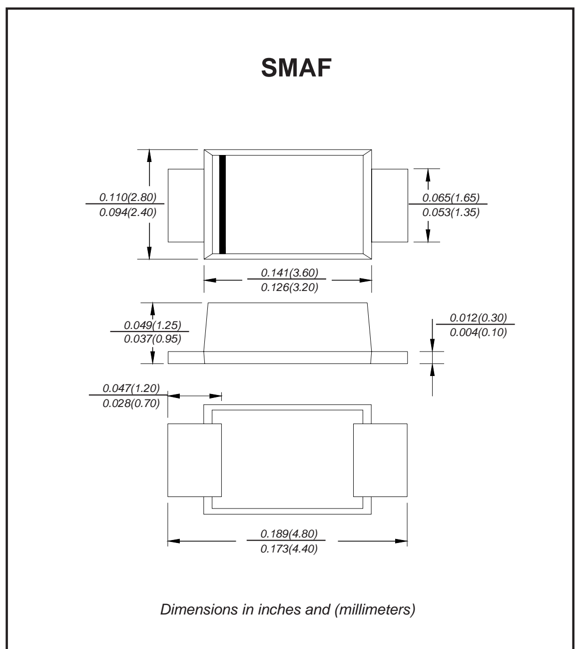
M1F THRU M7F

1.0A Surface Mount General Purpose Rectifiers - 50V-1000V

Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications
- Low reverse leakage
- Built-in strain relief,ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- Glass passivated chip junction
- Compliant to RoHS Directive 2011/65/EU
- Compliant to Halogen-free

Package outline



Mechanical data

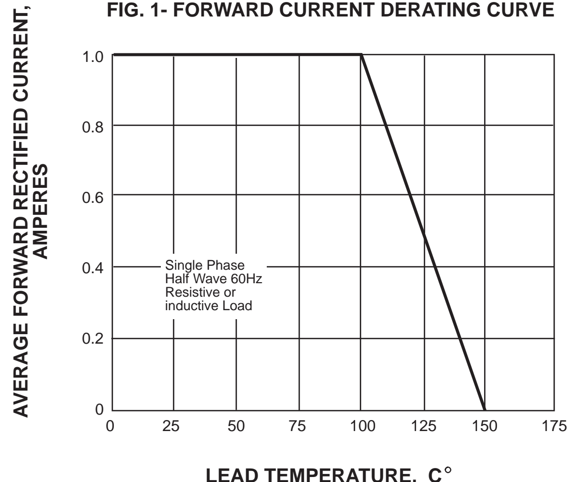
- **Case**: JEDEC SMAF molded plastic body
- **Terminals**: Solder plated, solderable per MIL-STD-750, Method 2026
- **Polarity**: Color band denotes cathode end
- **Mounting Position**: Any

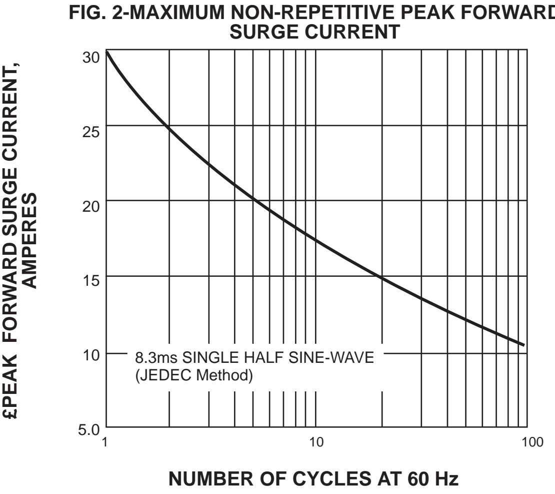
Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

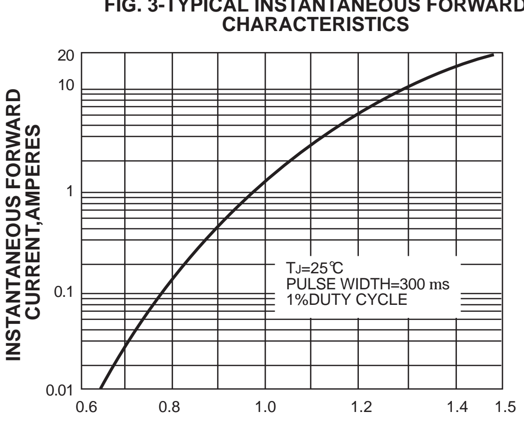
	SYMBOLS	M1F	M2F	M3F	M4F	M5F	M6F	M7F	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at T_L =110°C	$I_{(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30.0							A
Maximum instantaneous forward voltage at 1.0A	V_F	1.1							V
Maximum DC reverse current T_A=25°C at rated DC blocking voltage T_A=100°C	I_R	5.0 50.0							µA
Typical junction capacitance (NOTE 1)	C_J	15.0							pF
Typical thermal resistance (NOTE 2)	$R_{\theta JA}$	55.0							°C/W
Operating junction and storage temperature range	T_J,T_{STG}	-55 to +150							°C

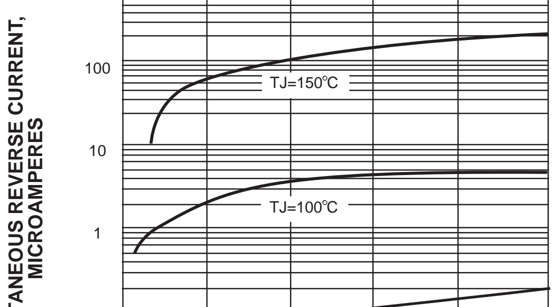
Note:1.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2.P.C.B. mounted with 0.2x0.2”(5.0x5.0mm) copper pad areas

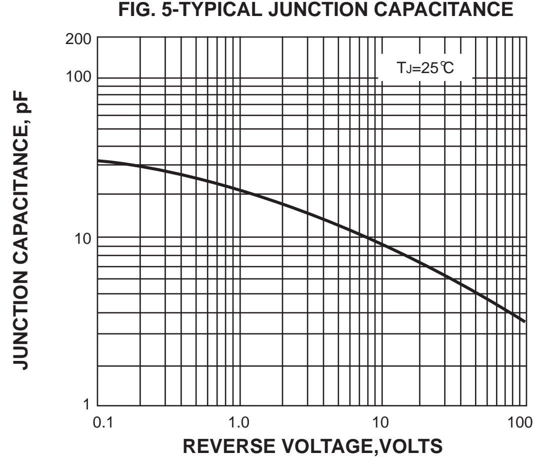
Rating and characteristic curves

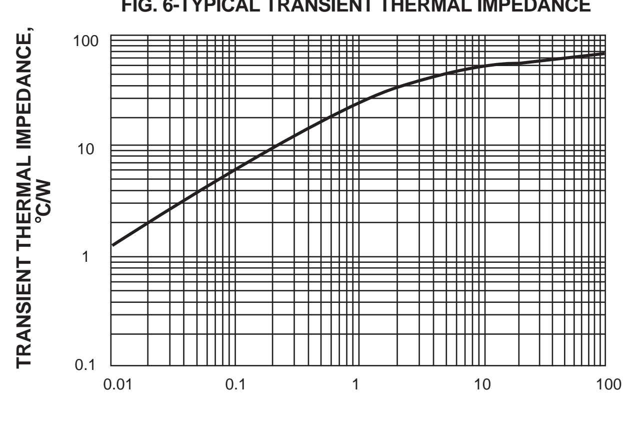












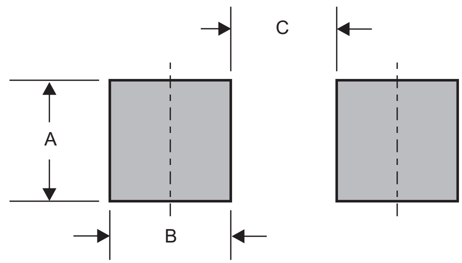
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1 2	1 2

Marking

Type number	Marking code	Example
M1F	M1	M7
M2F	M2	
M3F	M3	
M4F	M4	
M5F	M5	
M6F	M6	
M7F	M7	

Suggested solder pad layout

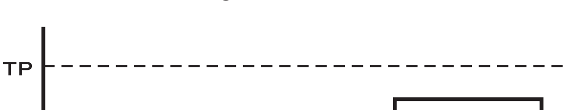


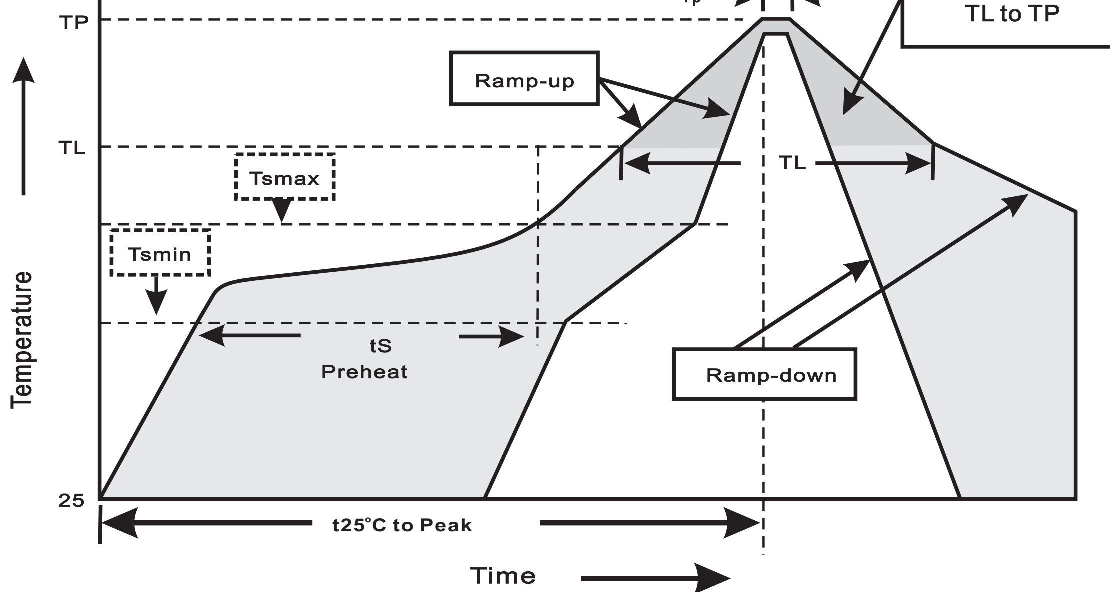
Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMAF	0.110 (2.80)	0.063 (1.60)	0.087 (2.20)

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