

FM340-BF-Q1 Thru FM3H200-BF-Q1

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FM340-BF-Q1 Thru FM3H200-BF-Q1

3.0A Surface Mount Schottky Barrier Rectifiers 40V~200V

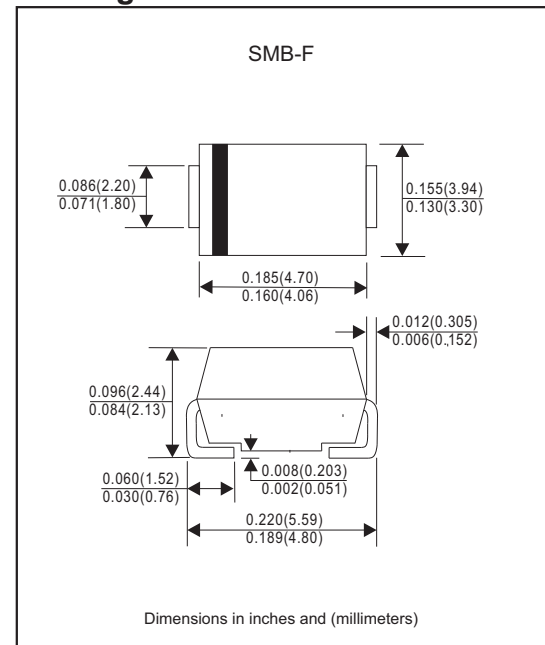
Features

- Low reverse leakage
- High forward surge current capability
- Built-in strain relief, ideal for automated placement
- Lead-free parts meet RoHS requirements
- Qualified to AEC-Q101 standards for high reliability
- Suffix "-H" indicates Halogen free parts, ex. FM340-BF-Q1-H

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 : 0.098 gram

Package outline



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

Parameter	Symbol	FM340 -BF-Q1	FM345 -BF-Q1	FM360 -BF-Q1	FM3H80 -BF-Q1	FM3H100 -BF-Q1	FM3H150 -BF-Q1	FM3H200 -BF-Q1	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	40	45	60	80	100	150	200	V
Maximum RMS voltage	V _{RMS}	28	31.5	42	56	70	105	140	V
Maximum continuous reverse voltage	V _R	40	45	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
Typical thermal resistance junction to ambient	R _{θJA}	60							°C/W
Operating junction temperature range	T _J	-55 to +150			-55 to +175				°C
Storage temperature range	T _{STG}	-55 to +150							°C

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

Parameter	Symbol	FM340 -BF-Q1	FM345 -BF-Q1	FM360 -BF-Q1	FM3H80 -BF-Q1	FM3H100 -BF-Q1	FM3H150 -BF-Q1	FM3H200 -BF-Q1	Unit
Maximum instantaneous forward voltage at I _F =3.0A	V _F	0.55		0.70	0.85		0.95		V
Maximum reverse leakage current at rated V _R T _j =25°C T _j =100°C	I _R	0.2			0.05				mA
		10			5				

Rating and characteristic curves

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

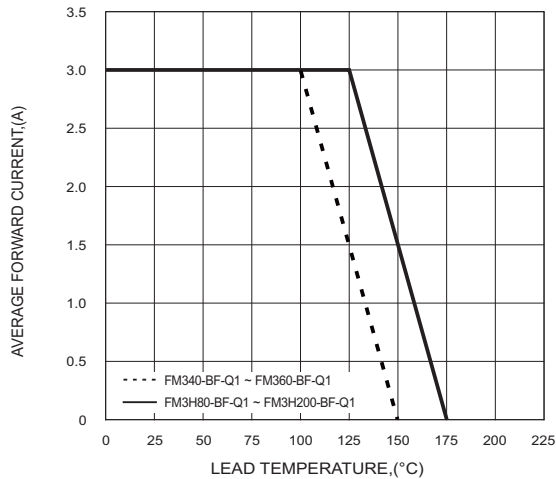


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

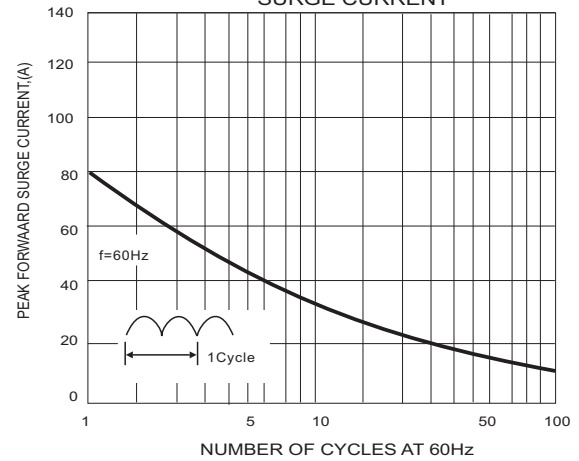


FIG.2-TYPICAL FORWARD CHARACTERISTICS

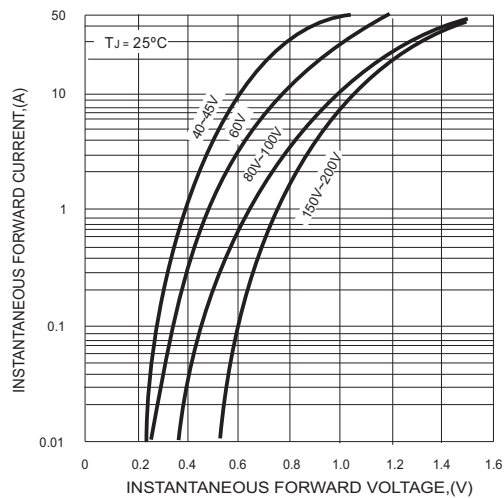
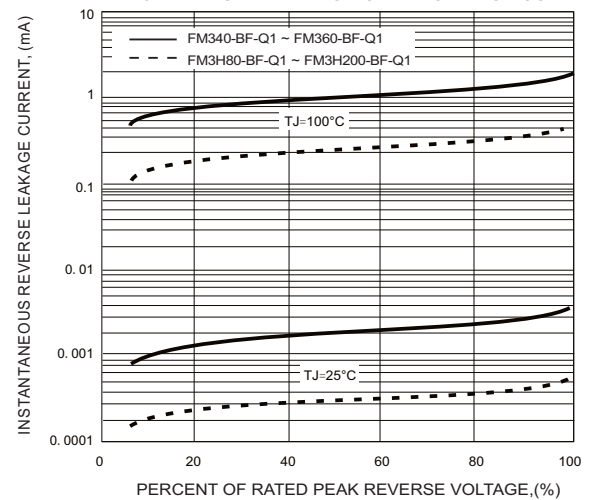


FIG.4-TYPICAL REVERSE CHARACTERISTICS

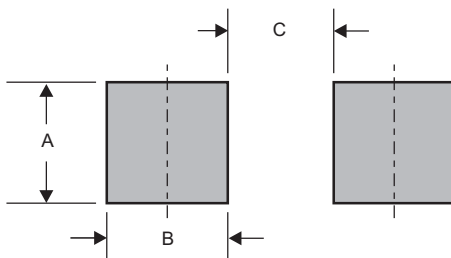


FM340-BF-Q1 Thru FM3H200-BF-Q1**Pinning information**

Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Anode		

Marking

Type number	Marking code
FM340-BF-Q1	SS34BV
FM345-BF-Q1	SS345BV
FM360-BF-Q1	SS36BV
FM3H80-BF-Q1	SS38BV
FM3H100-BF-Q1	SS310BV
FM3H150-BF-Q1	SS315BV
FM3H200-BF-Q1	SS320BV

Suggested solder pad layout

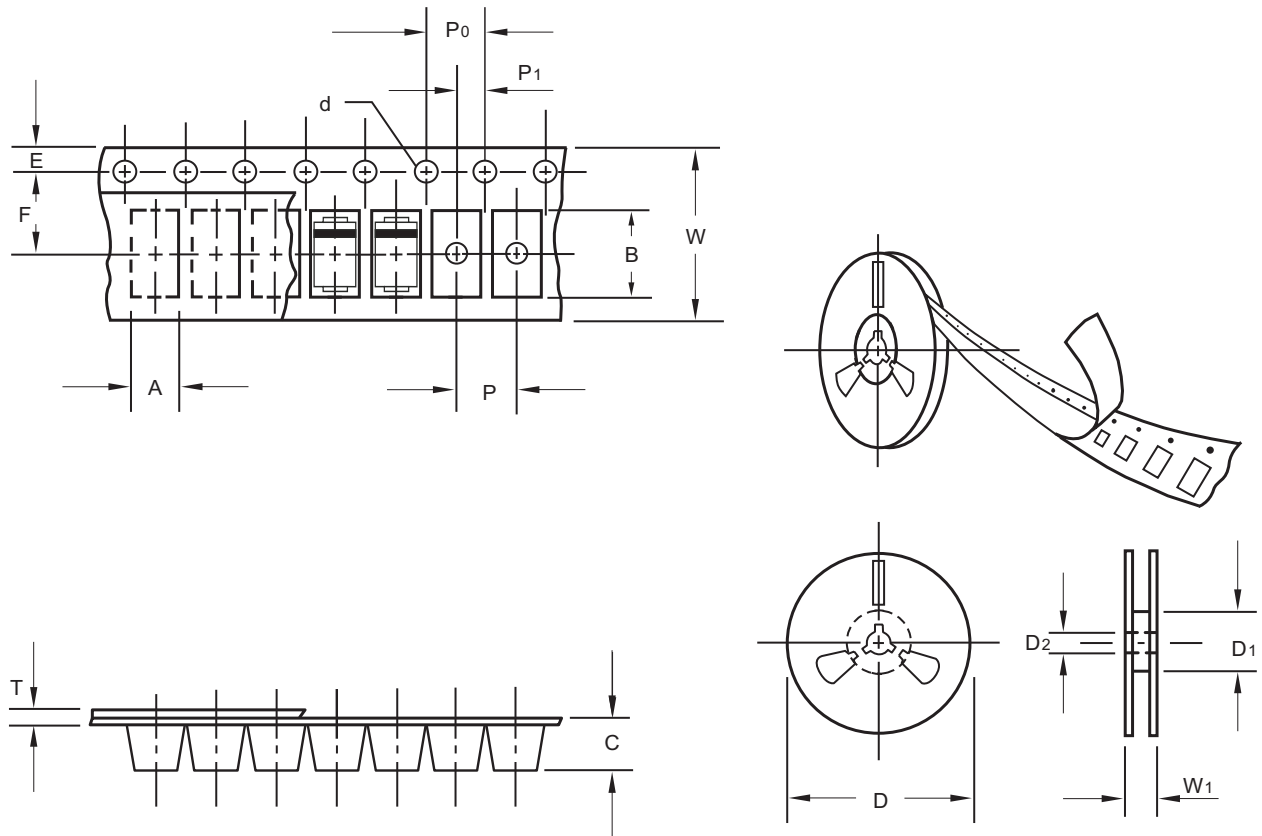
Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMB-F	0.091 (2.30)	0.098 (2.50)	0.083(2.10)

Formosa MS

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Packing information



unit:mm

Item	Symbol	Tolerance	SMB-F
Carrier width	A	0.1	3.80
Carrier length	B	0.1	5.40
Carrier depth	C	0.15	2.45
Sprocket hole	d	0.1	1.55
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D1	min	50.00
Feed hole diameter	D2	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	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	12.00
Reel width	W1	1.0	18.00

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

Formosa MS

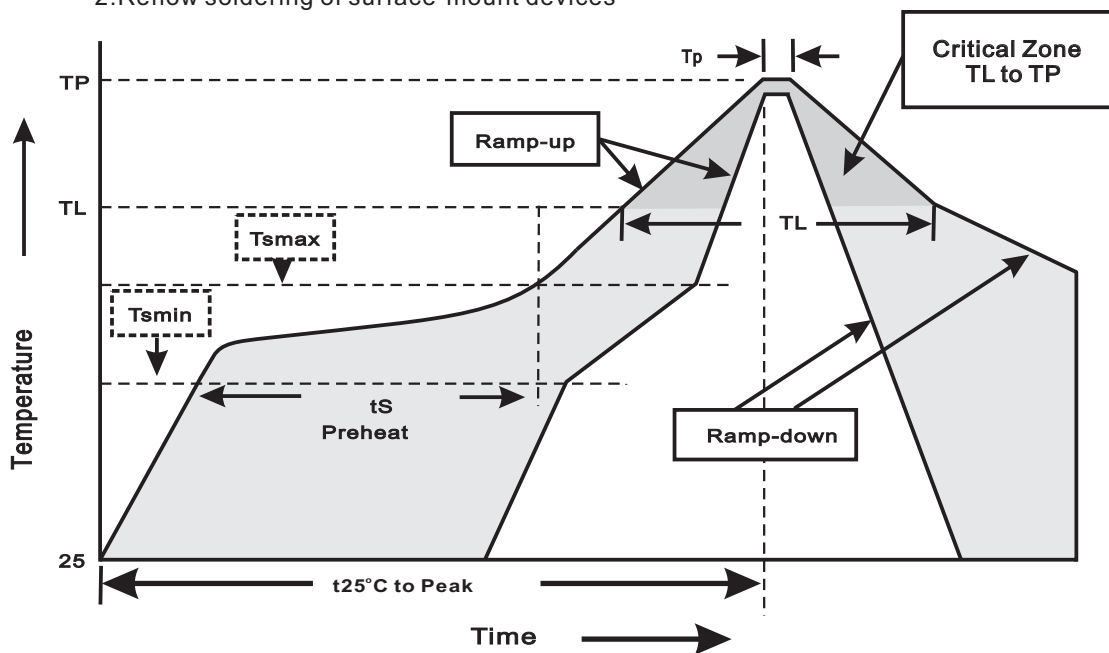
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Reel packing

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)
SMB-F	13"	3,000	8.0	6,000	335*335*38	330	350*330*360	48,000

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 _{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°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

FM340-BF-Q1 Thru FM3H200-BF-Q1**High reliability test capabilities**

Item Test	Conditions	Reference
1. MSL Preconditioning	24hr bake@125°C+168hrs@85°C /85%RH+3xIR@260°C+1flux immersion+alcohol+DI H2O rinse	JESD22-A113
2. Operation Life	Ta=25°C, Rated Current (Io=Io max.) Test Duration:1000hrs	MIL-STD-750E METHOD 1027.3
3. High Temperature Reverse Bias	80% Rated VR (Tj=Tj max.) Test Duration:1000hrs	JESD22-A108
4. High Temperature Storage Life	Ta=150°C Test Duration:1000hrs	JESD22 A-103
5. Temperature Cycle	-55°C(15min) to 150°C(15min) Test Cycles:1000cycles	JESD22 A-104
6. Autoclave	P=2atm Ta=121°C RH=100% Test Duration:96hrs	JESD22 A-102
7. Intermittent Operational Life	Ta=25°C, On/Io=Io max. 2min, Off/2min, Test Cycles:15000cycles	MIL-STD-750E METHOD 1037
8. Solderability	245±5°C for 5sec	J-STD-002
9. Moisture Resistance	Ta=85°C/85% Relative humidity Test Duration:1000hrs	MIL-STD-750E METHOD 1021.2
10. Resistance To Solder Heat	260±5°C for 10sec	JESD22 B-106
11. High Temperature High Humidity Reverse Bias	Ta=85°C, 85%RH, with device reverse biased at 80% of rated breakdown voltage up to a maximum of 100V or limit of chamber Test Duration:1000hrs	JESD22-A101