FM320-BF THRU FM3200-BF

List

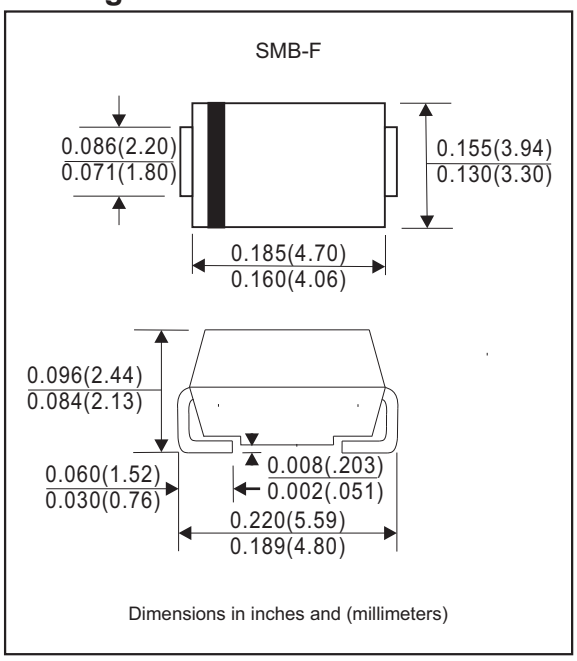
FM320-BF THRU FM3200-BF

3.0A Surface Mount Schottky Barrier Rectifiers 20V-200V

Features

- Guardring die construction
- Low profile Package
- Low power losses,high efficiency operationy
- High current capability
- Low forward voltage drop
- Lead-free parts meet RoHS requirements
- Suffix "-H" indicates Halogen-free parts, ex. FM320-BF-H

Package outline



Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AA / SMB-F
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.109gram

Maximum ratings (AT T_A=25°C unless otherwise noted)

PARAMETER	SYMBOLS	FM320-BF	FM340-BF	FM360-BF	FM380-BF	FM3100-BF	FM3150-BF	FM3200-BF	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 continuous reverse voltage	V_R	20	40	60	80	100	150	200	V
Maximum average forward rectified current	I_O	3.0							A
Non-repetitive peak forward surge current 8.3ms single half sine-wave	I_{FSM}	80							A
Operating junction temperature range	T_J	-55 to +150							°C
Storage temperature range	T_{STG}	-55 to +150							°C

Maximum Electrical characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER		SYMBOLS	FM320-BF	FM340-BF	FM360-BF	FM380-BF	FM3100-BF	FM3150-BF	FM3200-BF	UNIT
Forward voltage at I_F=3.0A		V_F	0.55		0.75	0.85		0.95		V
Reverse leakage current at rated V_R	T_A=25°C T_A=125°C	I_R	0.5 50			0.1 10				mA

Thermal characteristics

PARAMETER	SYMBOLS	FM320-BF	FM340-BF	FM360-BF	FM380-BF	FM3100-BF	FM3150-BF	FM3200-BF	UNIT
Typical thermal resistance junction to ambient	$R_{\theta JA}$	85							°C/W

Rating and characteristic curves (FM320-BF THRU FM3200-BF)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

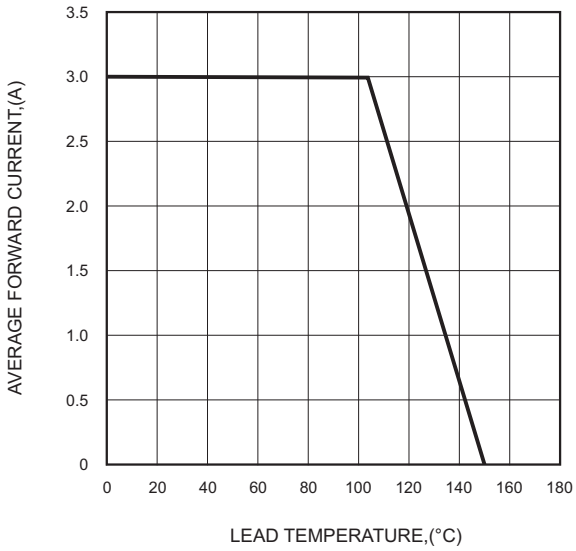


FIG.2-TYPICAL FORWARD CHARACTERISTICS

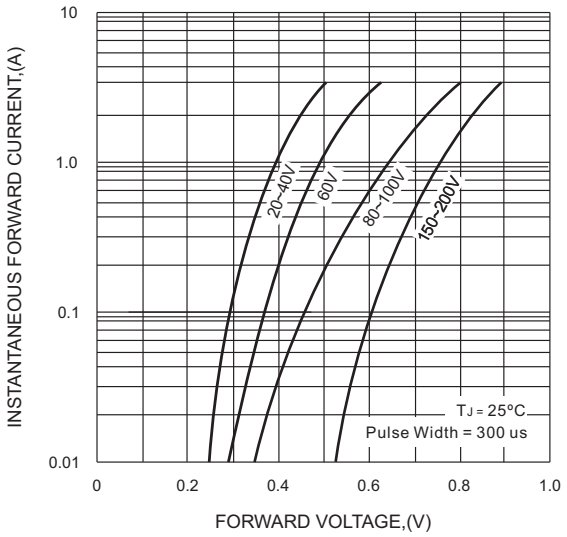


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

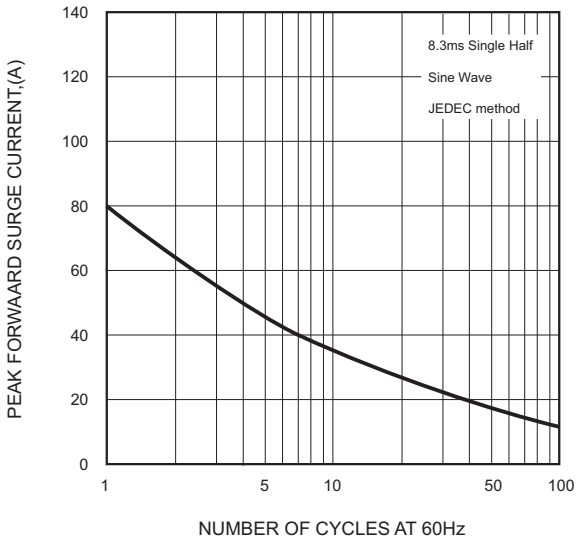
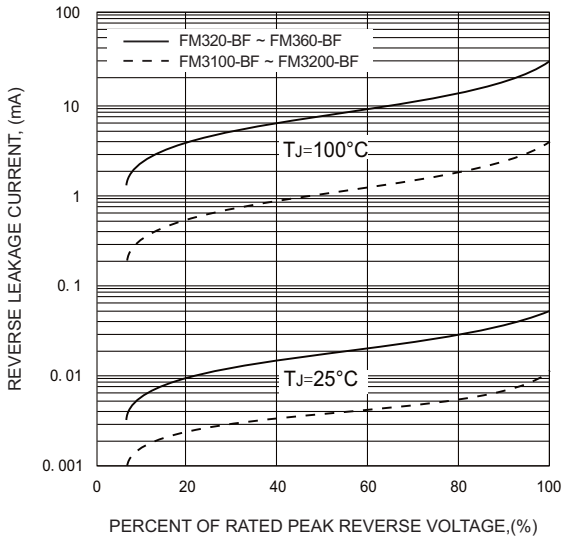


FIG.4-TYPICAL REVERSE CHARACTERISTICS



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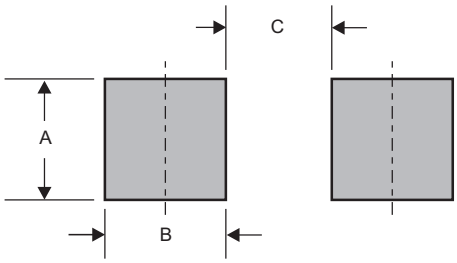
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
FM320-BF	SS32
FM340-BF	SS34
FM360-BF	SS36
FM380-BF	SS38
FM3100-BF	SS310
FM3150-BF	SS315,SS3150
FM3200-BF	SS320,SS3200

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMB-F	0.091 (2.30)	0.098 (2.50)	0.071(1.80)

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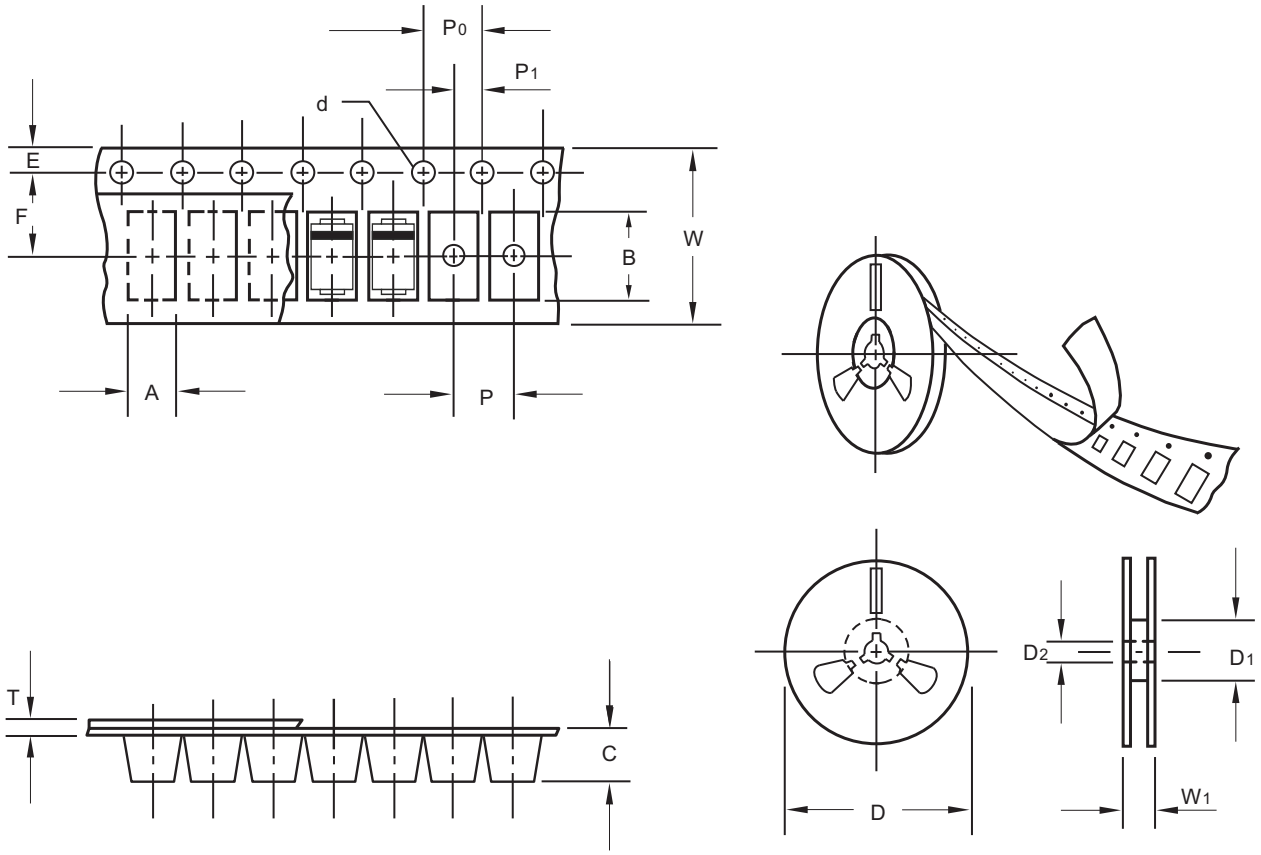
Packing information



unit:mm

Item	Symbol	Tolerance	SMB-F
Carrier width	A	0.15	3.86
Carrier length	B	0.1	5.65
Carrier depth	C	0.15	2.75
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D_1	min	50.00
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	5.50
Punch hole pitch	P	0.1	8.00
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	12.00
Reel width	W_1	1.0	18.00

Note:Devices are packed in accor dance with EIA standar RS-481-A and specifications listed above.

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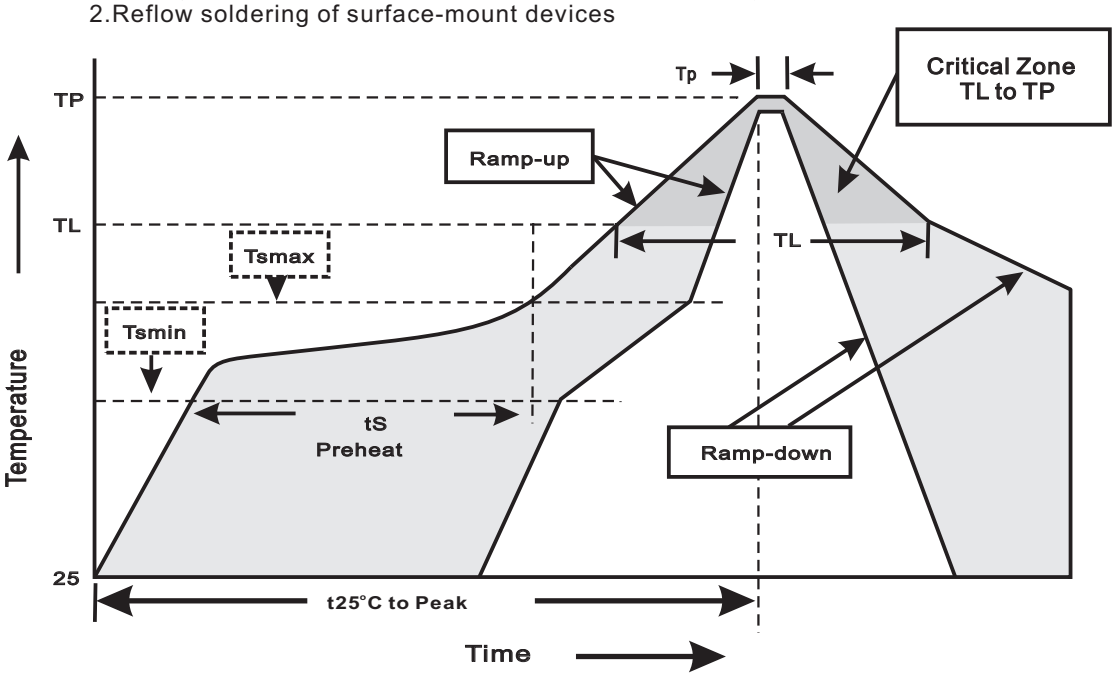
Reel packing

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)	APPROX. GROSS WEIGHT (kg)
SMB-F	13"	3,000	8.0	6,000	335*335*38	330	350*330*360	48,000	12.40

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(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax 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

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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec.	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	V_R=80% rate at T_J=125°C for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at T_A=25°C for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	T_A = 25°C, I_F = I_O On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	15P_{SIG} at T_A=121°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at T_A=85°C, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031