

FM140-AFL Thru FM1200-AFL

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FM140-AFL Thru FM1200-AFL

1.0A Surface Mount Schottky Barrier Rectifiers : 40V~200V

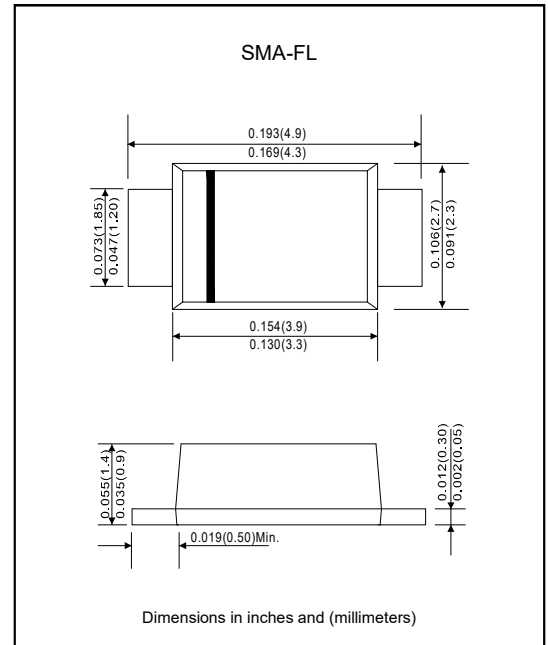
Features

- 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. FM140-AFL-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, SMA-FL.
- Terminals : Solder plated, 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)

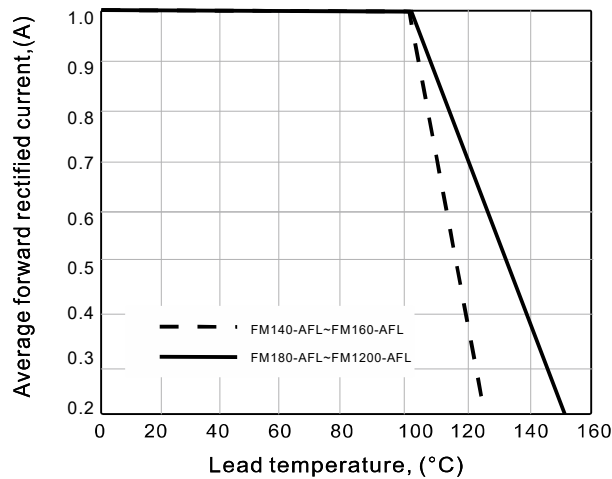
Parameter	Symbol	FM140 -AFL	FM150 -AFL	FM160 -AFL	FM180 -AFL	FM1100 -AFL	FM1150 -AFL	FM1200 -AFL	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	40	50	60	80	100	150	200	V
Maximum RMS voltage	V _{RMS}	28	35	42	56	70	105	140	V
Maximum DC blocking voltage	V _{DC}	40	50	60	80	100	150	200	V
Maximum average forward rectified current at T _L =100°C	I _(AV)	1							A
Peak forward surge current 8.3ms single half sine- wavesuperimposed on rated load	I _{FSM}	30							A
Maximum instantaneous forward voltage at 1.0A	V _F	0.5		0.7	0.85		0.90		V
Maximum DC reverse current (T _A =25°C)	I _R	0.5			0.05			mA	
at rated DC blocking voltage (T _A =100°C)		50			10				
Typical thermal resistance	R _{θJA}	70							°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%.

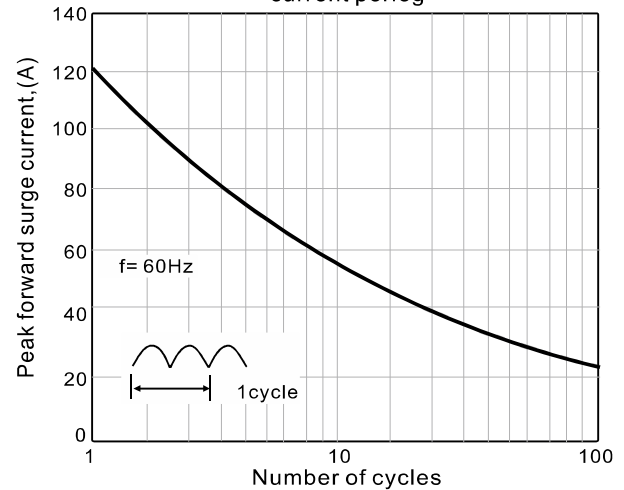
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Rating and characteristic curves

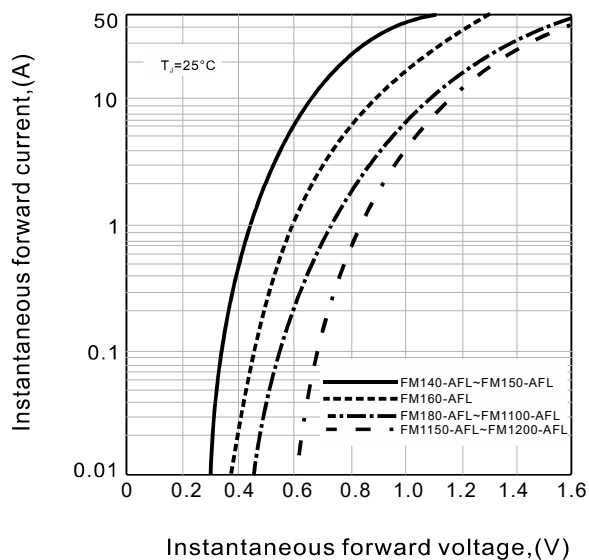
De-rating curve output rectified current



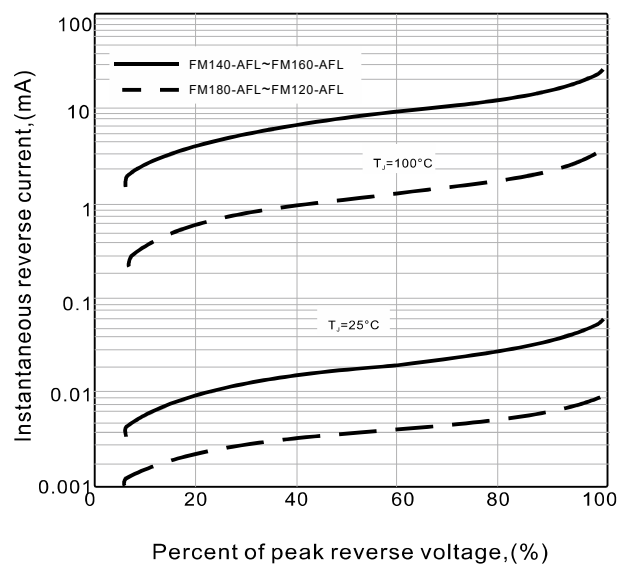
Maximum non-repetitive peak forward surge current per leg



Typical forward voltage characteristics



Typical reverse leakage characteristics



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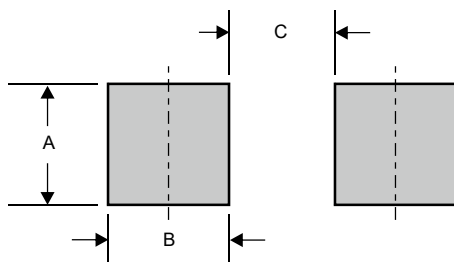
Pinning information

Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Anode		

Marking

Type number	Marking code
SF140-AFL	SS14F
SF150-AFL	SS15F
SF160-AFL	SS16F
SF180-AFL	SS18F
SF1100-AFL	SS110F
SF1150-AFL	SS115F
SF1200-AFL	SS120F

Suggested solder pad layout

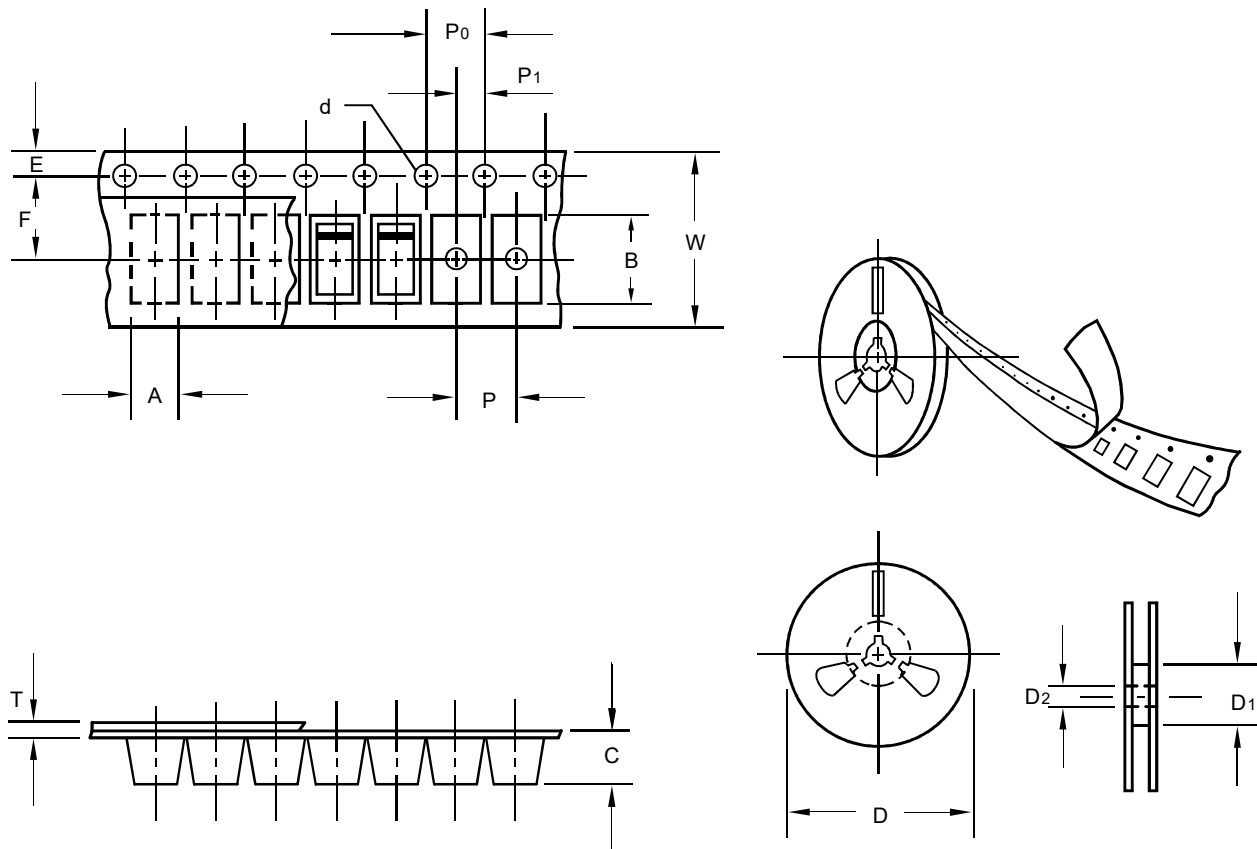


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMA-FL	0.066 (1.68)	0.060 (1.52)	0.078 (2.00)

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Packing information



unit:mm

Item	Symbol	Tolerance	SMA-FL
Carrier width	A	0.1	2.83
Carrier length	B	0.1	4.75
Carrier depth	C	0.1	1.42
Sprocket hole	d	0.2	1.55
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D1	min	-
7" Reel outside diameter	D	2.0	178
7" Reel inner diameter	D1	min	54.4
Feed hole diameter	D2	0.5	13.0
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.5
Punch hole pitch	P	0.1	4.0
Sprocket hole pitch	P0	0.1	4.0
Embossment center	P1	0.1	2.0
Overall tape thickness	T	0.2	0.25
Tape width	W	0.4	12.0

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

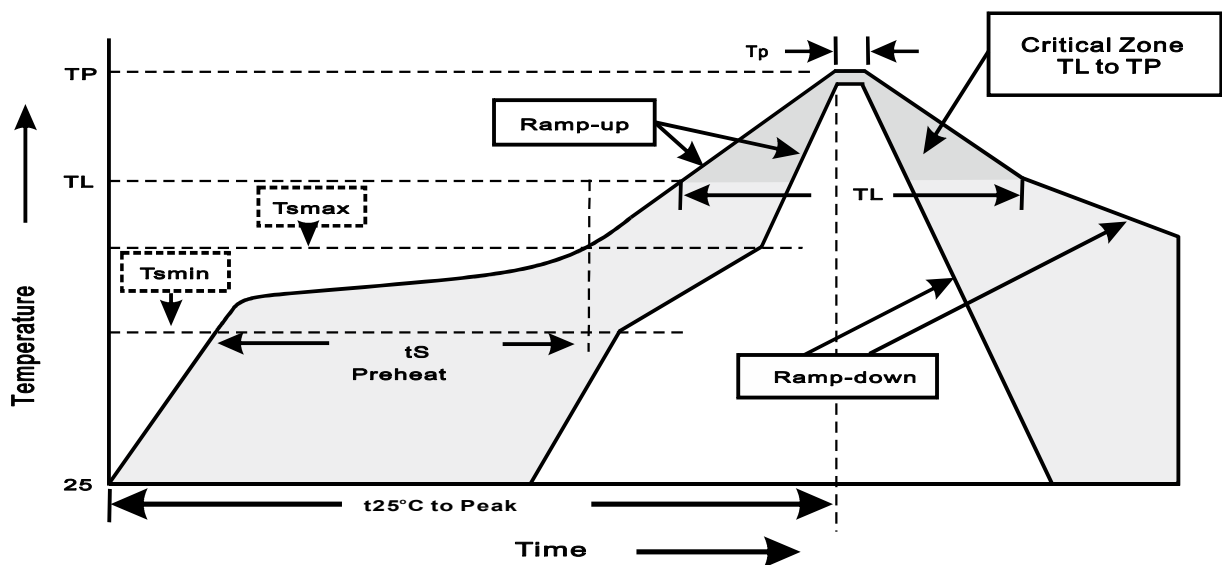
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (pcs)	REEL DIA (m/m)	CARTON SIZE (m/m)	CARTON (pcs)
SMA-FL	7"	3,000	4.0	30,000	183*155*183	178	382*356*392	240,000
	11"	7,500	-	-	-	278	-	-

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 $60\sim 120\text{sec}$
T_{max} to T_L -Ramp-upRate	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C $60\sim 260\text{sec}$
Peak Temperature(T_P)	$255^{\circ}\text{C}-0/+5^{\circ}\text{C}$
Time within 5°C of actual Peak Temperature(t_P)	$10\sim 30\text{sec}$
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$