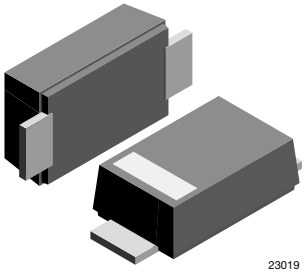
RS07B-M, RS07D-M, RS07G-M, RS07J-M, RS07K-M

Fast Rectifier Surface-Mount

eSMP® Series



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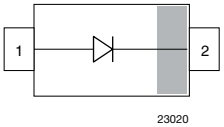

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SMF (DO-219AB)

FEATURES

AUTOMOTIVE GRADE Available

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Meets JESD 201 class 2 whisker test
- Wave and reflow solderable

RoHS COMPLIANT
HALOGEN FREE

- Base P/N-M3 - halogen-free, RoHS-compliant
- Base P/N-HM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified
- Compatible to SOD-123W package case outline or SOD-123F and SOD-123FL
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

LINKS TO ADDITIONAL RESOURCES

3D Models

MECHANICAL DATA

Case: SMF (DO-219AB)

Polarity: band denotes cathode end

Weight: approx. 15 mg

Packaging codes / options:
18/10K per 13" reel (8 mm tape)
08/3K per 7" reel (8 mm tape)

Circuit configuration: single

PARTS TABLE

PART	ORDERING CODE	MARKING	REMARKS
RS07B-M	RS07B-M3-18 or RS07B-M3-08	ZB	Tape and reel
	RS07B-HM3-18 or RS07B-HM3-08	TB	
RS07D-M	RS07D-M3-18 or RS07D-M3-08	ZD	Tape and reel
	RS07D-HM3-18 or RS07D-HM3-08	TD	
RS07G-M	RS07J-M3-18 or RS07J-M3-08	ZG	Tape and reel
	RS07G-HM3-18 or RS07G-HM3-08	TG	
RS07J-M	RS07J-M3-18 or RS07J-M3-08	ZJ	Tape and reel
	RS07J-HM3-18 or RS07J-HM3-08	TJ	
RS07K-M	RS07K-M3-18 or RS07K-M3-08	ZK	Tape and reel
	RS07K-HM3-18 or RS07K-HM3-08	TK	

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)					
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**VALUE**	**UNIT**
Maximum repetitive peak reverse voltage		RS07B-M	V_{RRM}	100	V
		RS07D-M	V_{RRM}	200	V
		RS07G-M	V_{RRM}	400	V
		RS07J-M	V_{RRM}	600	V
		RS07K-M	V_{RRM}	800	V
Maximum RMS voltage		RS07B-M	V_{RMS}	70	V
		RS07D-M	V_{RMS}	140	V
		RS07G-M	V_{RMS}	280	V
		RS07J-M	V_{RMS}	420	V
		RS07K-M	V_{RMS}	560	V
Maximum DC blocking voltage		RS07B-M	V_{DC}	100	V
		RS07D-M	V_{DC}	200	V
		RS07G-M	V_{DC}	400	V
		RS07J-M	V_{DC}	600	V
		RS07K-M	V_{DC}	800	V
Maximum average forward rectified current	T_L = 65 °C		$I_{F(AV)}$	1.4	A
	T_A = 45 °C		$I_{F(AV)}$	0.5	A
Peak forward surge current 8.3 ms half sine-wave	T_L = 25 °C		I_{FSM}	30	A

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Thermal resistance junction to lead		R_{thJL}	30	K/W
Thermal resistance junction to ambient air (1)		R_{thJA}	180	K/W
Operating junction and storage temperature range		T_j, T_{stg}	-55 to 150	°C

Note

(1) Mounted on epoxy glass PCB with 3 mm x 3 mm Cu pads (≥ 40 µm thick)

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Instantaneous forward voltage	I_F = 0.7 A (1)	RS07B-M	V_F			1.15	V
		RS07D-M	V_F			1.15	V
		RS07G-M	V_F			1.15	V
		RS07J-M	V_F			1.15	V
	I_F = 1 A (1)	RS07K-M	V_F			1.3	V
Maximum DC reverse current at rated DC blocking voltage	T_A = 25 °C	RS07B-M	I_R			10	µA
		RS07D-M	I_R			10	µA
		RS07G-M	I_R			10	µA
		RS07J-M	I_R			10	µA
		RS07K-M	I_R			2	µA
	T_A = 125 °C	RS07B-M	I_R			50	µA
		RS07D-M	I_R			50	µA
		RS07G-M	I_R			50	µA
		RS07J-M	I_R			50	µA
		RS07K-M	I_R			150	µA
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A	RS07B-M	t_{rr}			150	ns
		RS07D-M	t_{rr}			150	ns
		RS07G-M	t_{rr}			150	ns
		RS07J-M	t_{rr}			250	ns
		RS07K-M	t_{rr}			300	ns
Typical capacitance	4 V, 1 MHz	RS07B-M	C_j		9		pF
		RS07D-M	C_j		9		pF
		RS07G-M	C_j		9		pF
		RS07J-M	C_j		9		pF
		RS07K-M	C_j		4		pF

Note

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

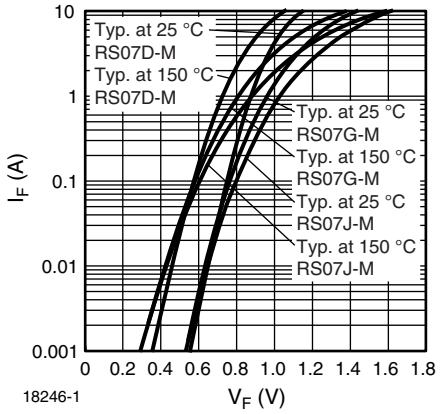


Fig. 1 - Typical Forward Characteristics

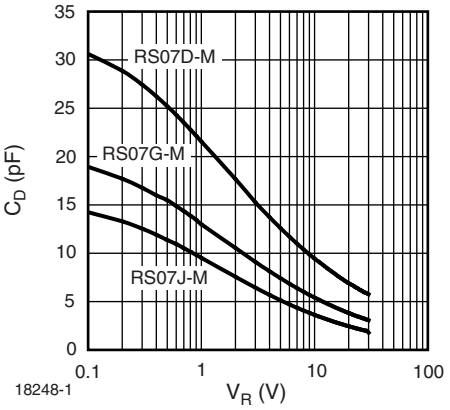


Fig. 4 - Typical Diode Capacitance vs. Reverse Voltage

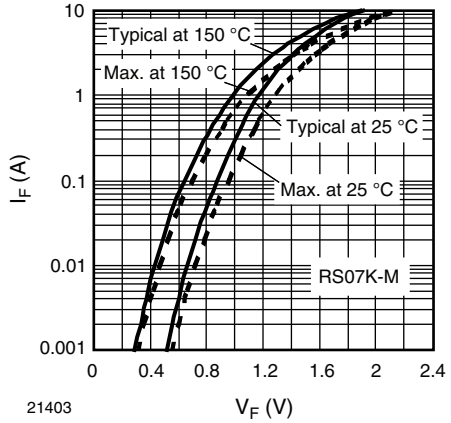


Fig. 2 - Typical Forward Characteristics

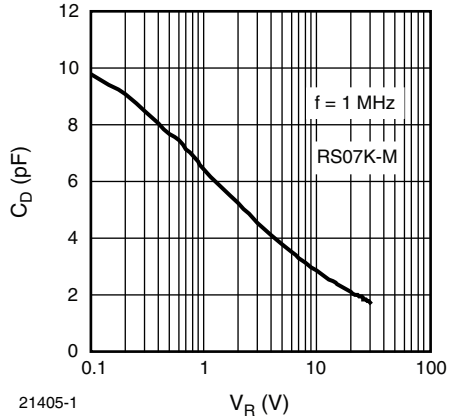


Fig. 5 - Typical Diode Capacitance vs. Reverse Voltage

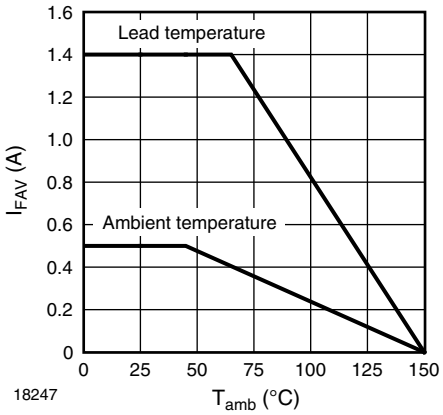


Fig. 3 - Forward Current Derating Curve

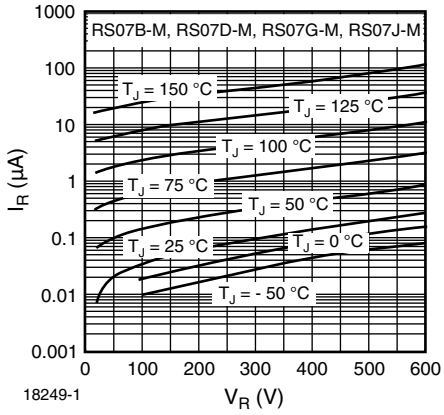


Fig. 6 - Typical Reverse Characteristics

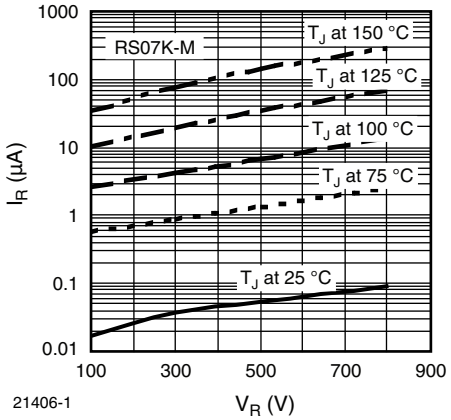
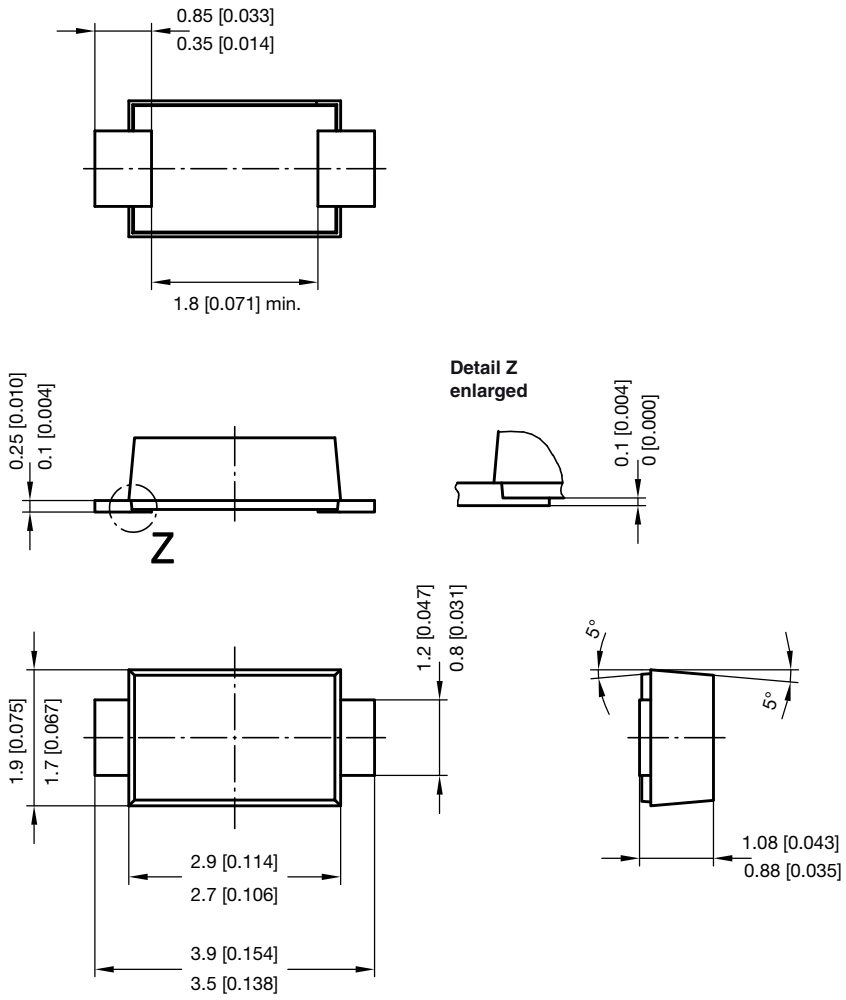


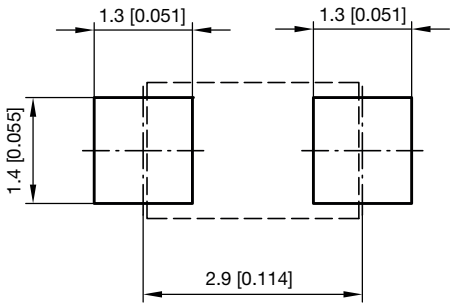
Fig. 7 - Typical Reverse Characteristics

PACKAGE DIMENSIONS in millimeters (inches): **SMF (DO-219AB)**



foot print recommendation:

Reflow soldering



Created - Date: 15. February 2005
Rev. 6 - Date: 24.Feb.2021
Document no.: S8-V-3915.01-001 (4)
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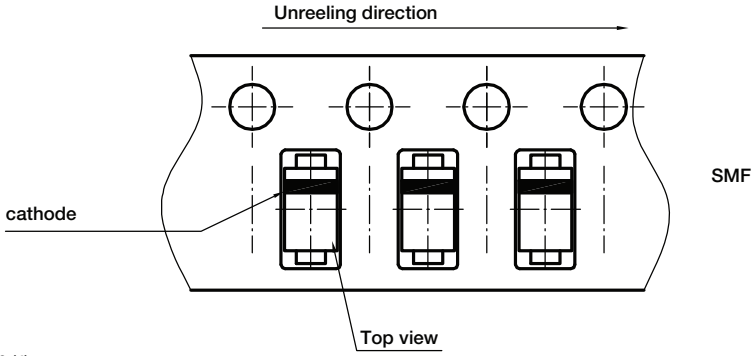
ORIENTATION IN CARRIER TAPE - SMF (DO-219AB)



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