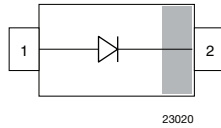
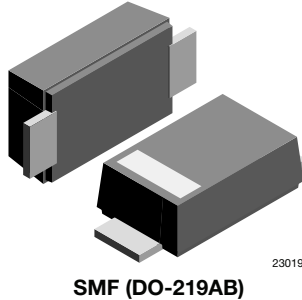


## Fast Rectifier Surface-Mount

### eSMP® Series



### LINKS TO ADDITIONAL RESOURCES



### FEATURES

- 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
- 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](http://www.vishay.com/doc?99912)



### 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	RS07G-M3-18 or RS07G-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 ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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	$T_L = 65\text{ }^{\circ}\text{C}$			$I_{F(AV)}$	1.4	A
	$T_A = 45\text{ }^{\circ}\text{C}$			$I_{F(AV)}$	0.5	A
Peak forward surge current 8.3 ms half sine-wave	$T_L = 25\text{ }^{\circ}\text{C}$			$I_{FSM}$	30	A

THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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 <sup>(1)</sup>		$R_{thJA}$	180	K/W
Operating junction and storage temperature range		$T_j, T_{stg}$	-55 to 150	$^{\circ}\text{C}$

**Note**

<sup>(1)</sup> Mounted on epoxy glass PCB with 3 mm x 3 mm Cu pads ( $\geq 40\text{ }\mu\text{m}$  thick)

ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)								
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Instantaneous forward voltage	$I_F = 0.7\text{ A}$ <sup>(1)</sup>	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	
		RS07K-M	$V_F$			1.3	V	
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$	RS07B-M	$I_R$			10	$\mu\text{A}$	
		RS07D-M	$I_R$			10	$\mu\text{A}$	
		RS07G-M	$I_R$			10	$\mu\text{A}$	
		RS07J-M	$I_R$			10	$\mu\text{A}$	
		RS07K-M	$I_R$			2	$\mu\text{A}$	
	$T_A = 125\text{ }^{\circ}\text{C}$	RS07B-M	$I_R$				50	$\mu\text{A}$
		RS07D-M	$I_R$				50	$\mu\text{A}$
		RS07G-M	$I_R$				50	$\mu\text{A}$
		RS07J-M	$I_R$				50	$\mu\text{A}$
		RS07K-M	$I_R$				150	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{rr} = 0.25\text{ A}$	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**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle



## TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

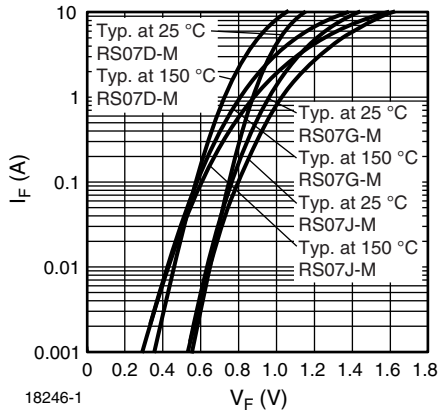


Fig. 1 - Typical Forward Characteristics

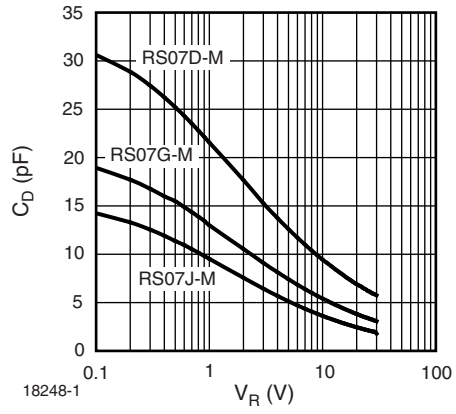


Fig. 4 - Typical Diode Capacitance vs. Reverse Voltage

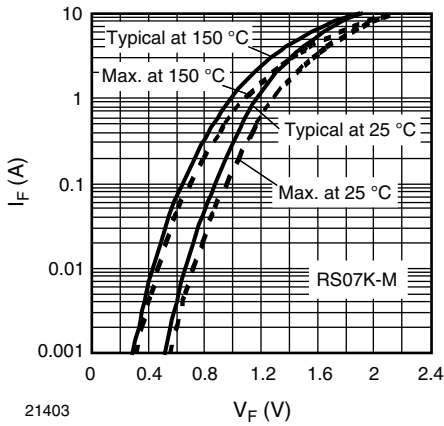


Fig. 2 - Typical Forward Characteristics

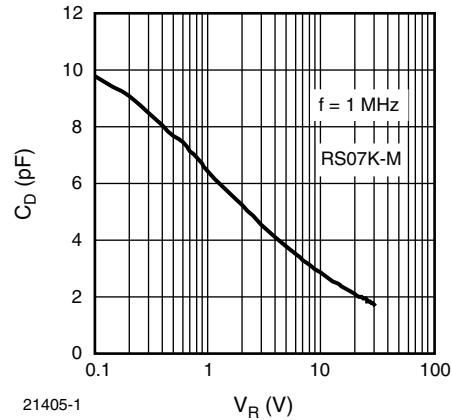


Fig. 5 - Typical Diode Capacitance vs. Reverse Voltage

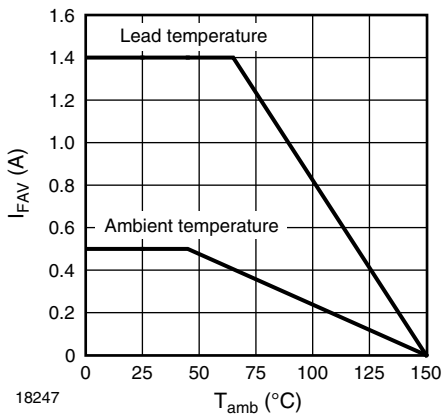


Fig. 3 - Forward Current Derating Curve

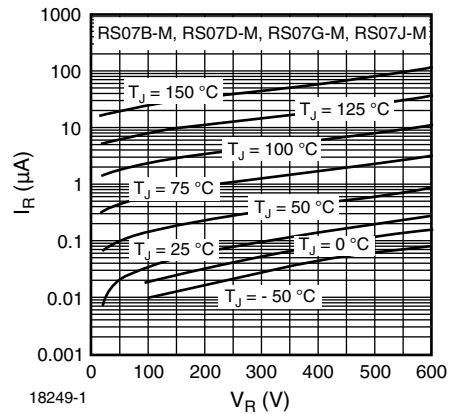


Fig. 6 - Typical Reverse Characteristics

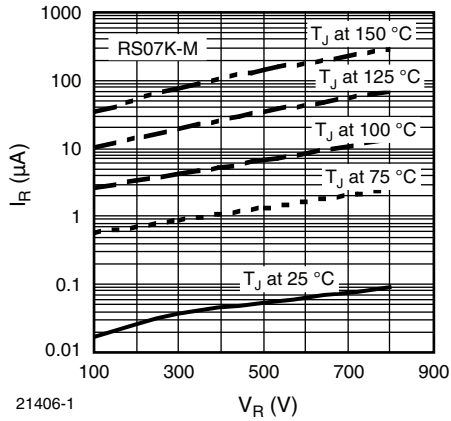
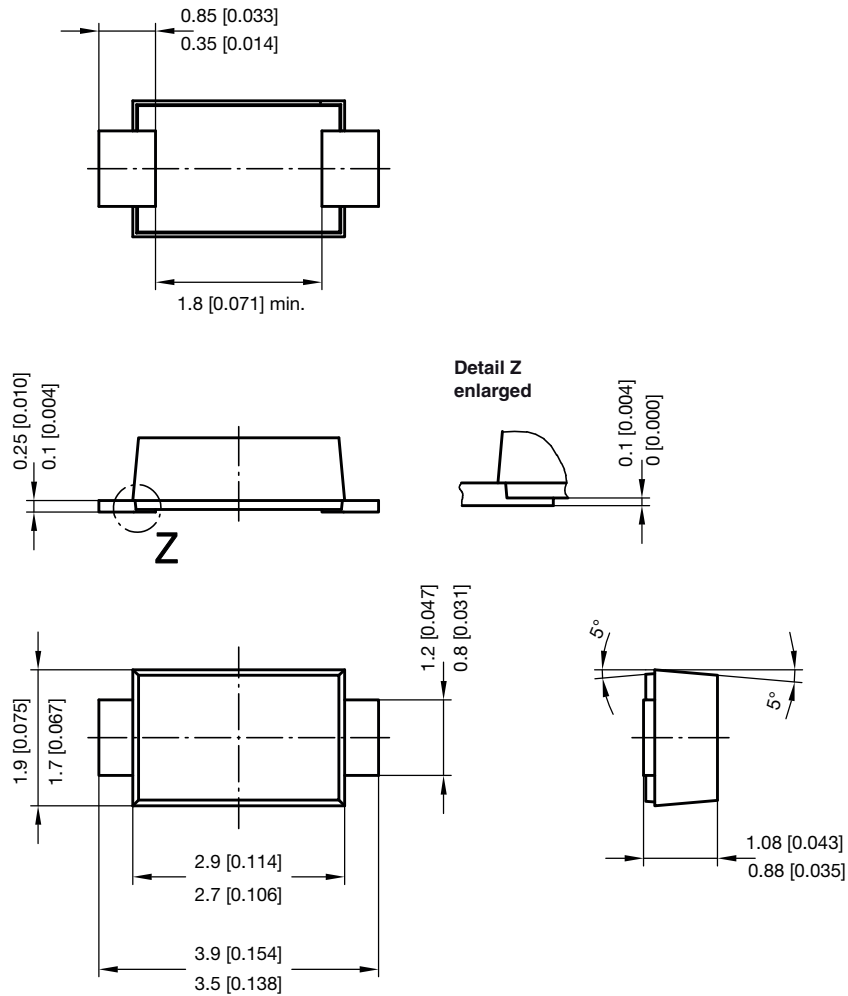


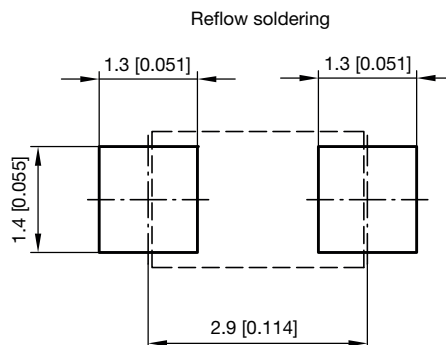
Fig. 7 - Typical Reverse Characteristics



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



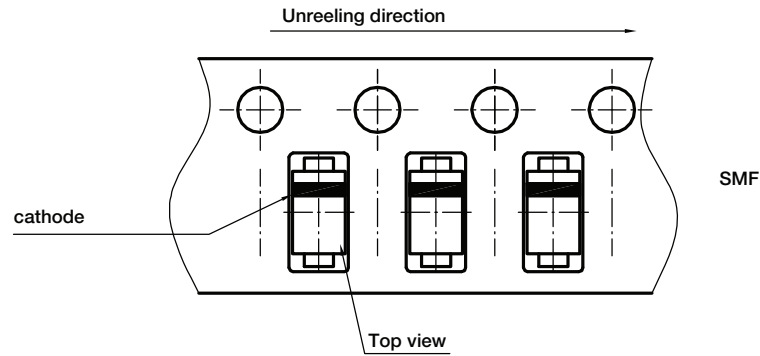
foot print recommendation:



Created - Date: 15. February 2005  
 Rev. 6 - Date: 24.Feb.2021  
 Document no.: S8-V-3915.01-001 (4)  
 22989



## ORIENTATION IN CARRIER TAPE - SMF (DO-219AB)



Document no.: S8-V-3717.02-003 (4)  
Created - Date: 09. Feb. 2010  
22670



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