

SL54-AFL Thru SL510-AFL

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SL54-AFL Thru SL510-AFL

5.0A Surface Mount Low VF Schottky
Barrier Rectifiers: 40V~100V

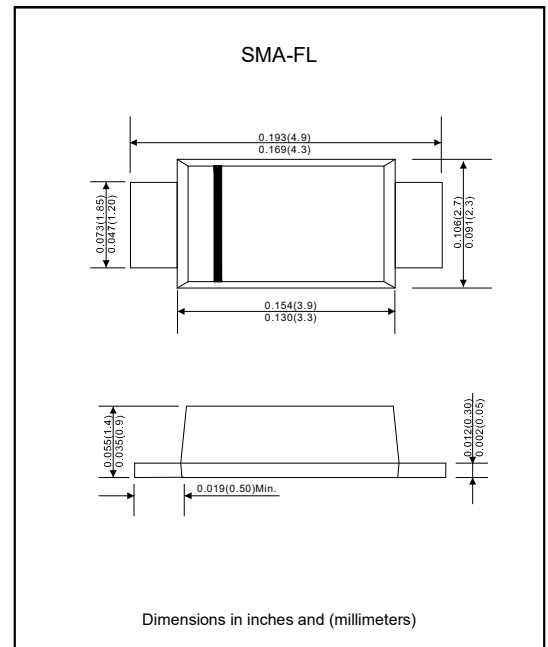
Features

- 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.
- For surface mounted applications.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates halogen free parts, ex. SL54-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)

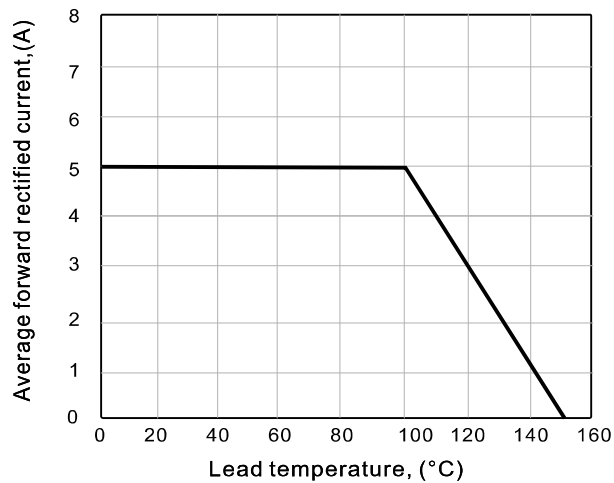
Parameter	Symbol	SL54-AFL	SL545-AFL	SL55-AFL	SL56-AFL	SL58-AFL	SL510-AFL	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	40	45	50	60	80	100	V
Maximum RMS voltage	V _{RMS}	28	31.5	35	42	56	70	V
Maximum DC blocking voltage	V _{DC}	40	45	50	60	80	100	V
Maximum average forward rectified current at T _L =100°C	I _(AV)	5						A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	120						A
Maximum instantaneous forward voltage at 5.0A	V _F	0.48			0.55		0.70	V
Maximum DC reverse current (T _A =25°C)	I _R	0.5				0.2		mA
at rated DC blocking voltage (T _A =125°C)		50				20		
Typical thermal resistance	R _{θJA}	70						°C/W
Operating junction temperature range	T _J	+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%.

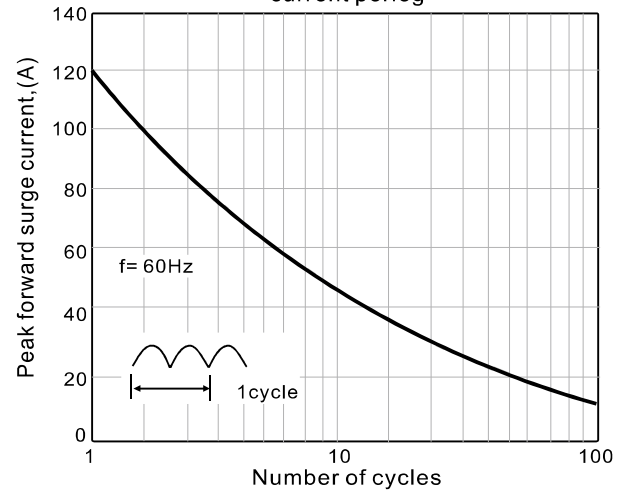
SL54-AFL Thru SL510-AFL

Rating and characteristic curves

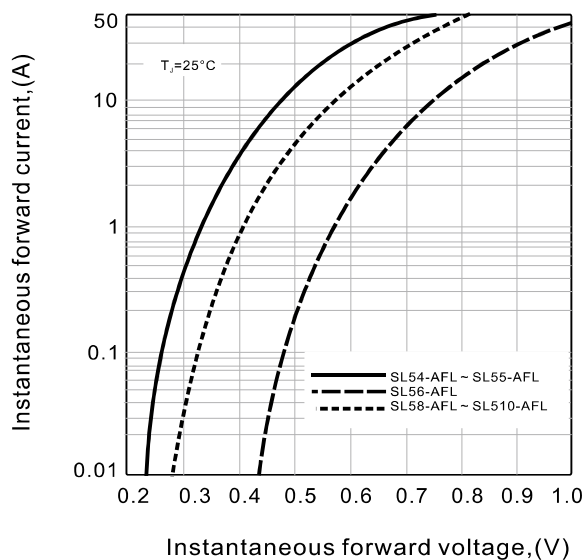
De-rating curve output rectified current



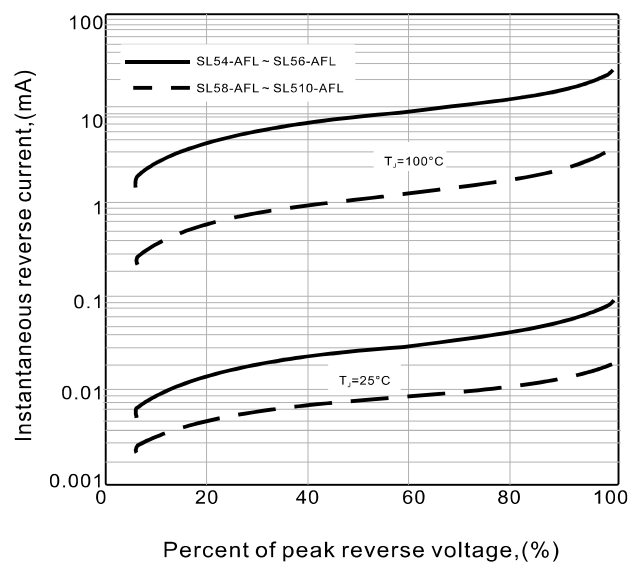
Maximum non-repetitive peak forward surge current per leg



Typical forward voltage characteristics

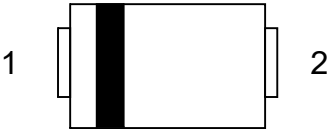


Typical reverse leakage characteristics



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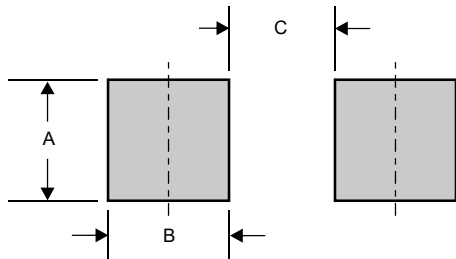
Pinning information

Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Anode		

Marking

Type number	Marking code
SL54-AFL	SL54F
SL545-AFL	SL545F
SL55-AFL	SL55F
SL56-AFL	SL56F
SL58-AFL	SL58F
SL510-AFL	SL510F

Suggested solder pad layout

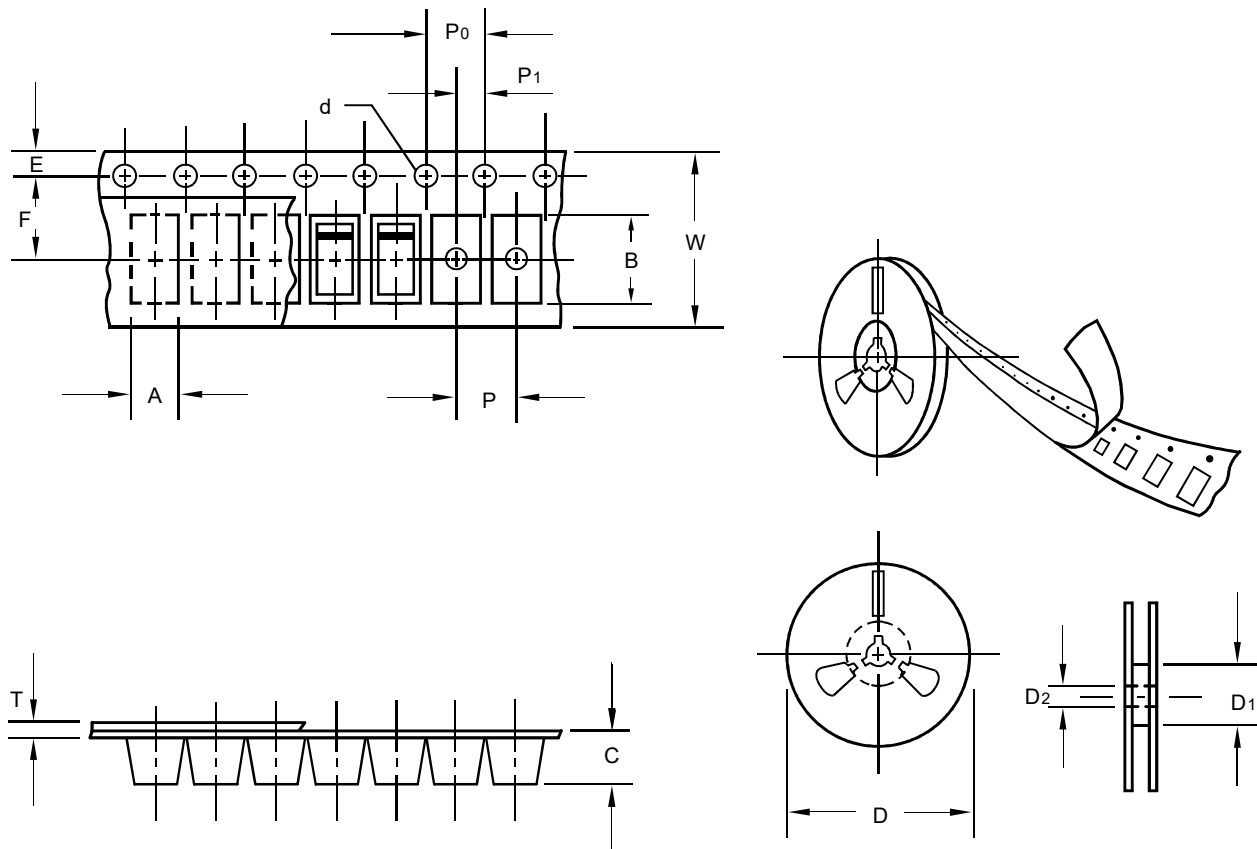


Dimensions in inches and (millimeters)

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	D ₁	min	-
7" Reel outside diameter	D	2.0	178
7" Reel inner diameter	D ₁	min	54.4
Feed hole diameter	D ₂	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	P ₀	0.1	4.0
Embossment center	P ₁	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.

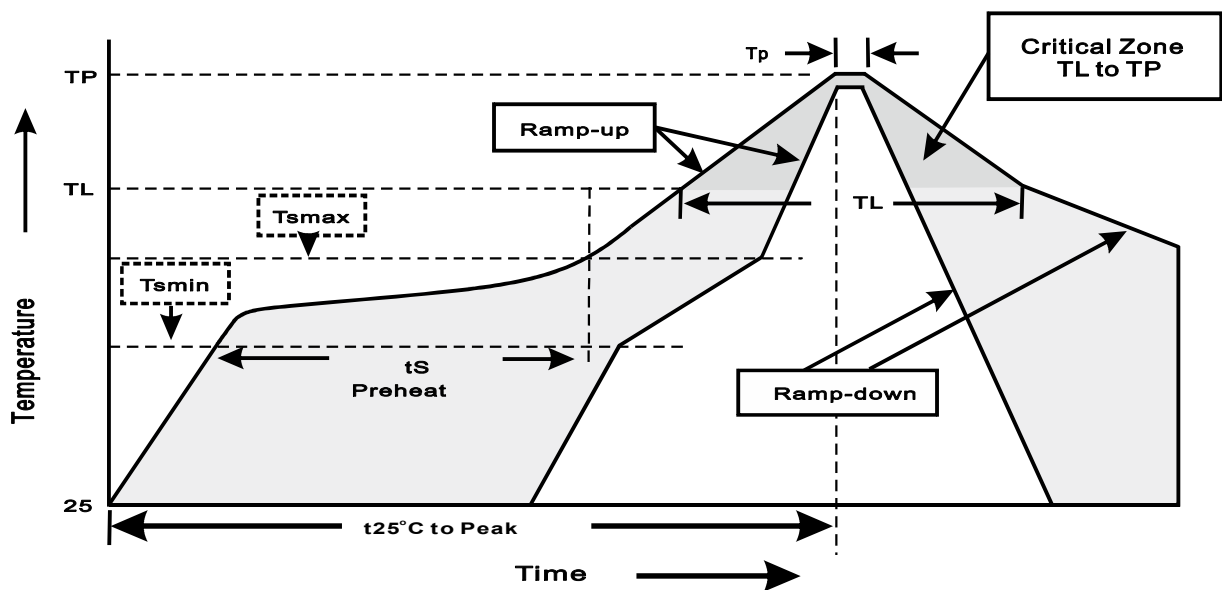
SL54-AFL Thru SL510-AFL

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	REEL DIA, (m/m)
SMA-FL	7"	3,000	4.0	178
	11"	7,500	4.0	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°C/sec
Preheat -Temperature Min(T _{Smin}) -Temperature Max(T _{Smax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{Smax} to T _L -Ramp-upRate	<3°C/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°C/sec
Time 25°C to Peak Temperature	<6minutes