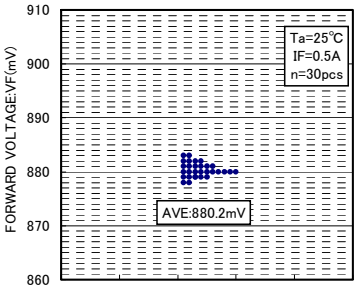
VF-IF CHARACTERISTICS



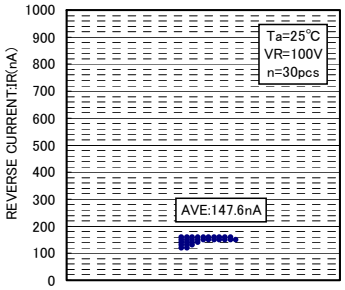
VR-IR CHARACTERISTICS



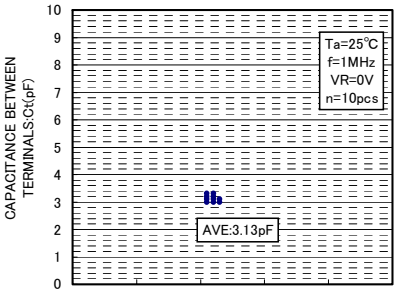
VR-Ct CHARACTERISTICS



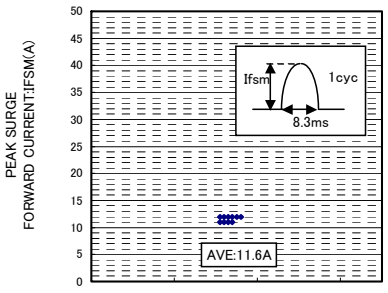
VF DISPERSION MAP



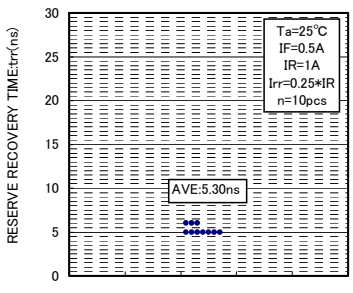
IR DISPERSION MAP



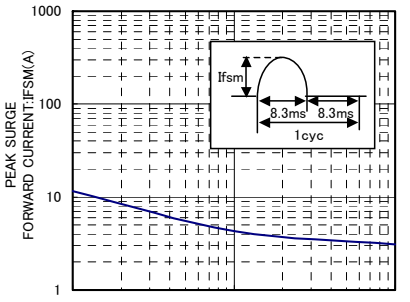
Ct DISPERSION MAP



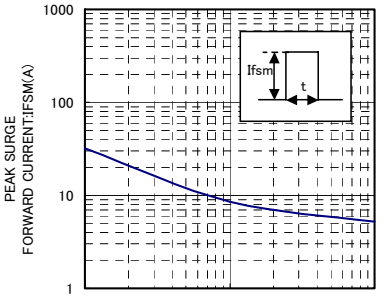
IFSM DISRESION MAP



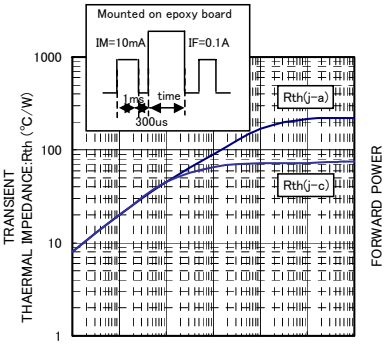
trr DISPERSION MAP



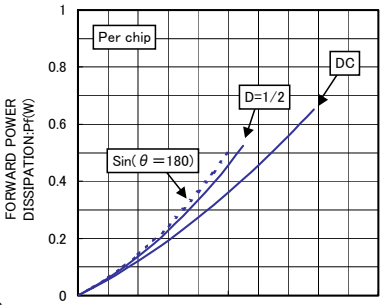
IFSM-CYCLE CHARACTERISTICS



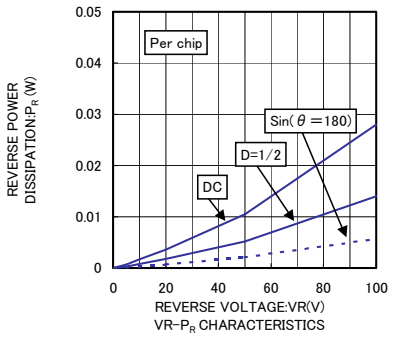
IFSM-t CHARACTERISTICS

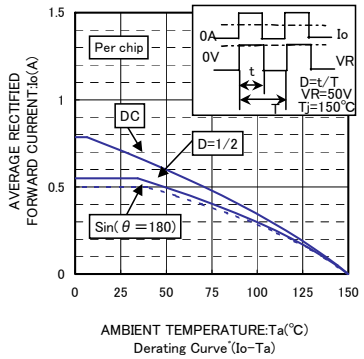


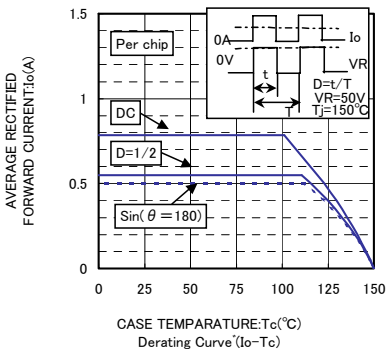
Rth-t CHARACTERISTICS

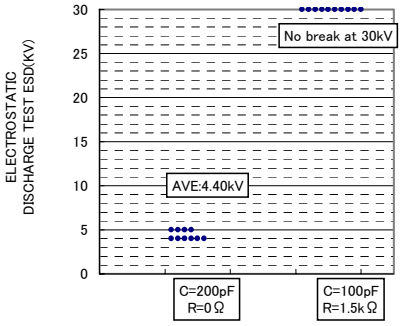


Io-Pf CHARACTERISTICS


REVERSE POWER DISSIPATION:P_R (W)
0.05
0.04
0.03
0.02
0.01
0
Per chip
Sin(θ=180)
D=1/2
DC
0
20
40
60
80
100
REVERSE VOLTAGE:VR(V)
VR-P_R CHARACTERISTICS


AVERAGE RECTIFIED FORWARD CURRENT:Io(A)
1.5
1
0.5
0
Per chip
DC
D=1/2
Sin(θ=180)
0A
0V
Io
VR
t
T
D=t/T
VR=50V
Tj=150°C
0
25
50
75
100
125
150
AMBIENT TEMPERATURE:Ta(°C)
Derating Curve(Io-Ta)


AVERAGE RECTIFIED FORWARD CURRENT:Io(A)
1.5
1
0.5
0
Per chip
DC
D=1/2
Sin(θ=180)
0A
0V
Io
VR
t
T
D=t/T
VR=50V
Tj=150°C
0
25
50
75
100
125
150
CASE TEMPARATURE:Tc(°C)
Derating Curve(Io-Tc)


ELECTROSTATIC DISCHARGE TEST ESD(KV)
30
25
20
15
10
5
0
No break at 30kV
AVE:4.40kV
C=200pF
R=0Ω
C=100pF
R=1.5kΩ

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