

M1FL20U

Fast Recovery Diodes

200V, 1.1A

Feature

- Small SMD
- High Recovery Speed
- Based on AEC-Q101
- Pb free terminal
- RoHS:Yes

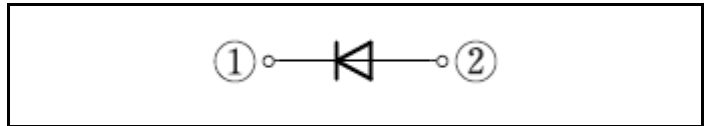
OUTLINE

Package (House Name): M1F

Package (JEDEC Code): DO-219AA similar



Equivalent circuit



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

Item	Symbol	Conditions	Ratings	Unit
Storage temperature	T _{stg}		-55 to 150	°C
Junction temperature	T _j		-55 to 150	°C
Repetitive peak reverse voltage	V _{RRM}		200	V
Average forward current	I _{F(AV)}	50Hz sine wave, Resistance load, On alumina substrate, Ta=25°C ※	1.1	A
Average forward current	I _{F(AV)}	50Hz sine wave, Resistance load, On glass-epoxy substrate, Ta=25°C ※	0.75	A
Surge forward current	I _{FSM}	50Hz sine wave, Non-repetitive 1 cycle, Peak value, T _j =25°C	30	A

※ :See the original Specifications

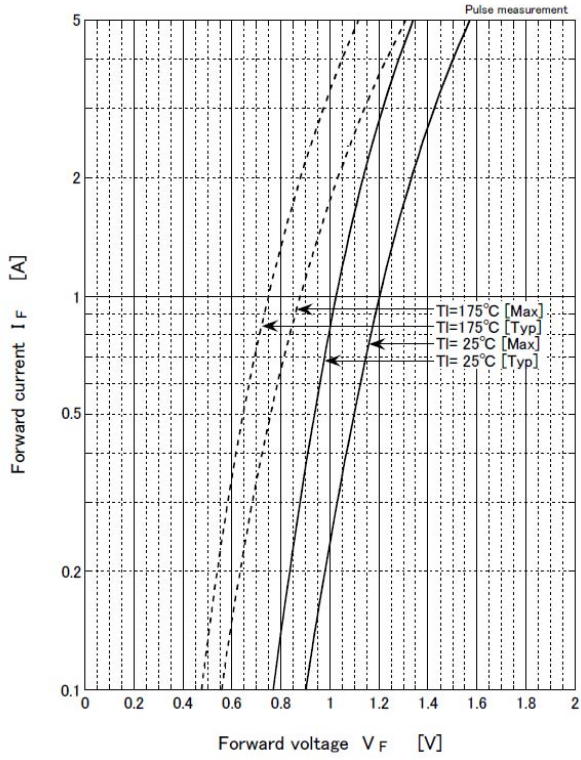
Electrical Characteristics (unless otherwise specified : Tl=25°C)

Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Forward voltage	V_F	$I_F=1.1A$, Pulse measurement			0.98	V
Reverse current	I_R	$V_R=200V$, Pulse measurement			10	μA
Reverse recovery time	t_{rr}	$I_F=0.5A$, $I_R=1.0A$, $0.1I_R$			35	ns
Thermal resistance	$R_{th(j-l)}$	Junction to lead			20	$^{\circ}C/W$
Thermal resistance	$R_{th(j-a)}$	Junction to ambient, On alumina substrate *			108	$^{\circ}C/W$
Thermal resistance	$R_{th(j-a)}$	Junction to ambient, On glass-epoxy substrate *			186	$^{\circ}C/W$

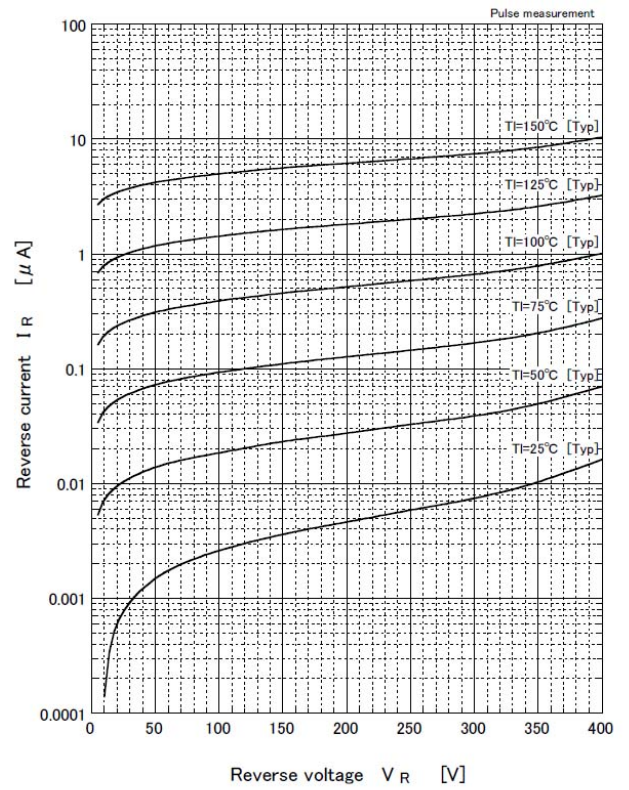
* :See the original Specifications

CHARACTERISTIC DIAGRAMS

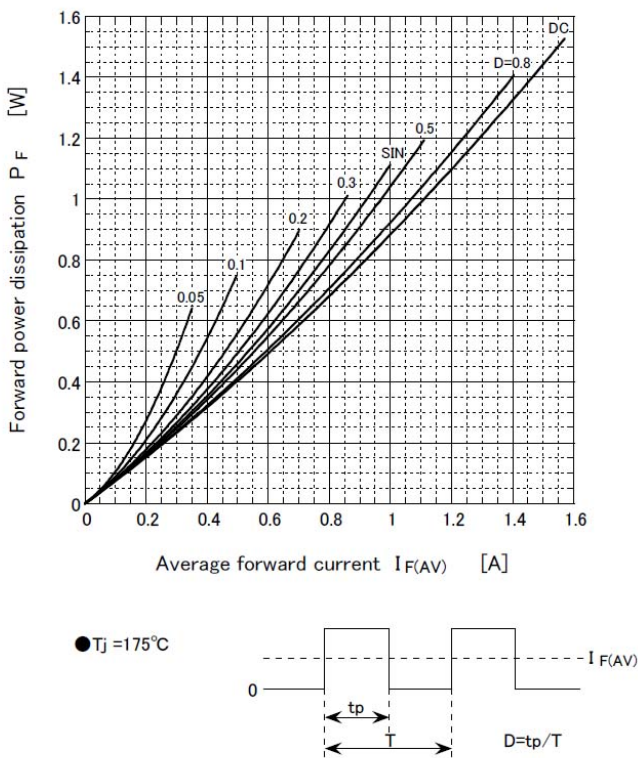
Forward voltage



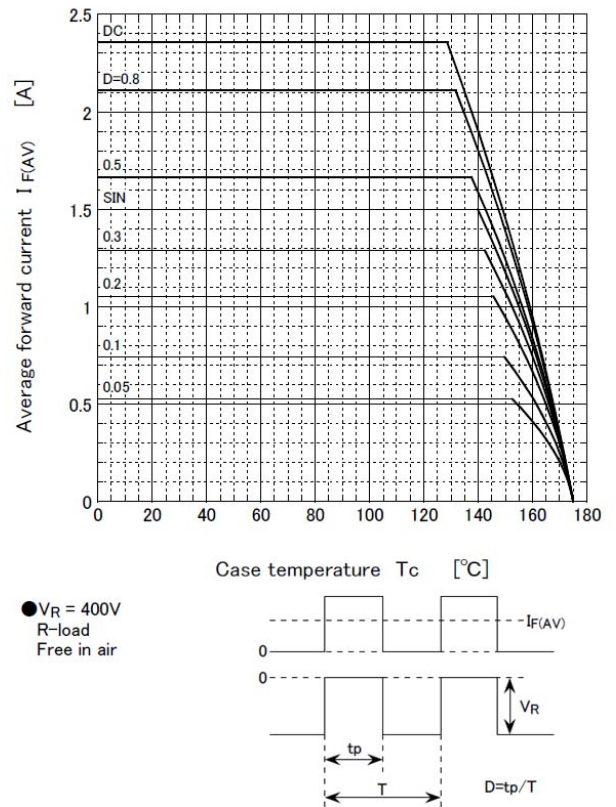
Reverse current



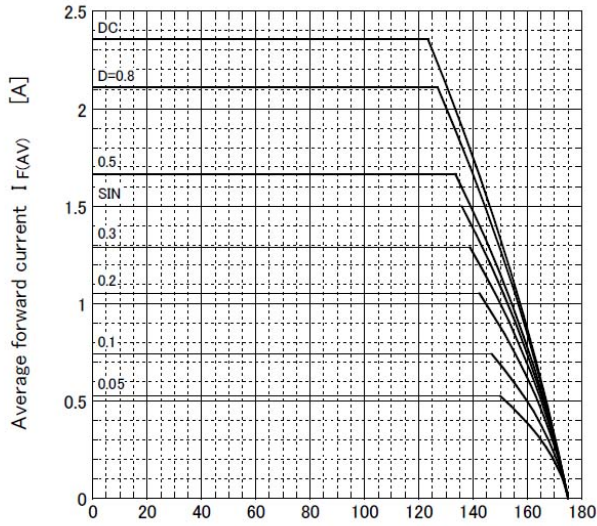
Forward power dissipation



Derating curve

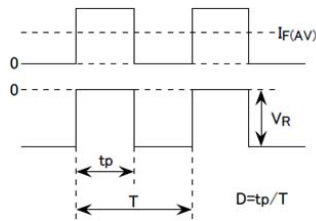


Derating curve

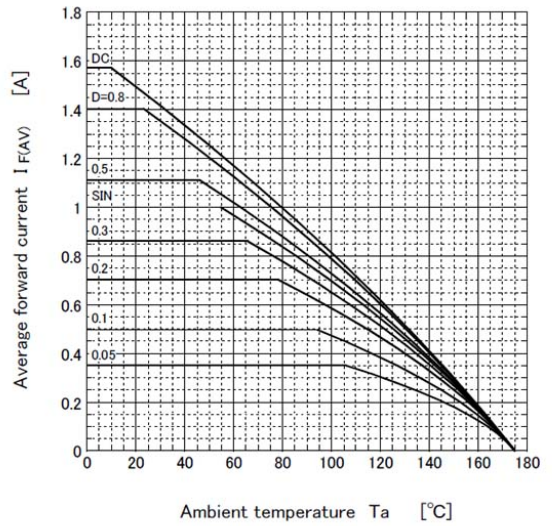


● $V_R = 400V$
R-load
Free in air

Lead temperature T_l [°C]



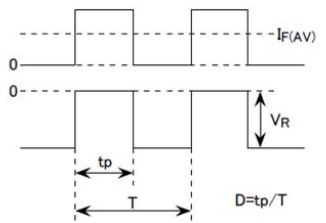
Derating curve



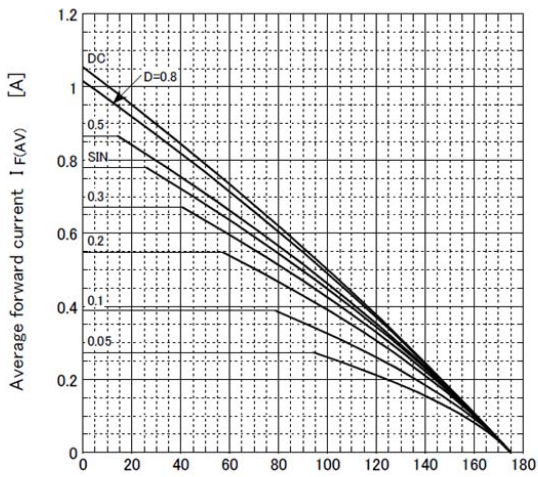
● $V_R = 400V$
R-load
Free in air

● Substrate detail

Type	Alumina
Size	1 inch ²
Thickness	0.64mm
Conductor thickness	20 μm
Pattern area	43.4mm ²



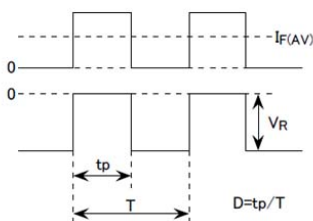
Derating curve



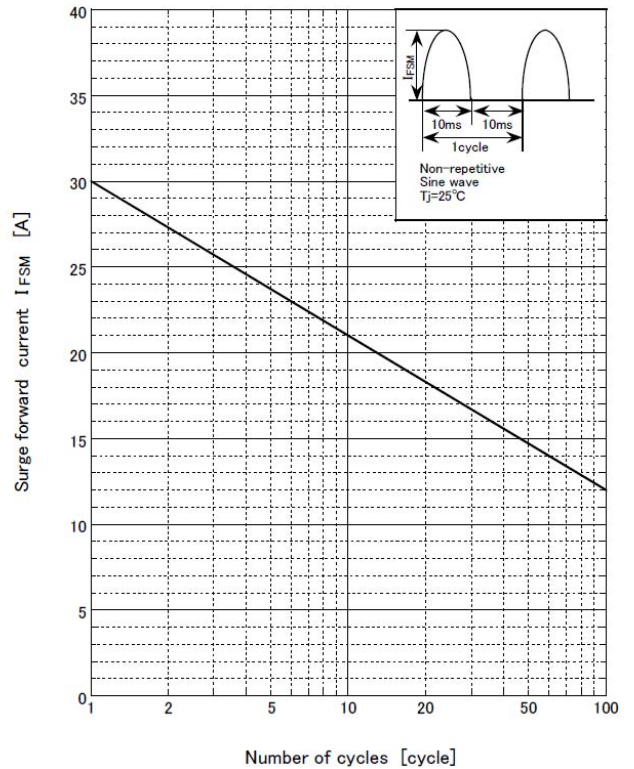
● $V_R = 400V$
R-load
Free in air

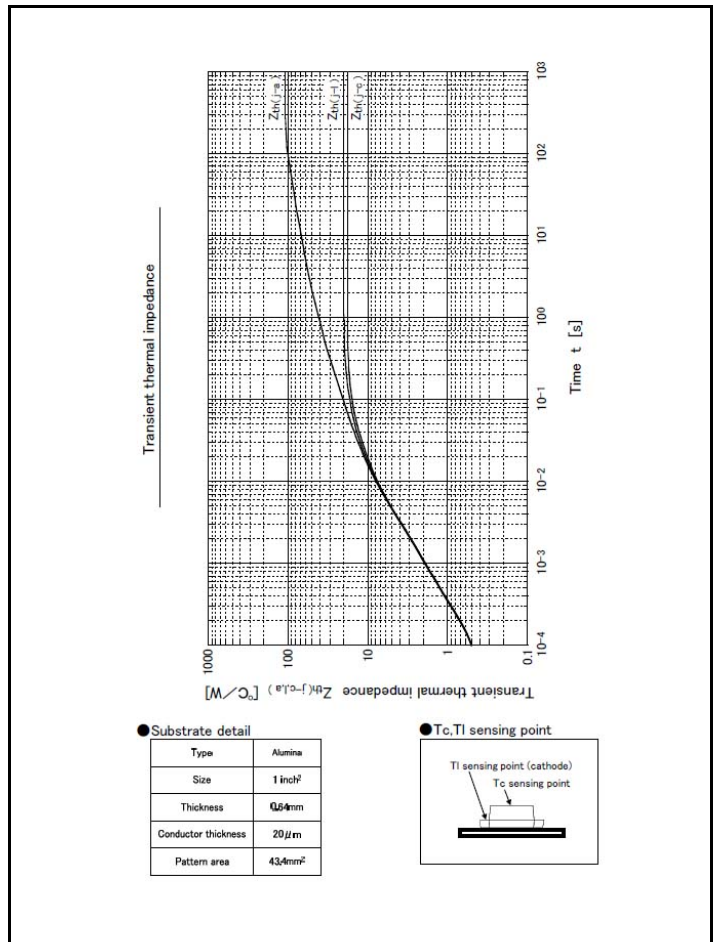
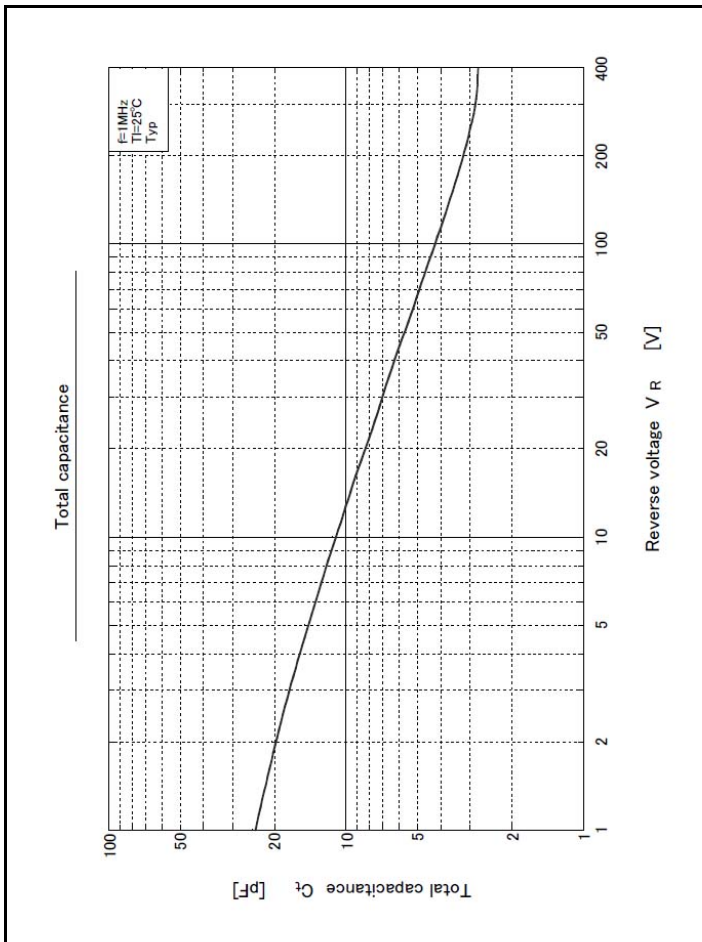
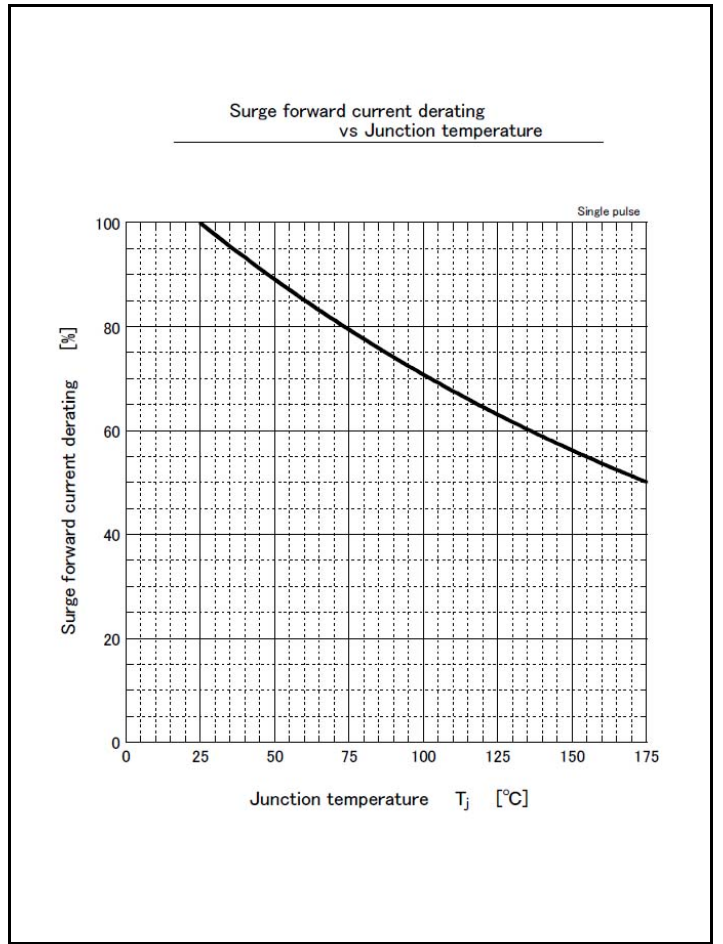
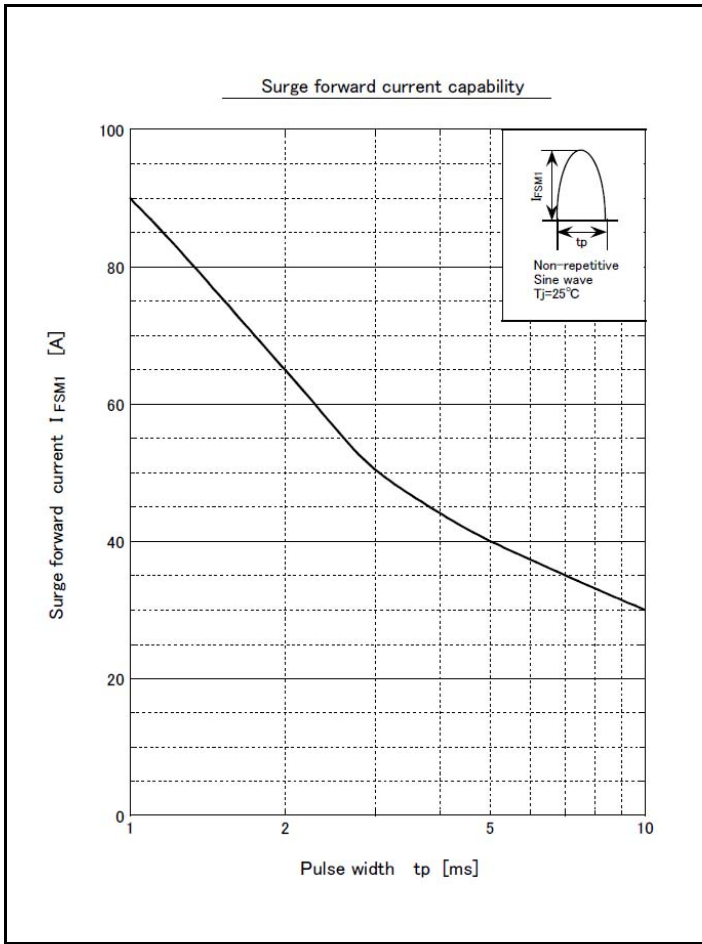
● Substrate detail

Type	Glass/epoxy
Size	1 inch ²
Thickness	1.8mm
Conductor thickness	35 μm
Pattern area	43.4mm ²

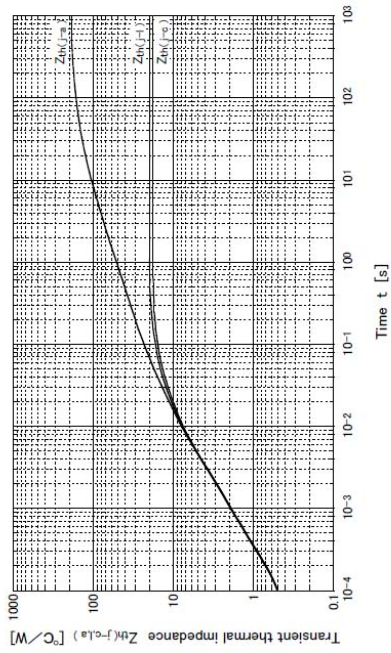


Surge forward current capability





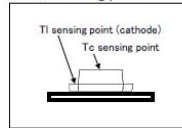
Transient thermal impedance



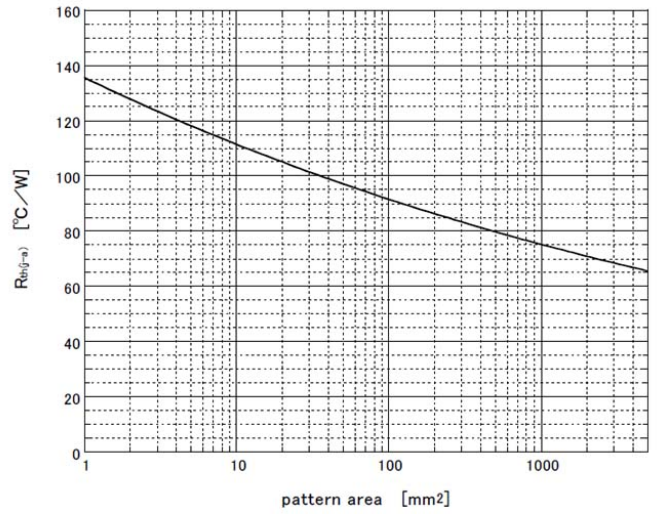
● Substrate detail

Type	Glass-epoxy
Size	1 inch ²
Thickness	1.6mm
Conductor thickness	35 μm
Pattern area	43.4mm ²

● Tc, Tl sensing point



$R_{th(j-a)}$ - pattern area

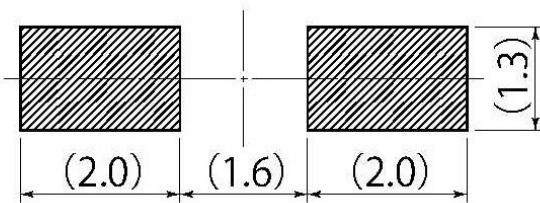
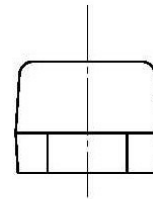
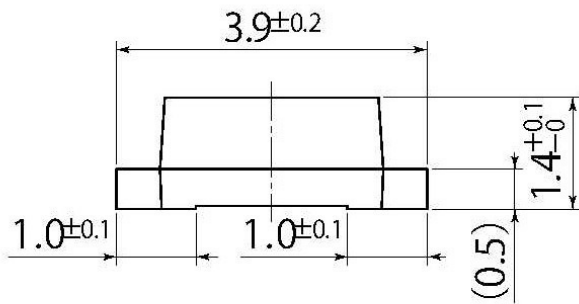
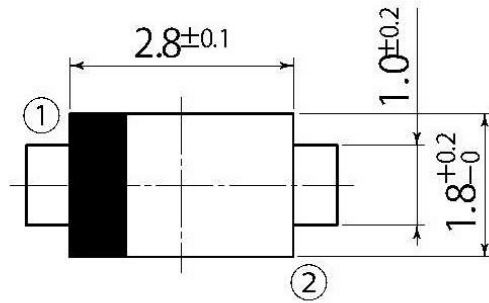


● Substrate detail

Type	Glass-epoxy
Size	1 inch ²
Thickness	1.6mm
Conductor thickness	35 μm

B2

JEDEC Code	DO-219AA similar
JEITA Code	—
House Name	M1F



Referential Soldering Pad

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

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