M1F THRU M7F

VOLTAGE RANGE **50 to 1000 Volts**
CURRENT **1.0 Ampere**

Features

SMAF

RoHS COMPLIANT

- Glass passivated chip
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering: 260℃/10S at terminals
- Component in accordance to ROHS 2002/95/1 and WEEE 2002/96/EC

Mechanical Data

- Case: JEDEC SMAFL mold plastic Body over glass passivated chip
- Terminals:Solder plated, solderable per J-STD-002B and JESD22-B102D
- Polarity: Laser band denote cathode band
- Weight: 0.00095ounce, 0.028grams

Maximum Ratings and Electrical Characteristics

- Ratings at 25℃ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

TYPE NUMBER		SYMBOLS	M1F	M2F	M3F	M4F	M5F	M6F	M7F	UNITS
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage		V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current		$I_{(AV)}$	1.0							Amps
Peak Forward Surge Current 8.3mS single half sine-wave superimposed on rated load (JEDEC method)		I_{FSM}	30							Amps
Maximum Instantaneous Forward Voltage at 1.0A		V_F	1.1							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_A = 25℃	I_R	5.0							μA
	T_A = 125℃		50							
Typical Junction Capacitance (NOTE 1)		C_J	9							pF
Typical Thermal Resistance (NOTE 2)		$R_{\theta JA}$	80							℃/W
Operating and Storage Temperature Range		T_J,T_{STG}	-55 to +150							℃

Notes:

1.Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.

2.Thermal Resistance from Junction to Ambient at. 2.0×2.0mm^2 copper pad areas.

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Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

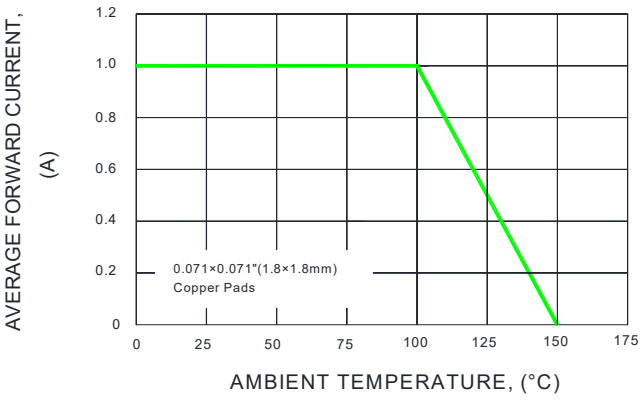


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

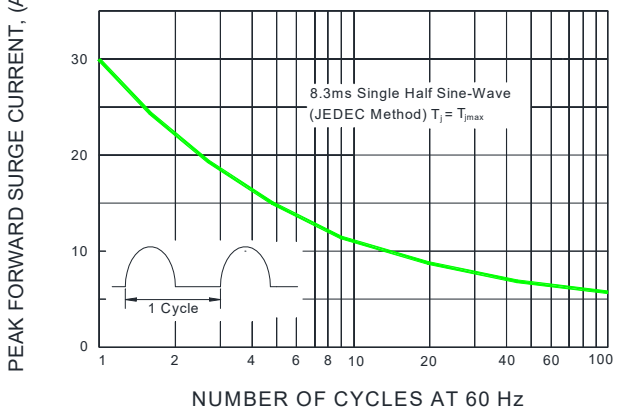


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

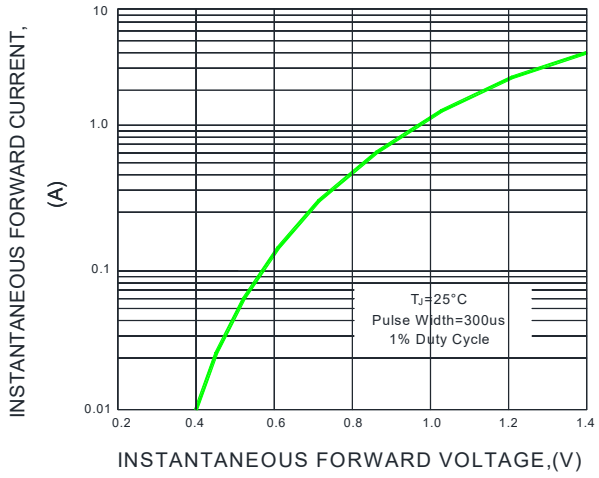


FIG.4-TYPICAL REVERSE CHARACTERISTICS

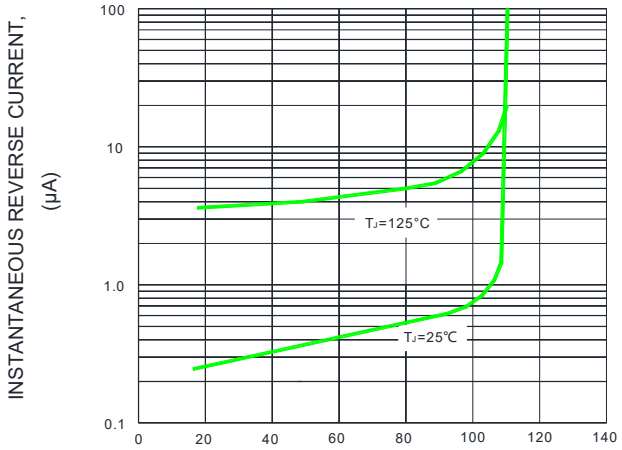
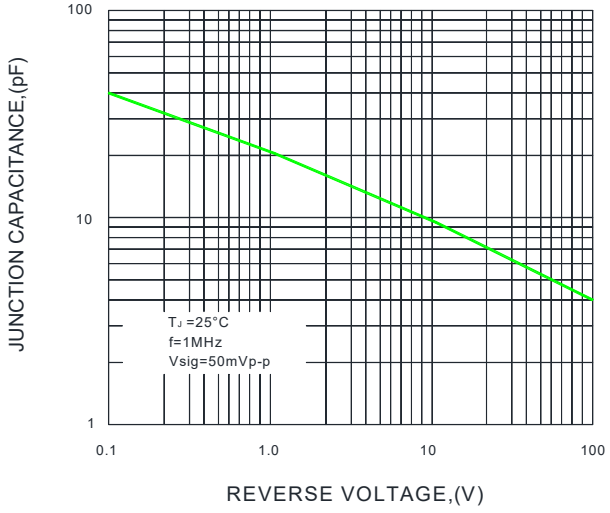


FIG.5-TYPICAL JUNCTION CAPACITANCE



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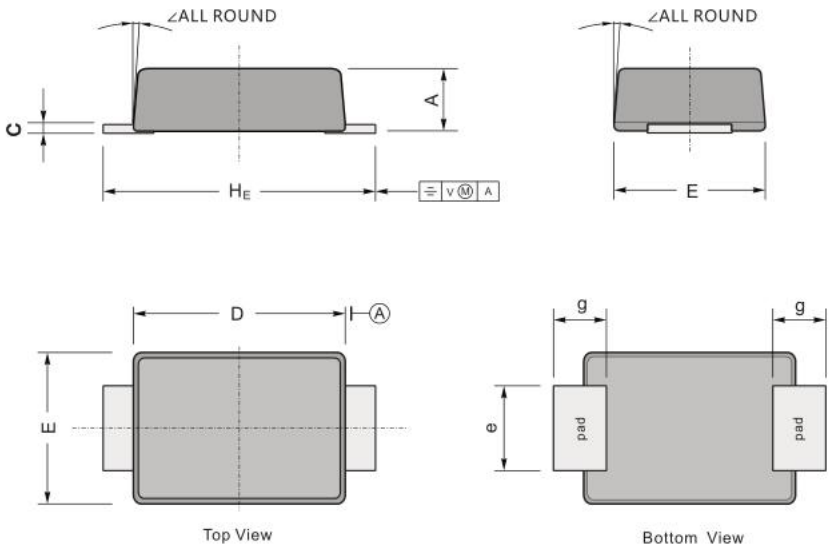
Package Outline Dimensions in inches (millimeters)



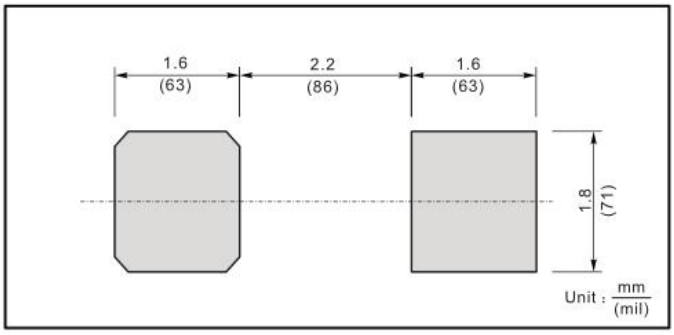
UNIT		A	C	D	E	e	g	H_E	∠
mm	max	1.10	0.20	3.70	2.70	1.60	1.20	4.90	5-7°
	min	0.90	0.12	3.30	2.40	1.30	0.80	4.40	
mil	max	43	7.90	146	106	63	47	193	
	min	35	4.70	130	94	51	31	173	

The Recommended Mounting Pad Size

Marking

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

The recommended mounting pad size



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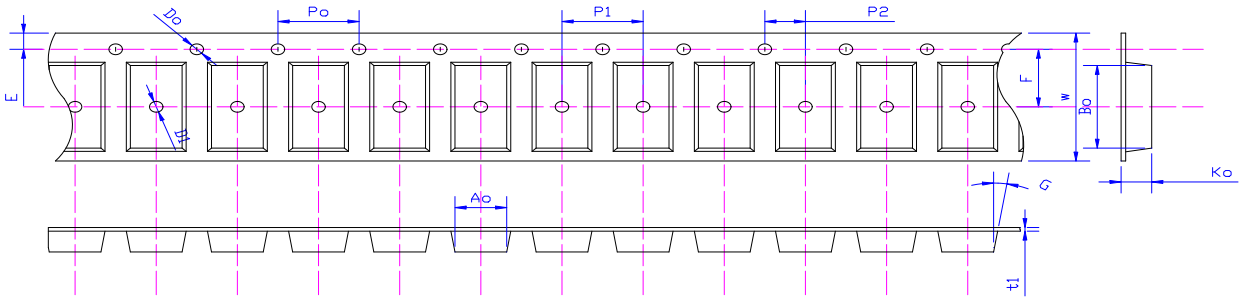
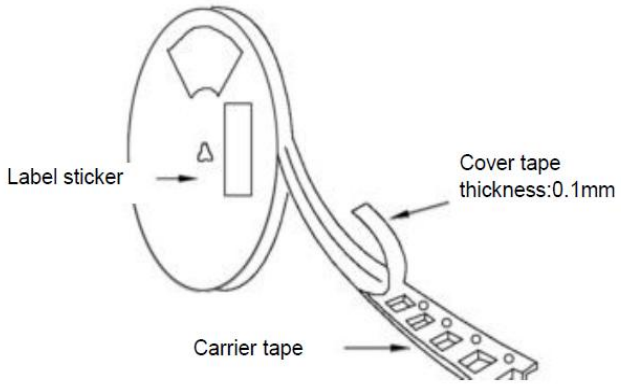
Packing Requirments

- PS black anti-static carrier tape packing



Specifications	Ao	Bo	Ko	Po	W	t1
SMAFL	2.83±0.10	4.90±0.10	1.45±0.10	4.00±0.1	12.0±0.05	0.23±0.02

- 13 "antistatic plastic reel



DEVICE TYPE	13" Reel			
	Q'TY/REEL(pcs)	REEL/BOX	BOX/CARTOON	Q'TY/CARTON(pcs)
SMAFL	10000	2	8	160000

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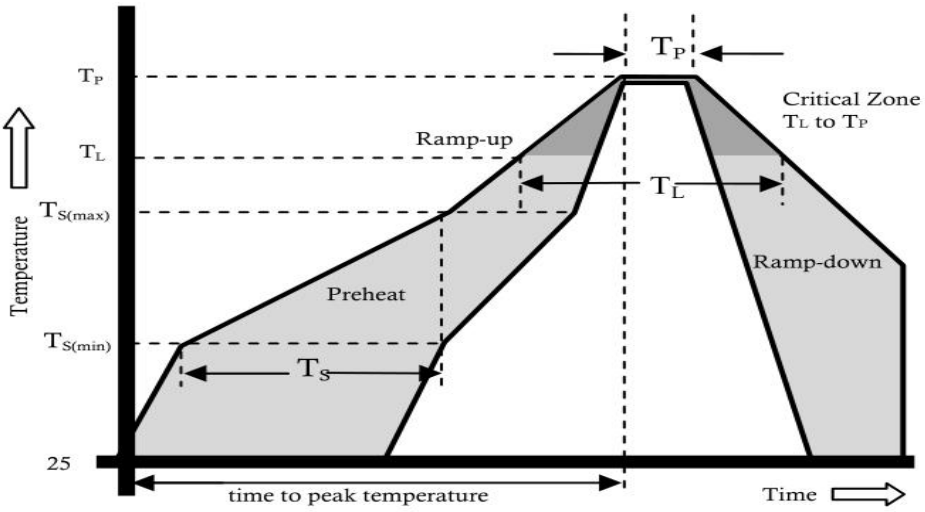
Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp(T_L) to peak)		3°C/sec. Max.
T_S(max) to T_L - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature (T_L)(Liquidus)	+217°C
	Temperature (T_L)	60-150 secs.
Peak Temp (T_P)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (T_P)		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (T_P)		8 min. Max.
Do not exceed		+260°C

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Disclaimer

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