

FM103-NFLT Thru FM105-NFLT

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FM103-NFLT Thru FM105-NFLT

1.0A Surface Mount General Purpose Rectifiers 200V ~ 600V

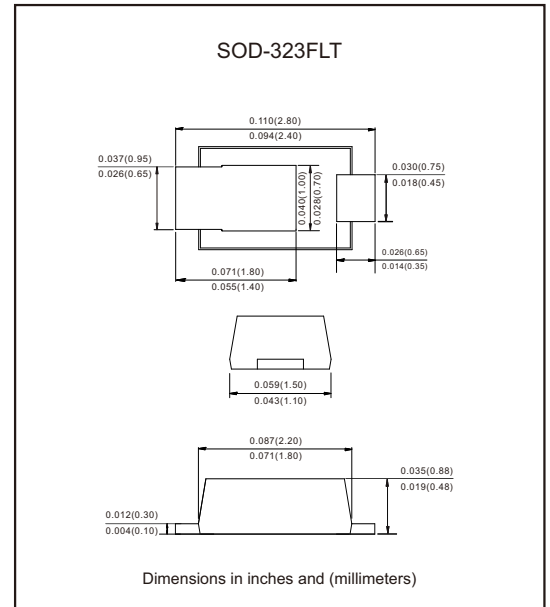
Features

- Planar passivated chips.
- Ultra low leakage reverse current.
- High temperature performance.
- High surge current capability.
- Lead free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. FM103-NFLT-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic, SOD-323FLT .
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline



Maximum ratings (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Rating			Unit
		FM103-NFLT	FM104-NFLT	FM105-NFLT	
Peak repetitive reverse voltage	V_{RRM}	200	400	600	V
RMS reverse voltage	V_{RMS}	140	280	420	V
DC blocking voltage	V_{DC}	200	400	600	V
Average forward output current	$I_{F(AV)}$	1.0			A
Peak forward surge current, 8.3ms single half sine wave	I_{FSM}	20			A
Thermal resistance, Junction to ambient (Note 1)	$R_{\theta JA}$	88			/W
Thermal resistance, Junction to case (Note 1)	$R_{\theta JC}$	35			/W
Thermal resistance, Junction to lead (Note 1)	$R_{\theta JL}$	22			/W
Operating junction temperature range	T_J	-55 ~ +150			
Storage temperature range	T_{STG}	-55 ~ +150			

Note: 1. Device mounted on p.c.b. with 2.2cm * 1.7 cm * 1mm copper pad area.

Electrical characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Instantaneous forward voltage	$I_F = 1.0A$	V_F			1.1	V
Reverse current	Rated V_R @ $T_A = 25^\circ\text{C}$	I_R			2.0	μA
	Rated V_R @ $T_A = 125^\circ\text{C}$				50.0	

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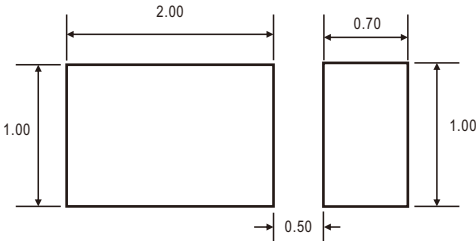
Pinning information

Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Anode		

Marking

Type Number	Marking Code
FM103-NFLT	S1D
FM104-NFLT	S1G
FM105-NFLT	S1J

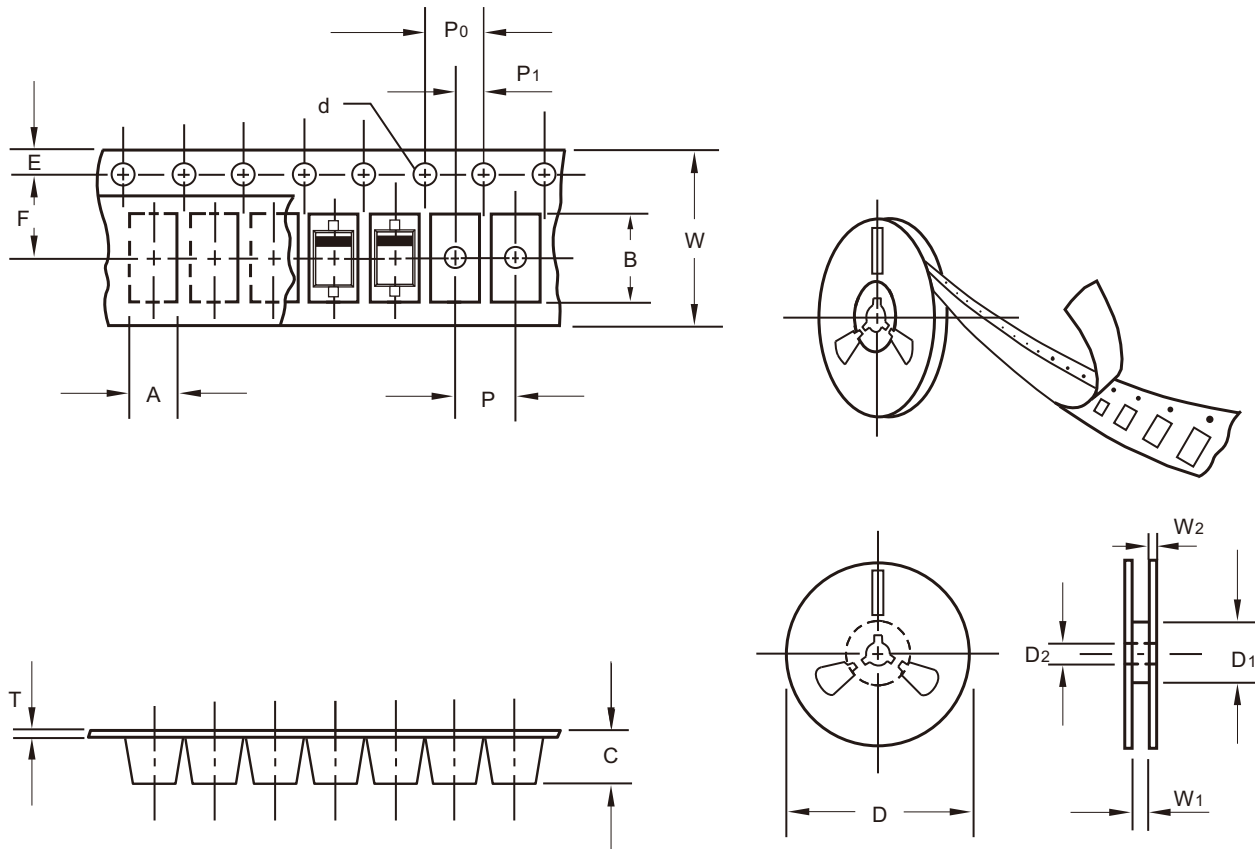
Suggested solder pad layout



Dimensions in millimeters

FM103-NFLT Thru FM105-NFLT

Packing information



unit:mm

Item	Symbol	Tolerance	SOD-323FLT
Carrier width	A	0.1	1.46
Carrier length	B	0.1	3.3
Carrier depth	C	0.1	1.2
Sprocket hole	d	0.1	1.5
13" Reel outside diameter	D	-	-
13" Reel inner diameter	D ₁	-	-
7" Reel outside diameter	D	2.0	178.0
7" Reel inner diameter	D ₁	0.5	54.0
Feed hole diameter	D ₂	0.5	13.0
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.5
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
Carrier thickness	T	0.05	0.25
Tape width	W	0.1	8.0
Reel width	W ₁	1.0	9.5
Reel width	W ₂	0.2	1.5

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

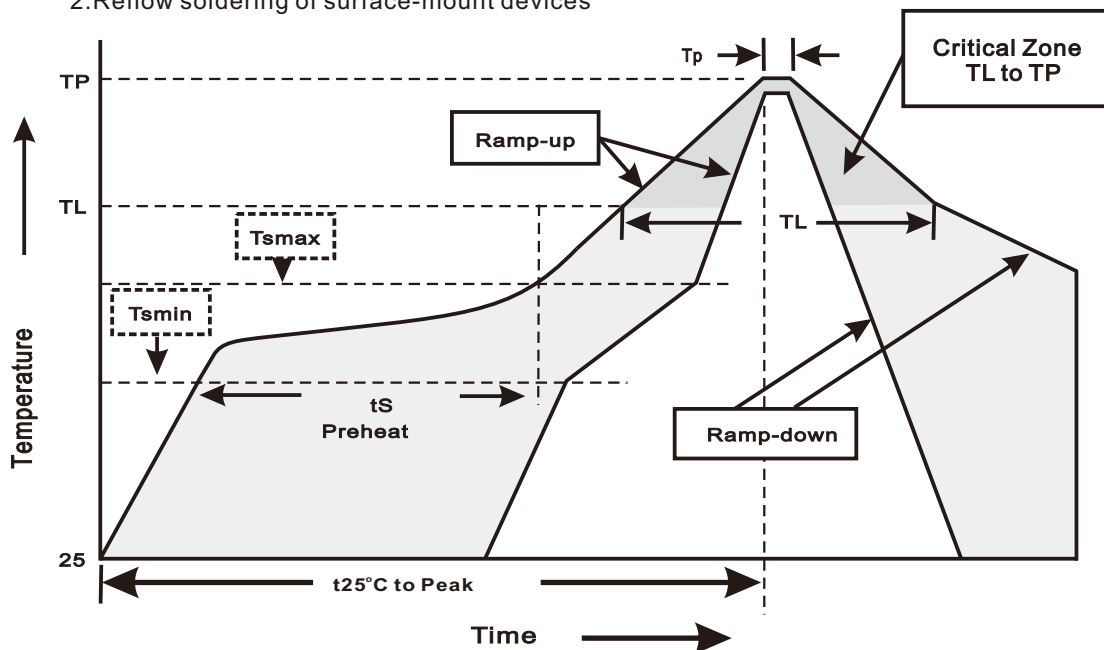
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	BOX (pcs)	REEL DIA, (m/m)	CARTON (pcs)
SOD-323FLT	7"	4,000	60,000	178	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°C/sec
Preheat -Temperature Min(T _{smmin}) -Temperature Max(T _{smmax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smmax} 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