

M1FK60

Fast Recovery Diodes 600V, 1A

Feature

- Small SMD
- High Voltage
- High Recovery Speed
- Available for automotive use
- Pb free terminal
- RoHS:Yes

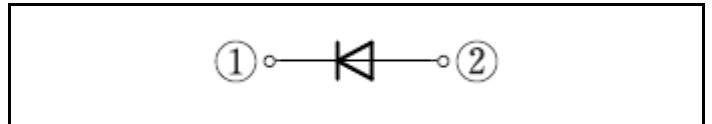
OUTLINE

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}		600	V
Average forward current	I _{F(AV)}	50Hz sine wave, Resistance load, Tl=116°C	1	A
Average forward current	I _{F(AV)}	50Hz sine wave, Resistance load, On alumina substrate, Ta=25°C *	0.77	A
Average forward current	I _{F(AV)}	50Hz sine wave, Resistance load, On glass-epoxy substrate, Ta=25°C *	0.51	A
Surge forward current	I _{FSM}	50Hz sine wave, Non-repetitive 1 cycle, Peak value, T _j =25°C	15	A
Surge forward current	I _{FSM1}	tp=1ms, Sine wave, Non-repetitive, Peak value, T _j =25°C	35	A

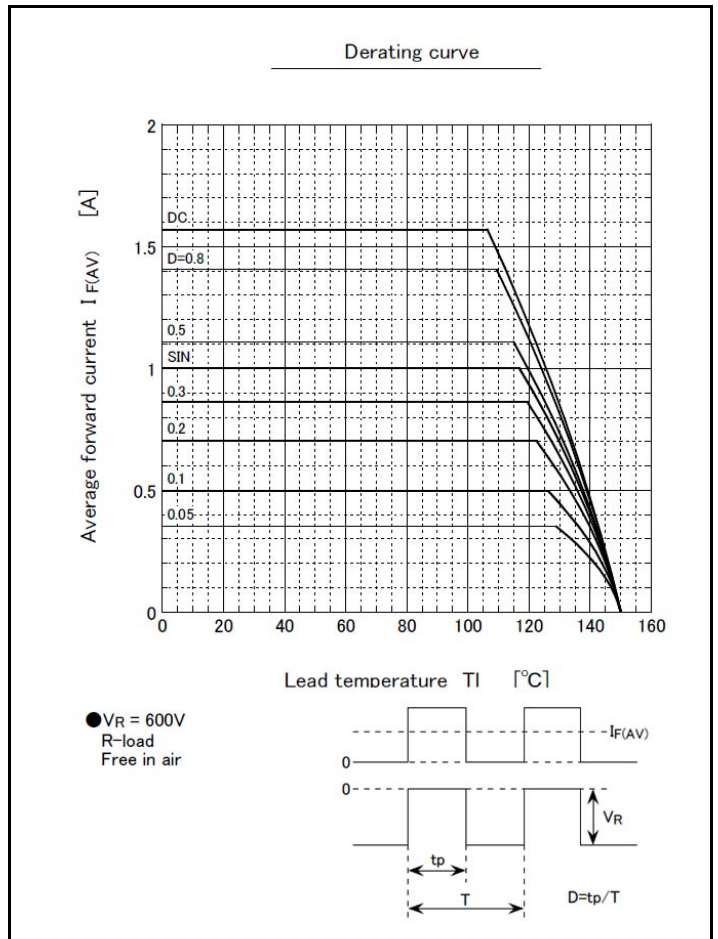
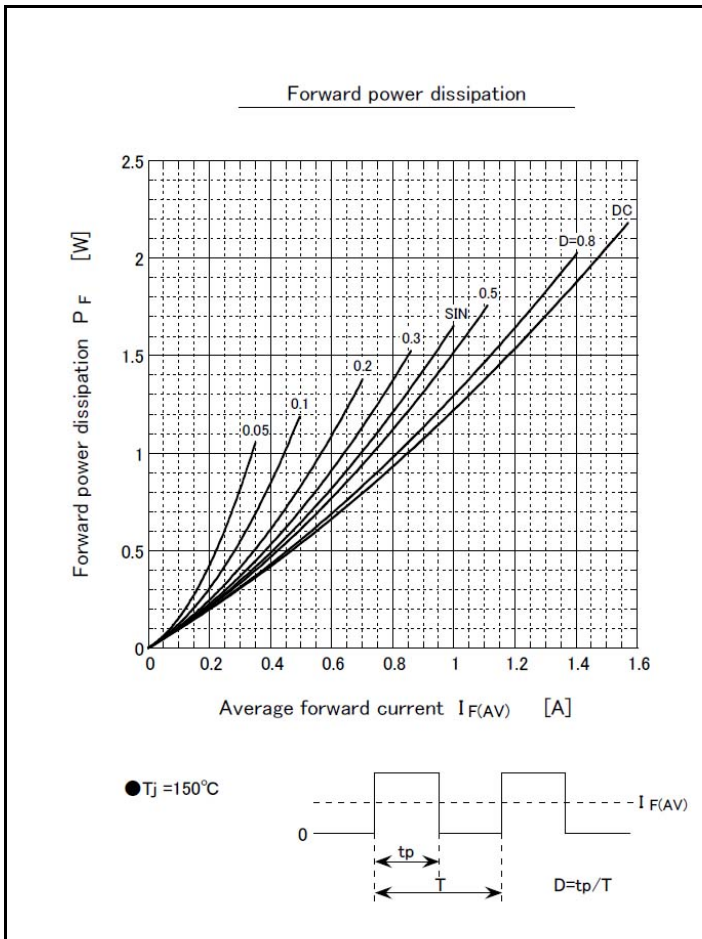
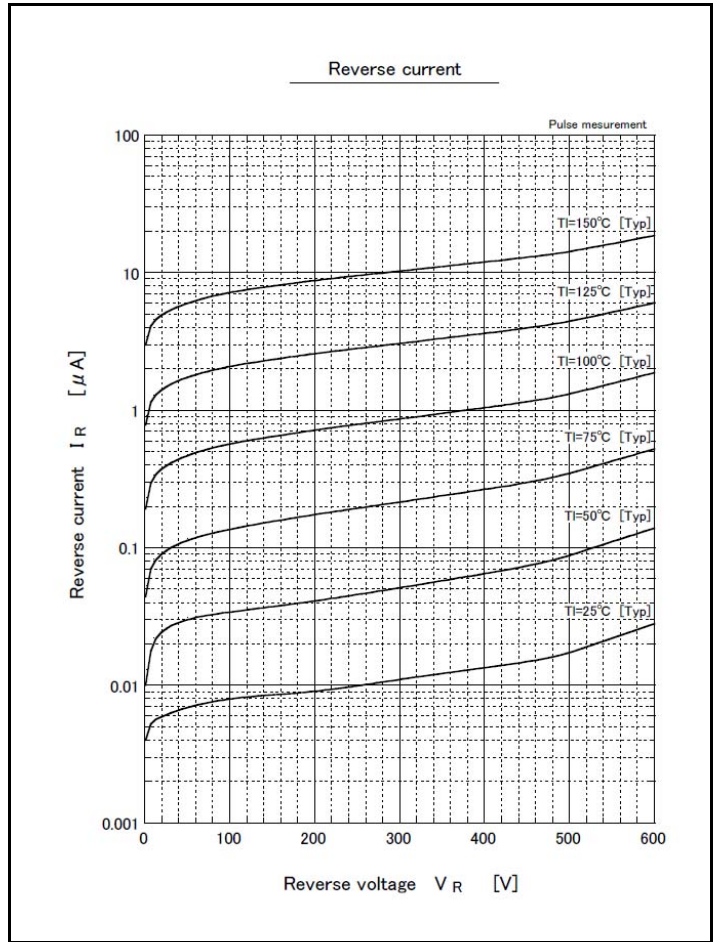
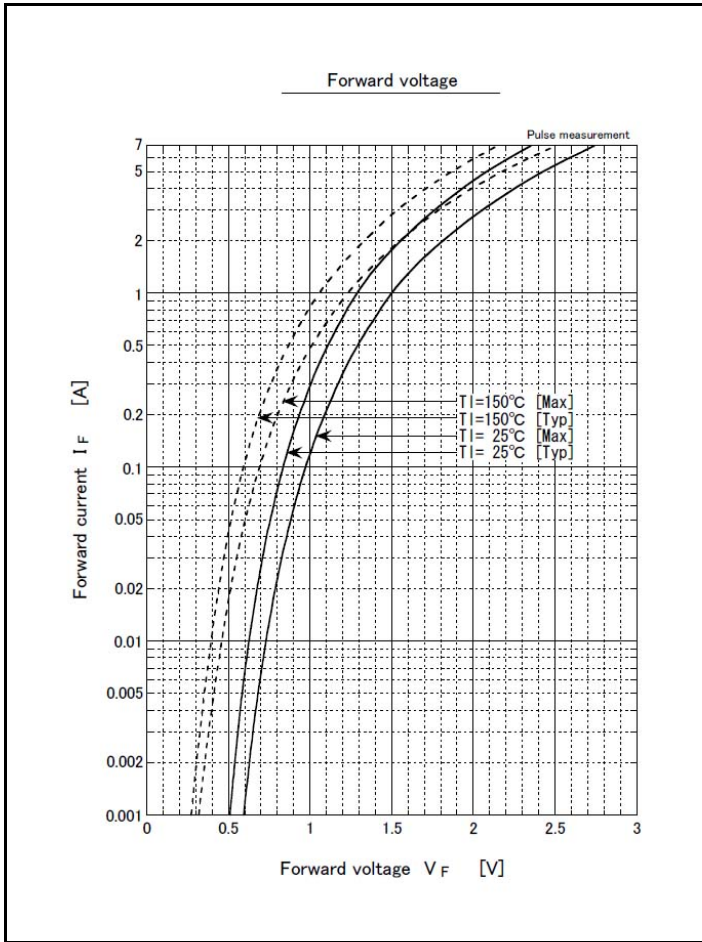
* : See the original Specifications

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

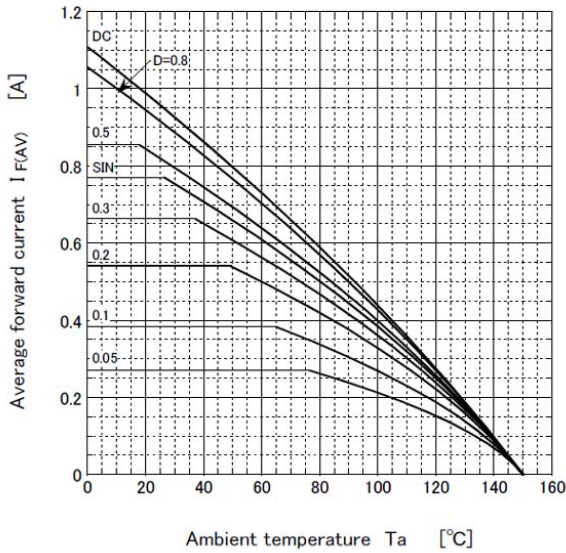
Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Forward voltage	V_F	$I_F=1A$, Pulse measurement			1.5	V
Reverse current	I_R	$V_R=600V$, Pulse measurement			10	μA
Reverse recovery time	t_{rr}	$I_F=0.5A$, $I_R=1.0A$, $0.25I_R$			75	ns
Total capacitance	C_t	$f=1MHz$, $V_R=10V$		6		pF
Thermal resistance	$R_{th(j-l)}$	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



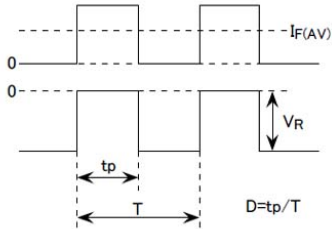
Derating curve



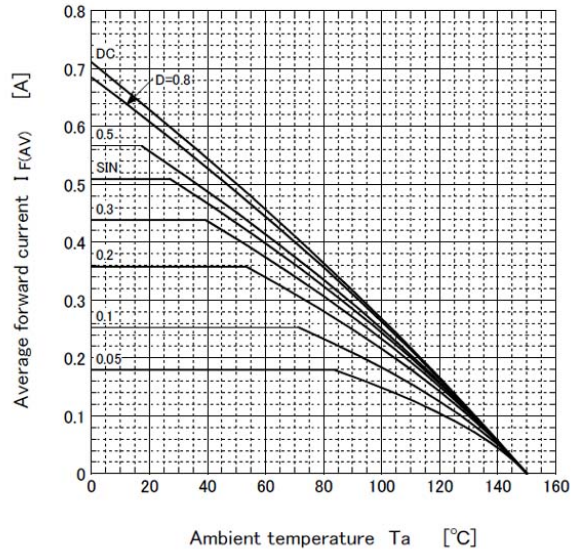
● $V_R = 600V$
R-load
Free in air

● Substrate detail

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



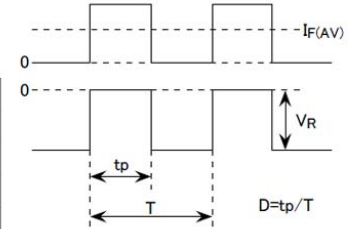
Derating curve



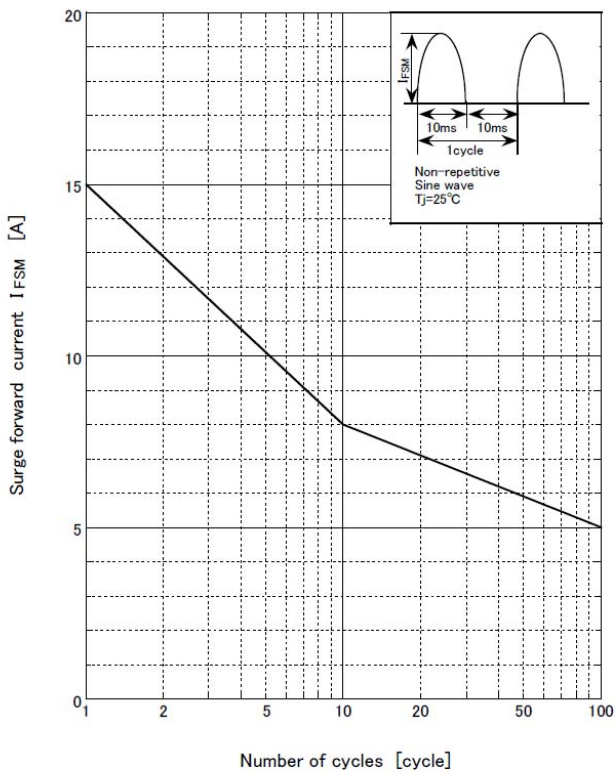
● $V_R = 600V$
R-load
Free in air

● Substrate detail

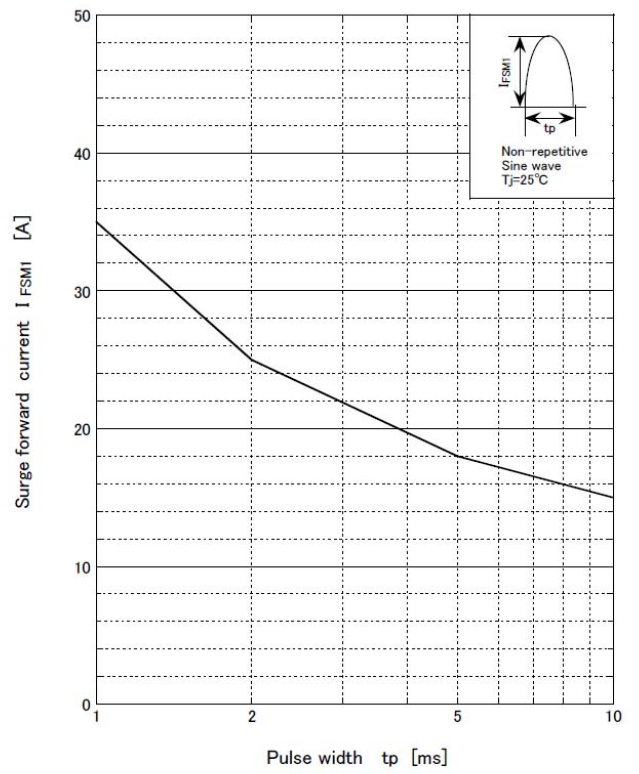
Type	Glass/epoxy
Size	1 inch ²
Thickness	1.8mm
Conductor thickness	35 μm
Pattern area	43.4mm ²



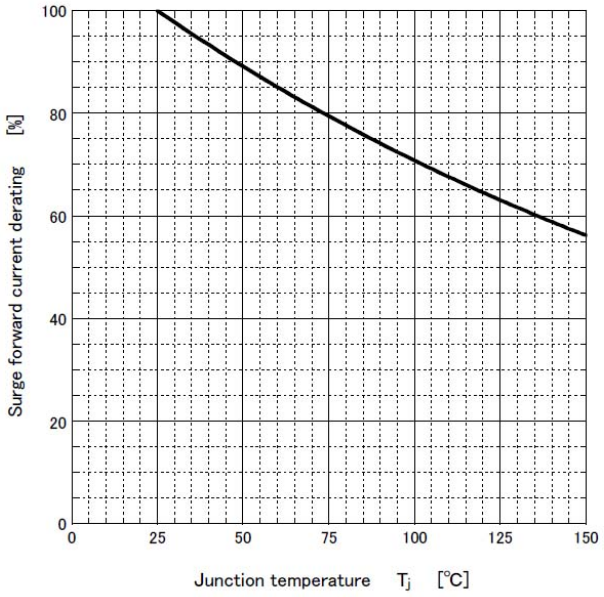
Surge forward current capability



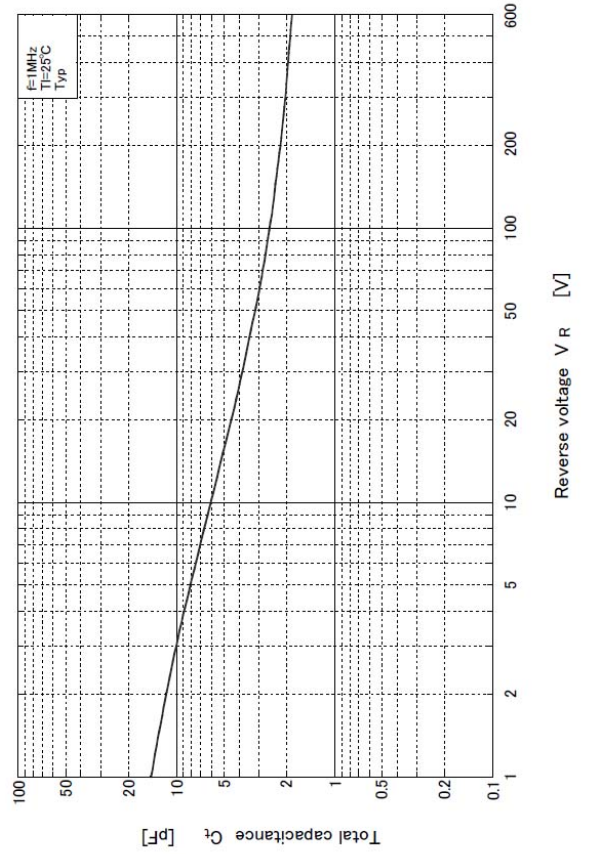
Surge forward current capability



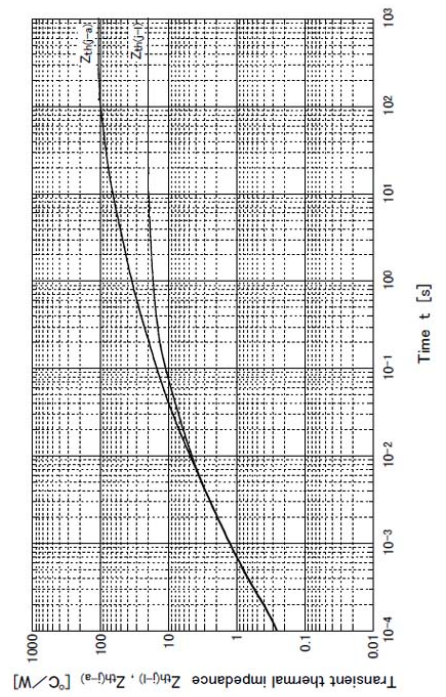
Surge forward current derating vs Junction temperature



Total capacitance

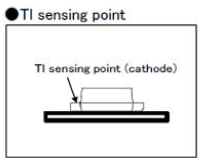


Transient thermal impedance

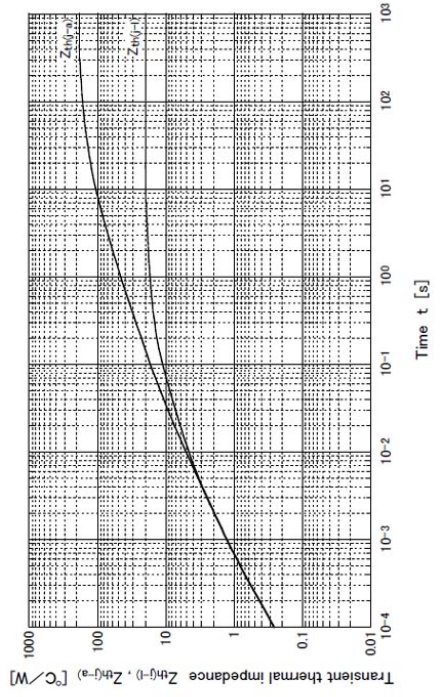


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Conductor thickness	20μm
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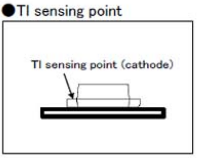


Transient thermal impedance



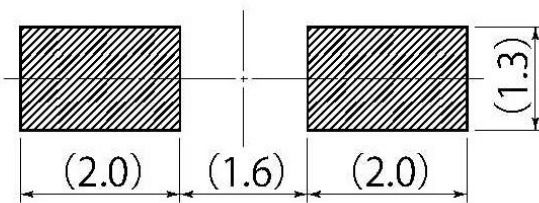
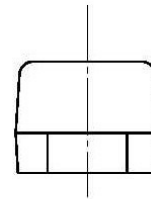
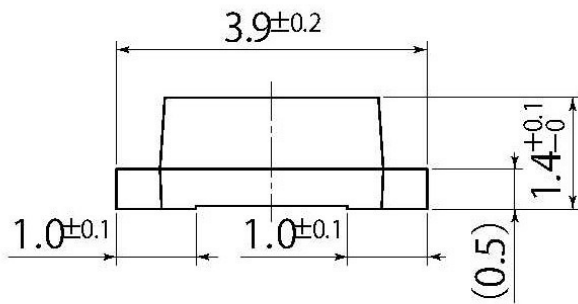
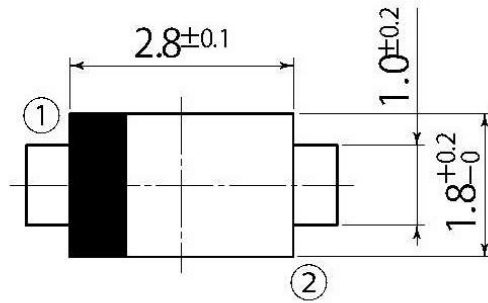
● Substrate detail

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



B2

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



Referential Soldering Pad

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