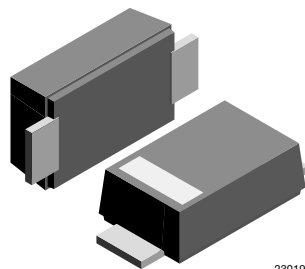
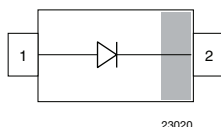


Fast Rectifier Surface-Mount

eSMP® Series


SMF (DO-219AB)


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-E3 - RoHS-compliant
- Base P/N-GS - 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


RoHS
COMPLIANT

LINKS TO ADDITIONAL RESOURCES



3D Models

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-E3-18 or RS07B-E3-08	YB	Tape and reel
	RS07B-GS18 or RS07B-GS08	RB	
RS07D	RS07D-E3-18 or RS07D-E3-08	YD	Tape and reel
	RS07D-GS18 or RS07D-GS08	RD	
RS07G	RS07G-E3-18 or RS07G-E3-08	YG	Tape and reel
	RS07G-GS18 or RS07G-GS08	RG	
RS07J	RS07J-E3-18 or RS07J-E3-08	YJ	Tape and reel
	RS07J-GS18 or RS07J-GS08	RJ	
RS07K	RS07K-E3-18 or RS07K-E3-08	YK	Tape and reel
	RS07K-GS18 or RS07K-GS08	RK	



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
		RS07K	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 ⁽¹⁾		R_{thJA}	180	K/W
Operating junction and storage temperature range		T_j, T_{stg}	-55 to 150	$^{\circ}\text{C}$

Note

⁽¹⁾ 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	$I_F = 0.7\text{ A}^{(1)}$	RS07B	V_F			1.15	V
		RS07D	V_F			1.15	V
		RS07G	V_F			1.15	V
		RS07J	V_F			1.15	V
	$I_F = 1\text{ A}^{(1)}$	RS07K	V_F			1.3	V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$	RS07B	I_R			10	μA
		RS07D	I_R			10	μA
		RS07G	I_R			10	μA
		RS07J	I_R			10	μA
		RS07K	I_R			2	μA
	$T_A = 125\text{ }^{\circ}\text{C}$	RS07B	I_R			50	μA
		RS07D	I_R			50	μA
		RS07G	I_R			50	μA
		RS07J	I_R			50	μA
		RS07K	I_R			150	μA
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{rr} = 0.25\text{ A}$	RS07B	t_{rr}			150	ns
		RS07D	t_{rr}			150	ns
		RS07G	t_{rr}			150	ns
		RS07J	t_{rr}			250	ns
		RS07K	t_{rr}			300	ns
Typical capacitance	4 V, 1 MHz	RS07B	C_j		9		pF
		RS07D	C_j		9		pF
		RS07G	C_j		9		pF
		RS07J	C_j		9		pF
		RS07K	C_j		4		pF

Note

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



TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

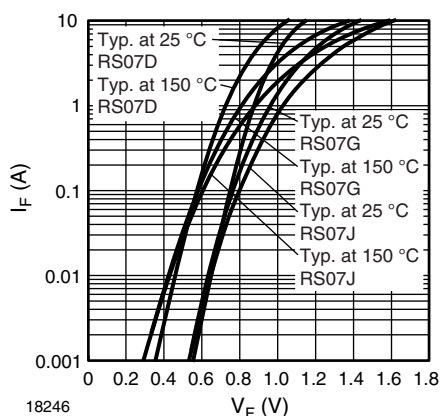


Fig. 1 - Typical Forward Characteristics

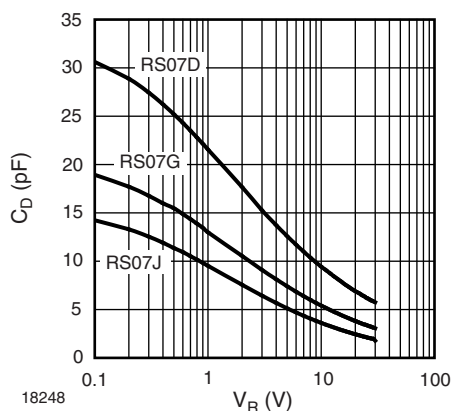


Fig. 4 - Typical Diode Capacitance vs. Reverse Voltage

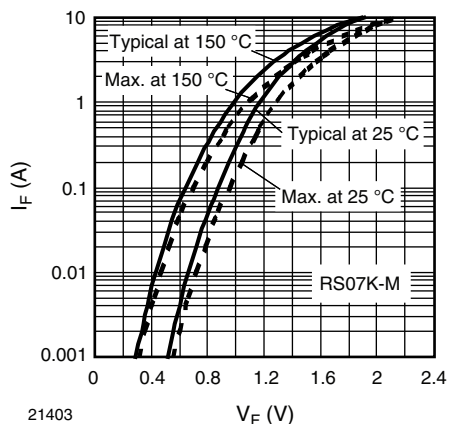


Fig. 2 - Typical Forward Characteristics

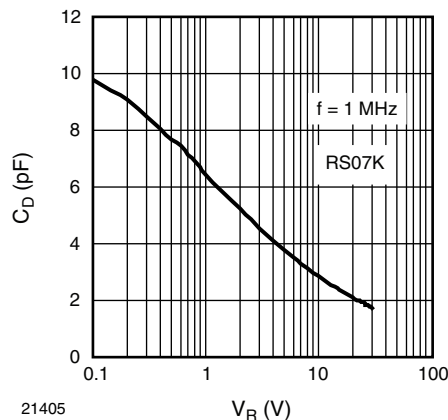


Fig. 5 - Typical Diode Capacitance vs. Reverse Voltage

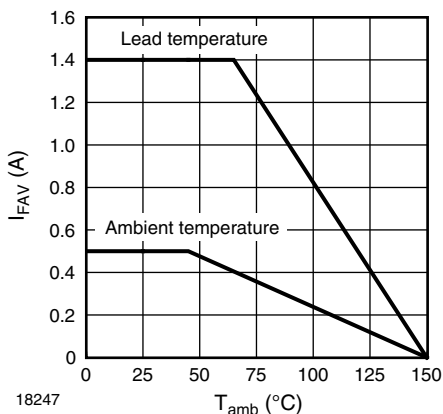


Fig. 3 - Forward Current Derating Curve

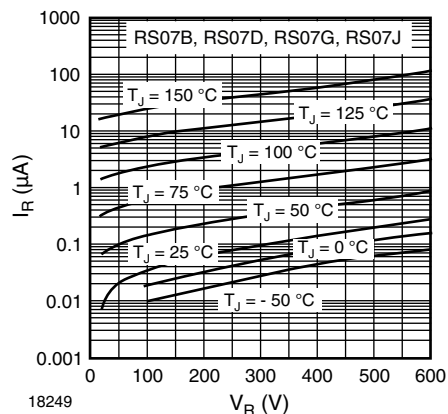


Fig. 6 - Typical Reverse Characteristics

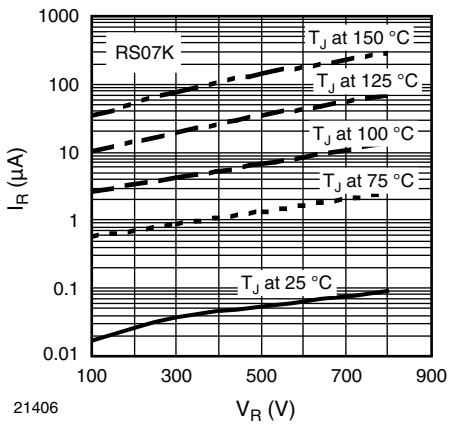
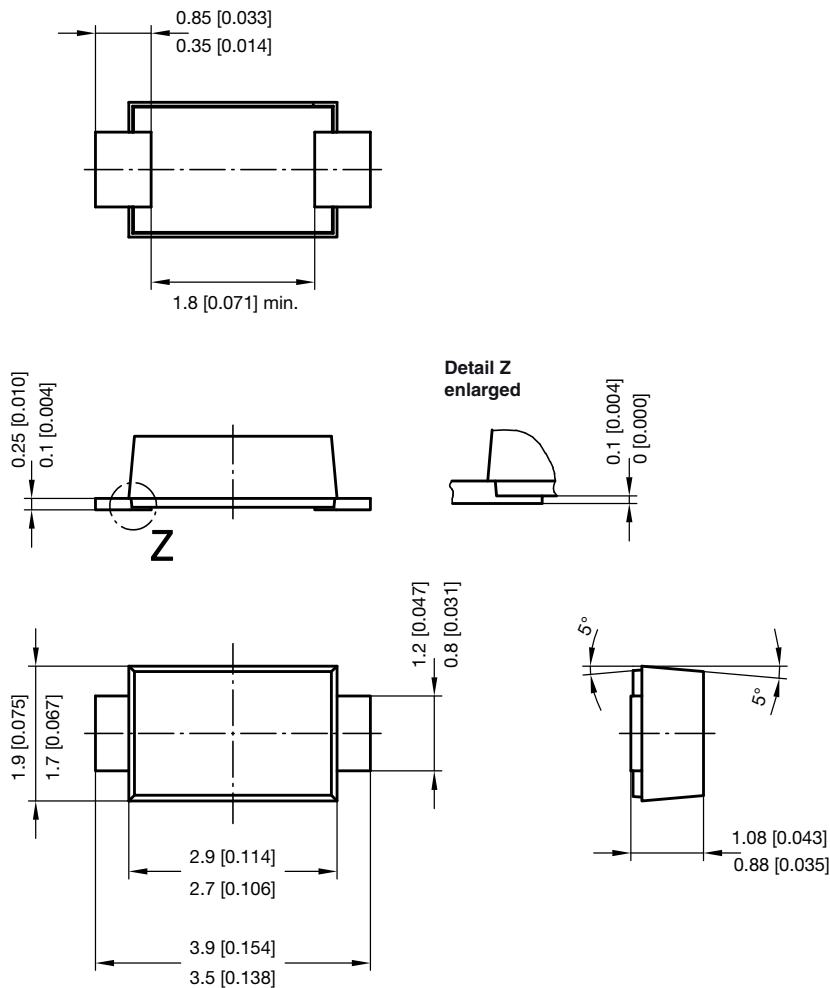


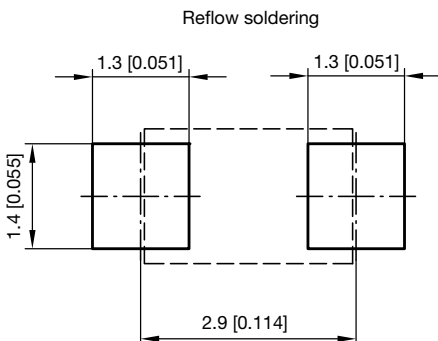
Fig. 7 - Typical Reverse Characteristics



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



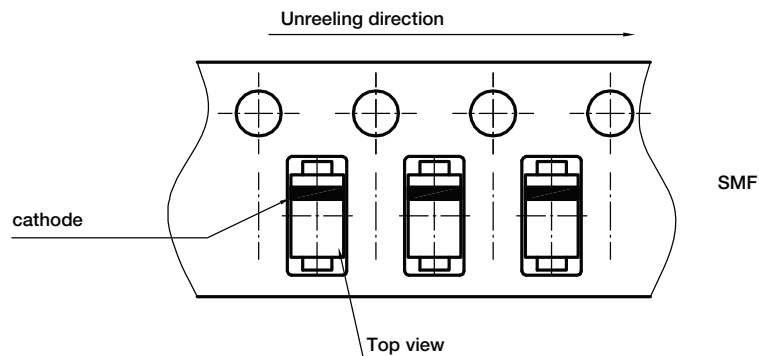
foot print recommendation:



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-219 AB)



Document no.: S8-V-3717.02-003 (4)

Created - Date: 09. Feb. 2010

22670



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