FM620 THRU FM6100

List

List.......... 1

Package outline.......... 2

Features.......... 2

Mechanical data.......... 2

Maximum ratings 2

Rating and characteristic curves.......... 3

Pinning information.......... 4

Marking.......... 4

Suggested solder pad layout.......... 4

Packing information.......... 5

Reel packing.......... 6

Suggested thermal profiles for soldering processes.......... 6

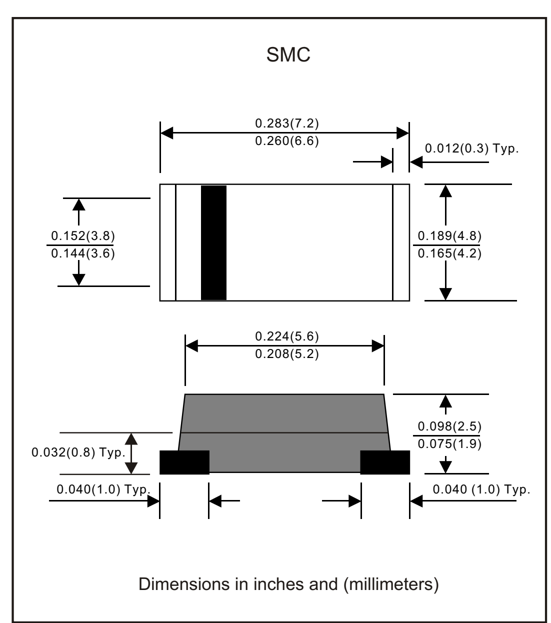
High reliability test capabilities.......... 7

Downloaded from Elcodis.com electronic components distributor

FM620 THRU FM6100

6.0A Surface Mount Schottky Barrier Rectifiers - 20V-100V

Package outline



Dimensions in inches and (millimeters)

Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low profile surface mounted application in order to optimize board space.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guardring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.19 gram

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

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_O			6.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}			75	A
Reverse current	V_R = V_{RRM} T_A = 25°C	I_R			0.5	mA
	V_R = V_{RRM} T_A = 125°C				20	
Thermal resistance	Junction to ambient	$R_{\theta JA}$		5		°C/W
Storage temperature		T_{STG}	-65		+175	°C

SYMBOLS	V_{RRM} *1 (V)	V_{RMS} *2 (V)	V_R *3 (V)	V_F *4 (V)	Operating temperature T_J, (°C)
FM620	20	14	20	0.55	-55 to +125
FM630	30	21	30		
FM640	40	28	40		
FM650	50	35	50	0.75	-55 to +150
FM660	60	42	60		
FM680	80	56	80	0.85	
FM6100	100	70	100		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage

http://www.formosams.com/
TEL:886-2-22696661
FAX:886-2-22696141

Document ID	Issued Date	RevisedDate	Revision	Page.
DS-121670	2008/02/10	-	A	7

Downloaded from Elcodis.com electronic components distributor

Rating and characteristic curves (FM620 THRU FM6100)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

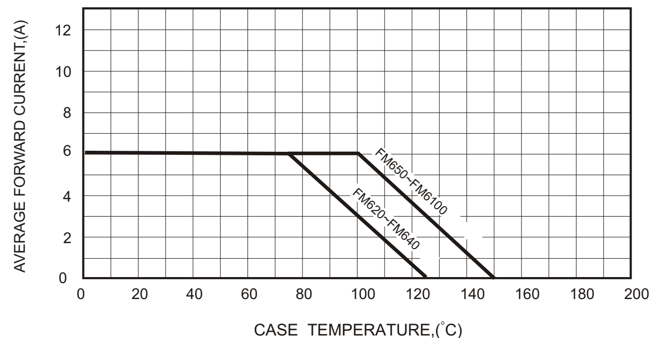


FIG.2-TYPICAL FORWARD CHARACTERISTICS

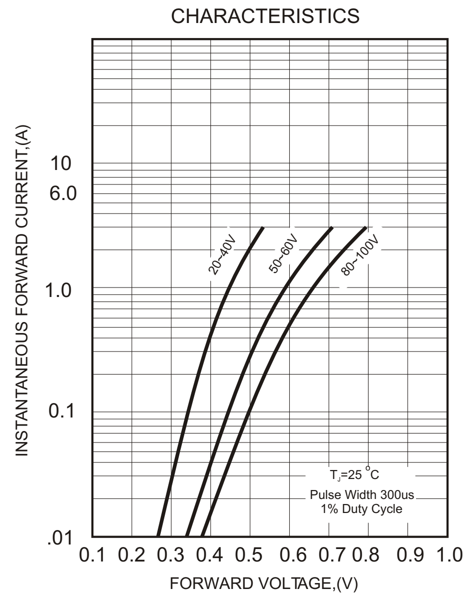


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

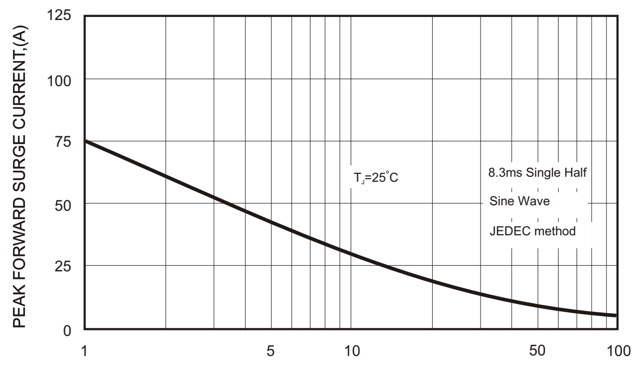
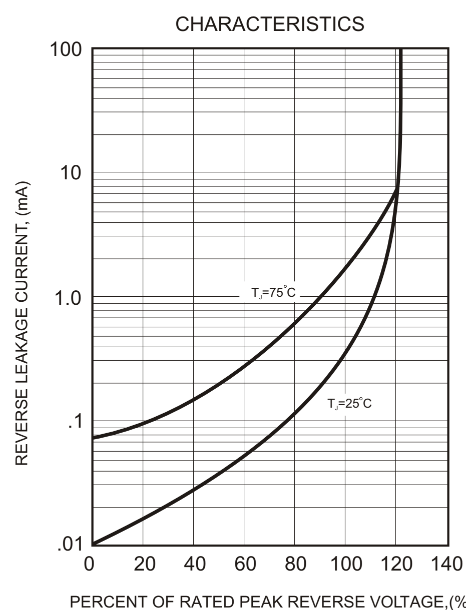


FIG.4 - TYPICAL REVERSE CHARACTERISTICS



Downloaded from Elcodis.com electronic components distributor

FM620 THRU FM6100

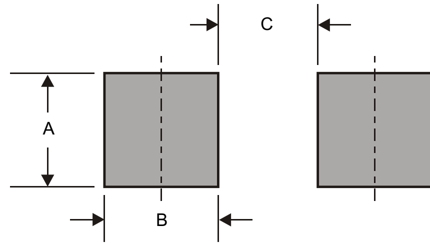
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1 [outline] 2	1 [symbol] 2

Marking

Type number	Marking code
FM620	SS62
FM630	SS63
FM640	SS64
FM650	SS65
FM660	SS66
FM680	SS68
FM6100	S610

Suggested solder pad layout



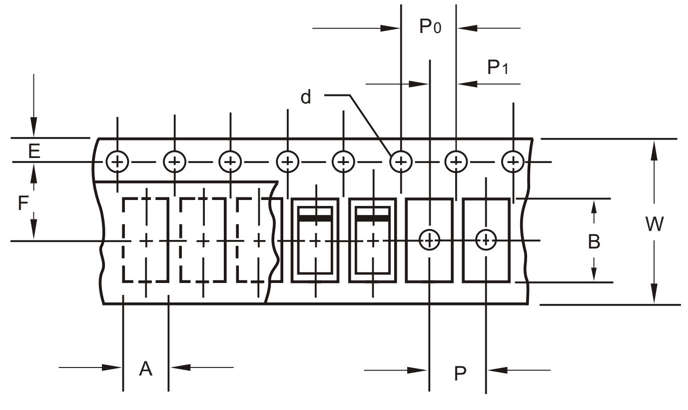
Dimensions in inches and (millimeters)

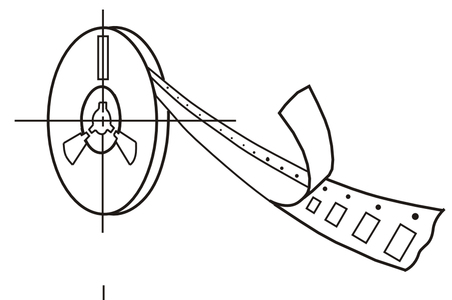
PACKAGE	A	B	C
SMC	0.189 (4.80)	0.063 (1.60)	0.181 (4.60)

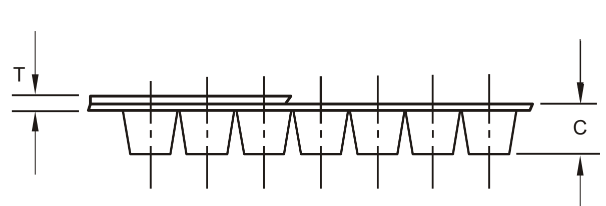
Downloaded from Elcodis.com electronic components distributor

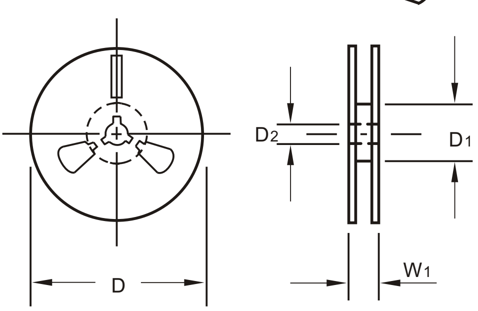
FM620 THRU FM6100

Packing information









unit:mm

Item	Symbol	Tolerance	SMC
Carrier width	A	0.1	5.10
Carrier length	B	0.1	7.20
Carrier depth	C	0.1	2.50
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	0.23
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.

Downloaded from Elcodis.com electronic components distributor

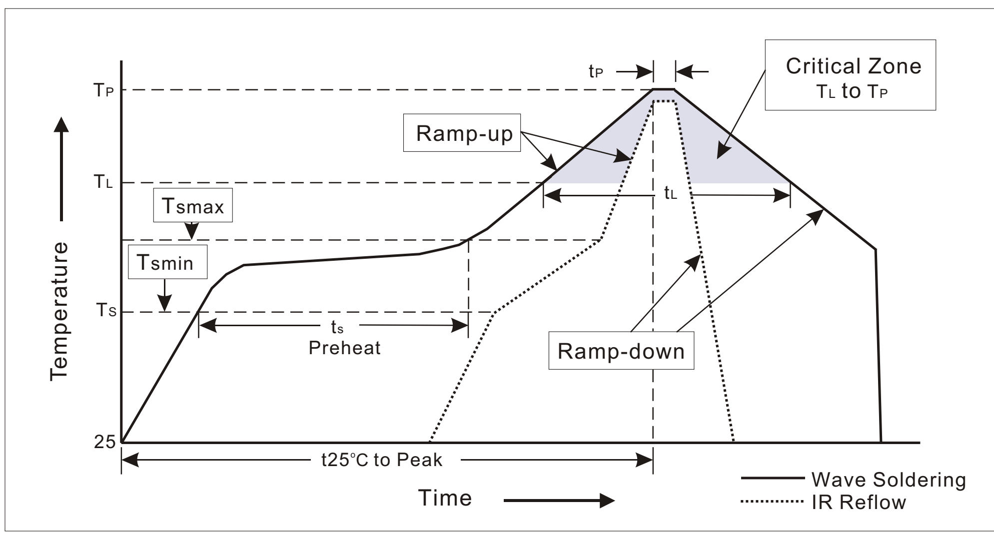
FM620 THRU FM6100

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)
SMC	13"	3000	8.0	6000	337*337*37	330	360*340*370	48,000	17.2

Suggested thermal profiles for soldering processes

1.Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2.Reflow soldering of surface-mount devices



3.Flow (wave)soldering (solder dipping)

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)	 100°C 150°C 60~120sec
Tsmax to T_L -Ramp-upRate	 <3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	 183°C 60~150sec
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

Downloaded from Elcodis.com electronic components distributor

FM620 THRU FM6100

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	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_A=125°C for 168 hrs.	MIL-STD-750D METHOD-1026
4. Forward Operation Life	Rated average rectifier current at T=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.	
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. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
9. Forward Surge	8.3ms single half sine-wave superimposed on rated load, one surge.	MIL-STD-750D METHOD-4066-2
10. Humidity	at T_A=65°C, RH=98% for 1000hrs.	MIL-STD-750D METHOD-1038
11. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031
12. Solvent Resistance	Dip into Freon at 25°C for 1 min.	MIL-STD-202F METHOD-215

Formosa MS
http://www.formosams.com/
TEL:886-2-22696661
FAX:886-2-22696141

Document ID	Issued Date	RevisedDate	Revision	Page.
DS-121670	2008/02/10	-	A	7

Downloaded from Elcodis.com electronic components distributor