

FM220-MFL Thru FM2200-MFL

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FM220-MFL Thru FM2200-MFL

2.0A Schottky Barrier Rectifiers : 20V ~ 200V

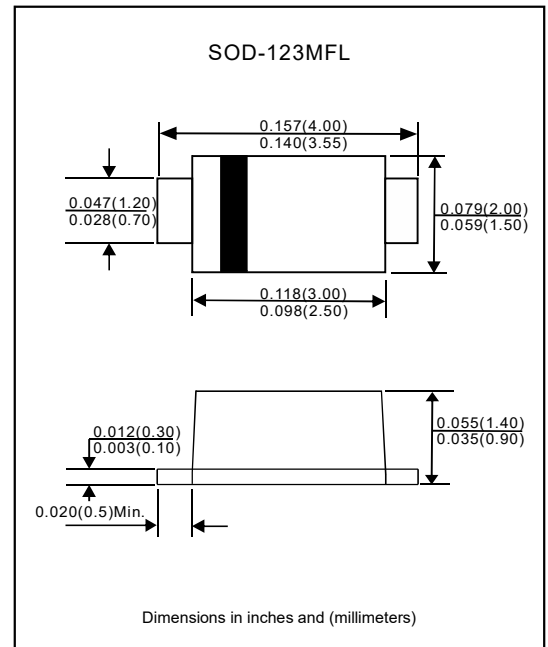
Features

- Built-in strain relief, ideal for automated placement.
- Low reverse leakage.
- High forward surge current capability.
- High temperature soldering guaranteed 250°C/10 seconds at terminals.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. FM220-MFL-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic, SOD-123MFL.
- Terminals : Plated terminals, solderable per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline



Maximum ratings and electrical characteristics (AT $T_A=25^\circ\text{C}$, unless otherwise noted)

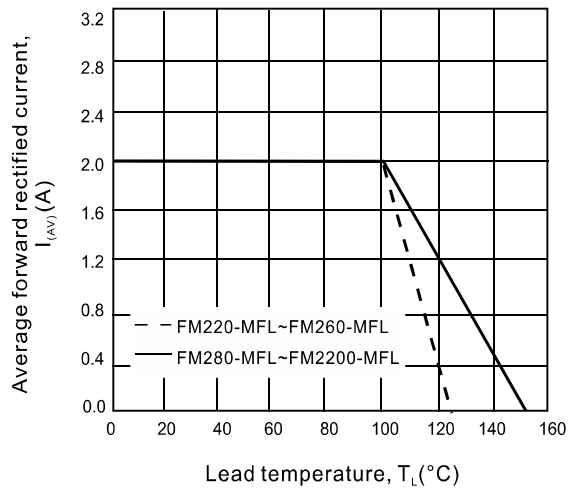
Parameter	Symbol	FM220 -MFL	FM240 -MFL	FM260 -MFL	FM280 -MFL	FM2100 -MFL	FM2150 -MFL	FM2200 -MFL	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	20	40	60	80	100	150	200	V
Maximum RMS voltage	V _{RMS}	14	28	42	56	70	105	140	V
Maximum DC blocking voltage	V _{DC}	20	40	60	80	100	150	200	V
Maximum average forward rectified current at T _L =100°C	I _(AV)	2							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	50							A
Maximum instantaneous forward voltage at 2.0A	V _F	0.55		0.70	0.85		0.95		V
Maximum DC reverse current (T _A =25°C)	I _R	0.5			0.05				mA
at rated DC blocking voltage (T _A =125°C)		50			10				
Typical thermal resistance	R _{θJA}	85							°C/W
Operating junction temperature	T _J	+125			+150				°C
Storage temperature range	T _{STG}	-55 to +150							°C

Note: 1. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

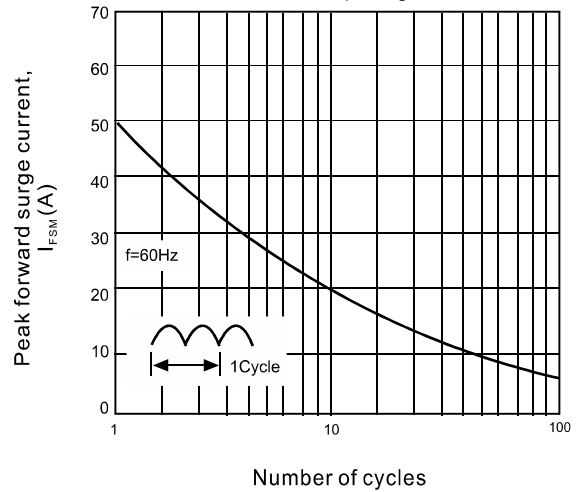
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Rating and characteristic curves

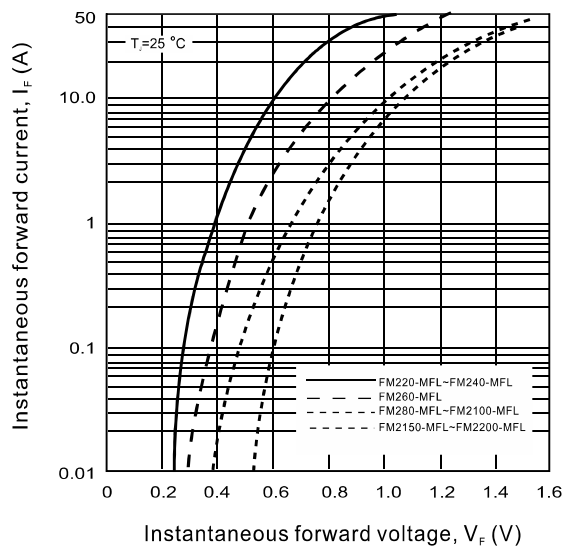
Derating curve output rectified current



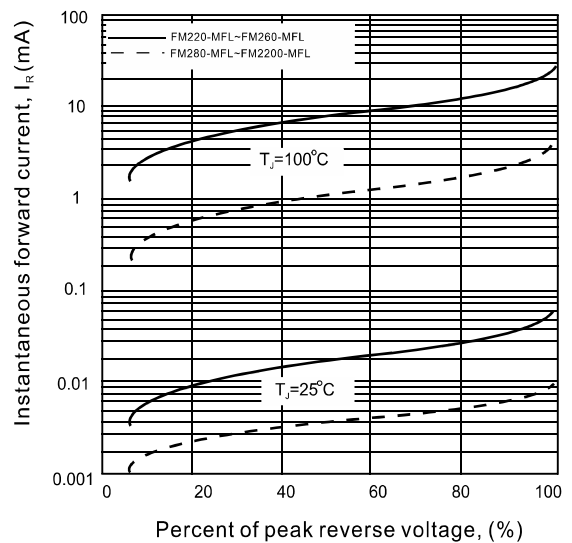
Maximum non-repetitive peak forward surge current per leg



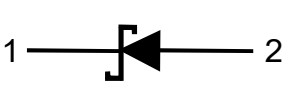
Typical forward voltage characteristics



Typical reverse leakage characteristics

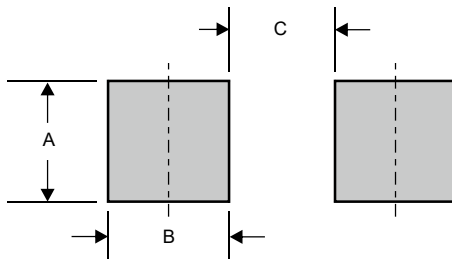


FM220-MFL Thru FM2200-MFL**Pinning information**

Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Anode		

Marking

Type number	Marking code
FM220-MFL	K22
FM240-MFL	K24
FM260-MFL	K26
FM280-MFL	K28
FM2100-MFL	K210
FM2150-MFL	K215
FM2200-MFL	K220

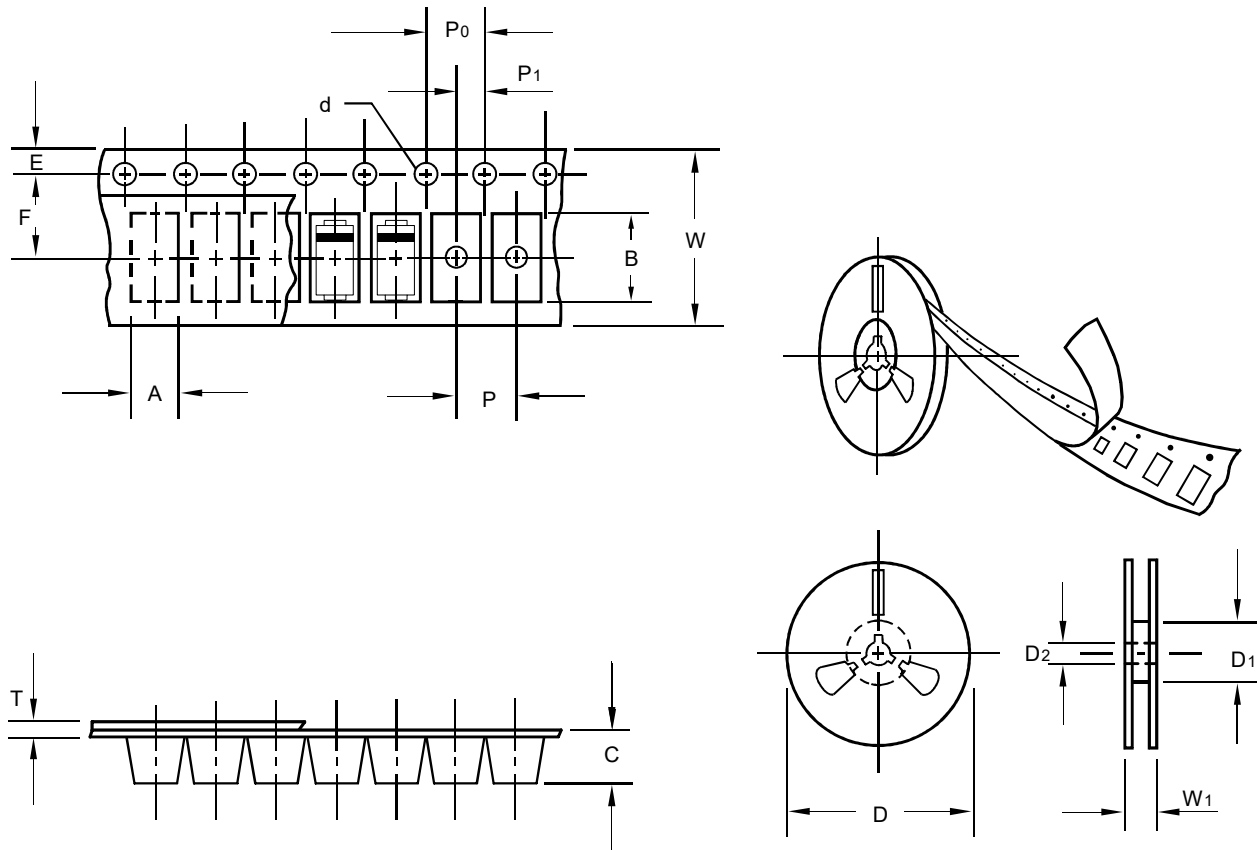
Suggested solder pad layout

Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123MFL	0.048 (1.20)	0.045 (1.15)	0.077 (1.95)

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Packing information



unit:mm

Item	Symbol	Tolerance	SOD-123MFL
Carrier width	A	0.1	2.15
Carrier length	B	0.1	3.95
Carrier depth	C	0.1	1.35
Sprocket hole	d	0.1	1.55
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D ₁	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	62.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.00
Reel width	W ₁	1.0	11.40

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

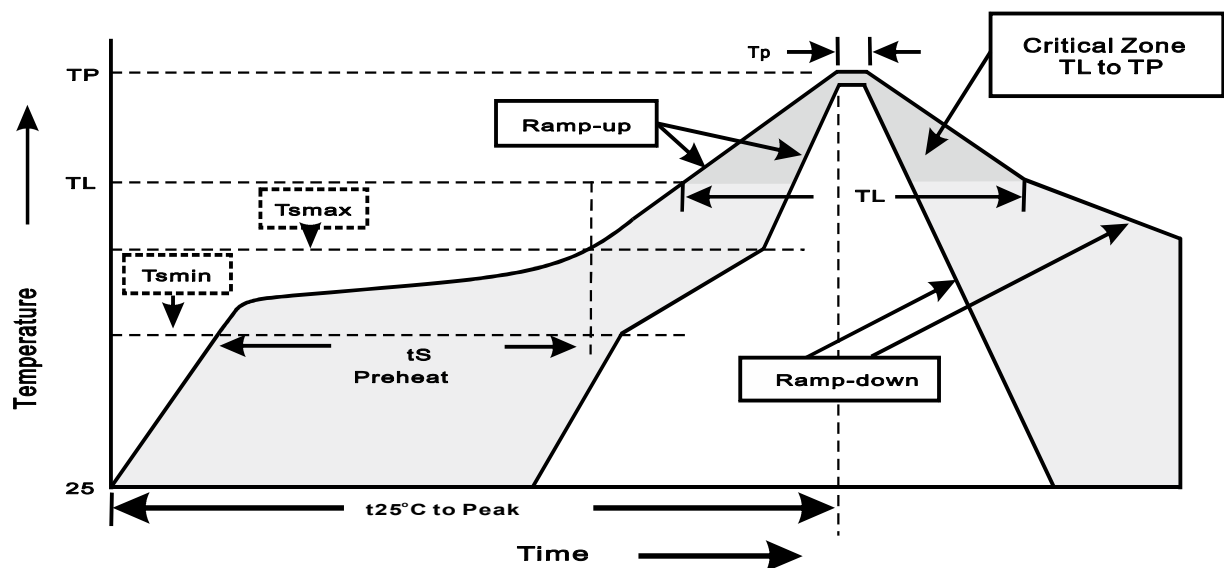
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)
SOD-123MFL	7"	3,000	4.0	30,000	183*123*183	178	382*257*387	240,000

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	$<3^{\circ}\text{C}/\text{sec}$
Preheat -Temperature Min(T_{min}) -Temperature Max(T_{max}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{max} to T_L -Ramp-upRate	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$