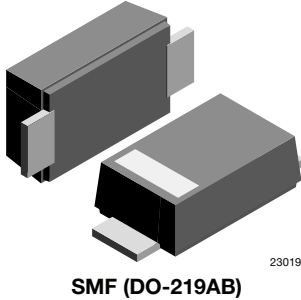


## Fast Rectifier Surface-Mount

### eSMP® Series



### 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
- 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)


**RoHS**  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

**Case:** SMF (DO-219AB)

**Polarity:** band denotes cathode end

**Weight:** approx. 15 mg

**Packaging codes / options:**

GS18/10K per 13" reel (8 mm tape)

GS08/3K per 7" reel (8 mm tape)

**Circuit configuration:** single

### PARTS TABLE

PART	ORDERING CODE	MARKING	REMARKS
RS07B	RS07B-GS18 or RS07B-GS08	RB	Tape and reel
RS07D	RS07D-GS18 or RS07D-GS08	RD	Tape and reel
RS07G	RS07G-GS18 or RS07G-GS08	RG	Tape and reel
RS07J	RS07J-GS18 or RS07J-GS08	RJ	Tape and reel
RS07K	RS07K-GS18 or RS07K-GS08	RK	Tape and reel

### 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	$V_{RRM}$	100	V
		RS07D	$V_{RRM}$	200	V
		RS07G	$V_{RRM}$	400	V
		RS07J	$V_{RRM}$	600	V
		RS07K	$V_{RRM}$	800	V
Maximum RMS voltage		RS07B	$V_{RMS}$	70	V
		RS07D	$V_{RMS}$	140	V
		RS07G	$V_{RMS}$	280	V
		RS07J	$V_{RMS}$	420	V
		RS07K	$V_{RMS}$	560	V
Maximum DC blocking voltage		RS07B	$V_{DC}$	100	V
		RS07D	$V_{DC}$	200	V
		RS07G	$V_{DC}$	400	V
		RS07J	$V_{DC}$	600	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 <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to lead		R <sub>thJL</sub>	30	K/W
Thermal resistance junction to ambient air <sup>(1)</sup>		R <sub>thJA</sub>	180	K/W
Operating junction and storage temperature range		T <sub>j</sub> , T <sub>stg</sub>	-55 to 150	°C

**Note**

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

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Instantaneous forward voltage	I <sub>F</sub> = 0.7 A <sup>(1)</sup>	RS07B	V <sub>F</sub>			1.15	V
		RS07D	V <sub>F</sub>			1.15	V
		RS07G	V <sub>F</sub>			1.15	V
		RS07J	V <sub>F</sub>			1.15	V
		RS07K	V <sub>F</sub>			1.3	V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	RS07B	I <sub>R</sub>			10	μA
		RS07D	I <sub>R</sub>			10	μA
		RS07G	I <sub>R</sub>			10	μA
		RS07J	I <sub>R</sub>			10	μA
		RS07K	I <sub>R</sub>			2	μA
	T <sub>A</sub> = 125 °C	RS07B	I <sub>R</sub>			50	μA
		RS07D	I <sub>R</sub>			50	μA
		RS07G	I <sub>R</sub>			50	μA
		RS07J	I <sub>R</sub>			50	μA
		RS07K	I <sub>R</sub>			150	μA
Reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1 A, I <sub>rr</sub> = 0.25 A	RS07B	t <sub>rr</sub>			150	ns
		RS07D	t <sub>rr</sub>			150	ns
		RS07G	t <sub>rr</sub>			150	ns
		RS07J	t <sub>rr</sub>			250	ns
		RS07K	t <sub>rr</sub>			300	ns
Typical capacitance	4 V, 1 MHz	RS07B	C <sub>j</sub>		9		pF
		RS07D	C <sub>j</sub>		9		pF
		RS07G	C <sub>j</sub>		9		pF
		RS07J	C <sub>j</sub>		9		pF
		RS07K	C <sub>j</sub>		4		pF

**Note**

<sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle

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

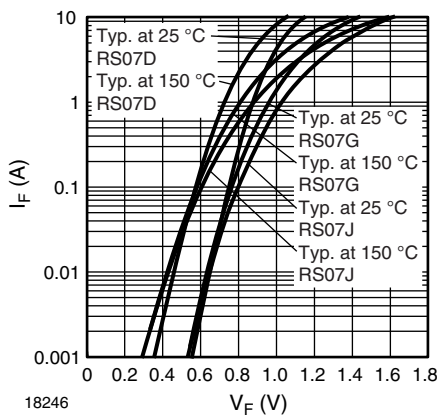


Fig. 1 - Typical Forward Characteristics

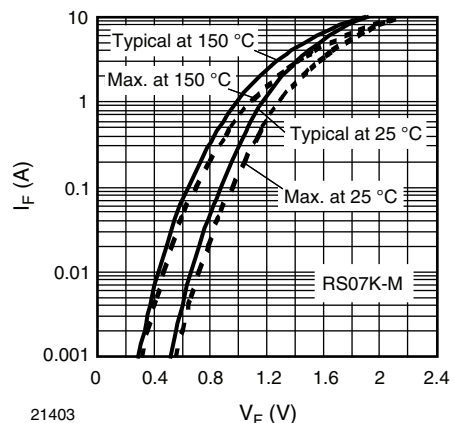


Fig. 2 - Typical Forward Characteristics

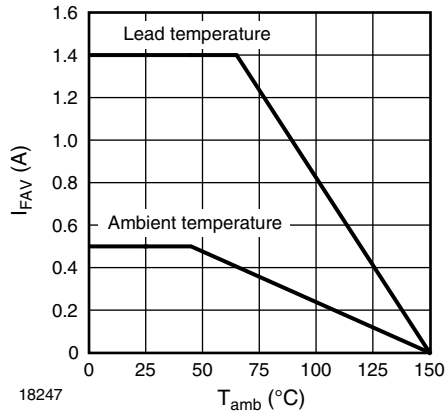


Fig. 3 - Forward Current Derating Curve

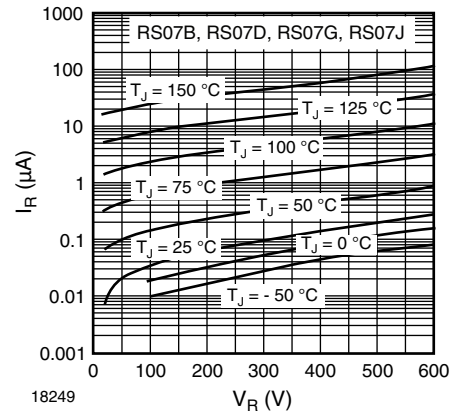


Fig. 6 - Typical Reverse Characteristics

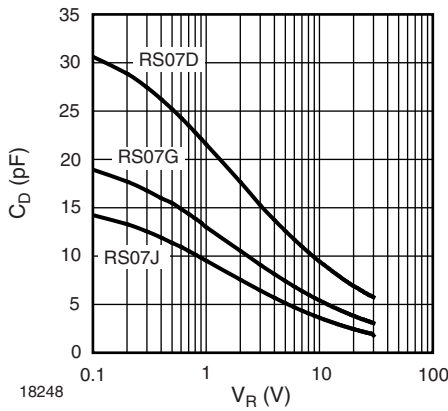


Fig. 4 - Typical Diode Capacitance vs. Reverse Voltage

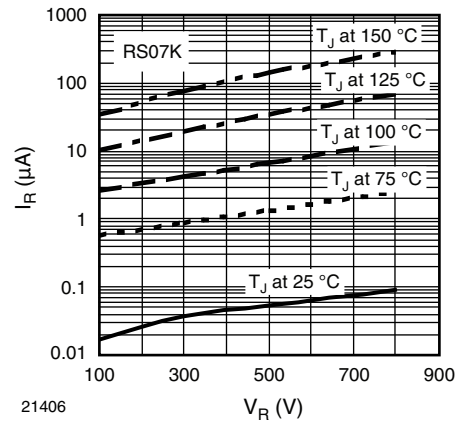


Fig. 7 - Typical Reverse Characteristics

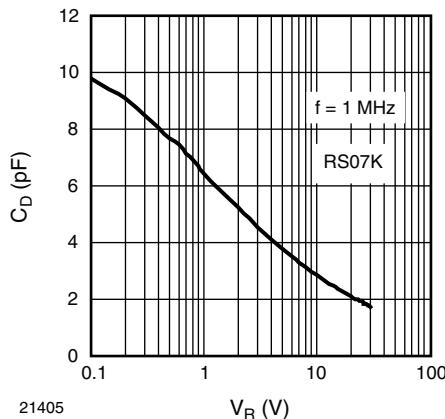
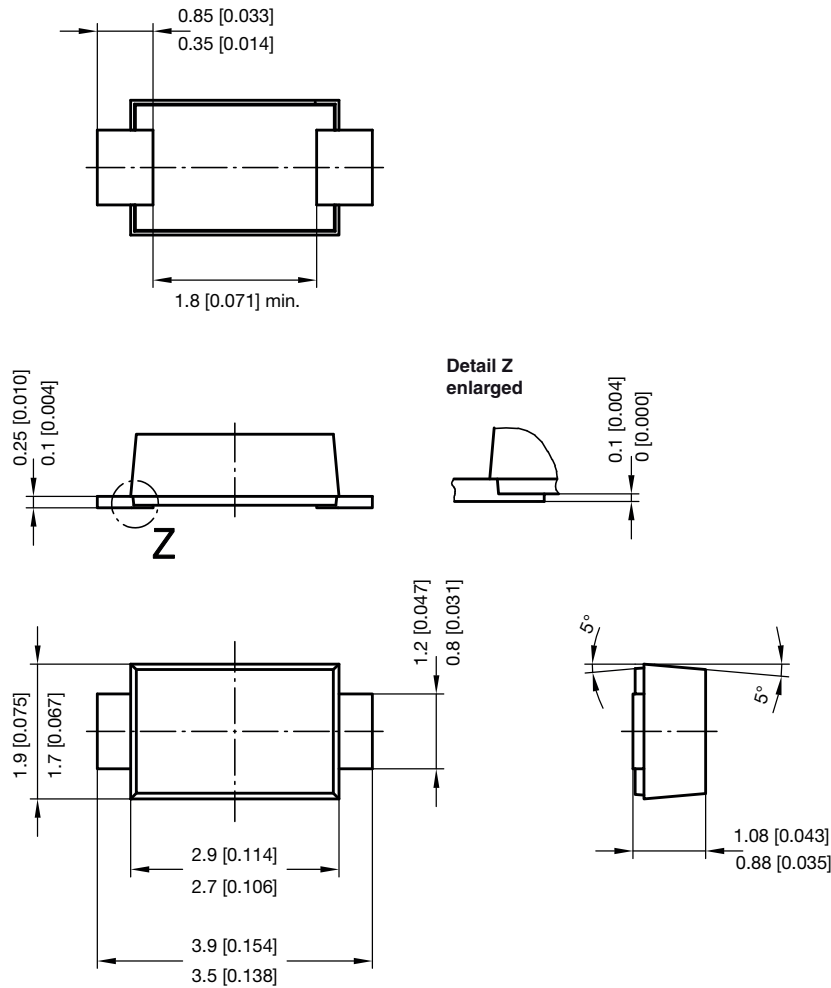


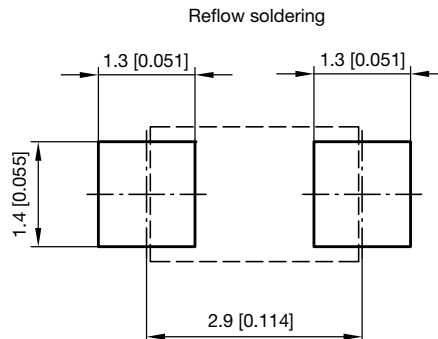
Fig. 5 - Typical Diode Capacitance vs. Reverse Voltage



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



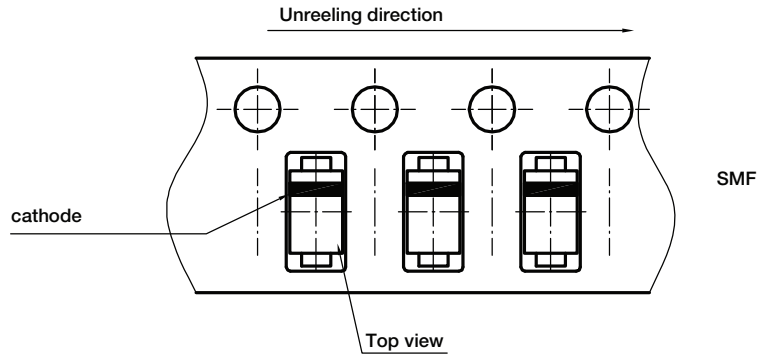
foot print recommendation:



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-219 AB)



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



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