

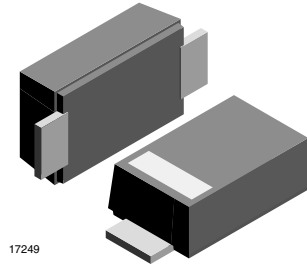
## Small Surface Mount Ultrafast Diodes

### Features

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated
- High temperature soldering: 260 °C/10 s at terminals
- Wave and reflow solderable
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT



### Mechanical Data

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

**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)

### Parts Table

Part	Ordering code	Marking	Remarks
ES07B	ES07B-GS18 or ES07B-GS08	EB	Tape and reel
ES07D	ES07D-GS18 or ES07D-GS08	ED	Tape and reel

### Absolute Maximum Ratings

$T_{amb} = 25\text{ °C}$ , unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Maximum repetitive peak reverse voltage		ES07B	$V_{RRM}$	100	V
		ES07D	$V_{RRM}$	200	V
Maximum RMS voltage		ES07B	$V_{RMS}$	70	V
		ES07D	$V_{RMS}$	140	V
Maximum DC blocking voltage		ES07B	$V_{DC}$	100	V
		ES07D	$V_{DC}$	200	V
Maximum average forward rectified current	$T_{tp} = 105\text{ °C}$		$I_{F(AV)}$	1.2	A
	$T_A = 65\text{ °C}^1)$		$I_{F(AV)}$	0.5	A
Peak forward surge current 8.3 ms single half sine-wave	$T_L = 25\text{ °C}$		$I_{FSM}$	30	A

Note:

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

### Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
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:

1) Mounted on epoxy glass PCB with 3 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	Symbol	Min.	Typ.	Max.	Unit
Maximum instantaneous forward voltage	1 A <sup>1)</sup>	$V_F$			0.98	V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$	$I_R$			10	$\mu\text{A}$
	$T_A = 100\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_{rr} = 0.25\text{ A}$	$t_{rr}$			25	ns
Typical capacitance	4 V, 1 MHz	$C_j$		4		pF

Note:

1) Pulse test, 300  $\mu\text{s}$  pulse with 1 % duty cycle

### Typical Characteristics

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

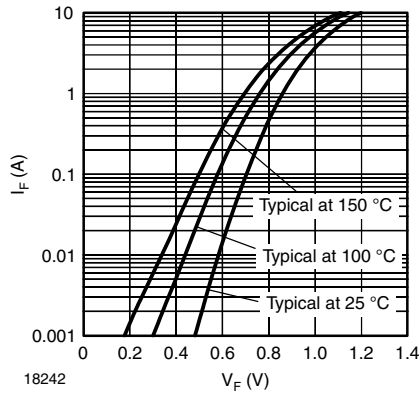


Figure 1. Typical Forward Characteristics

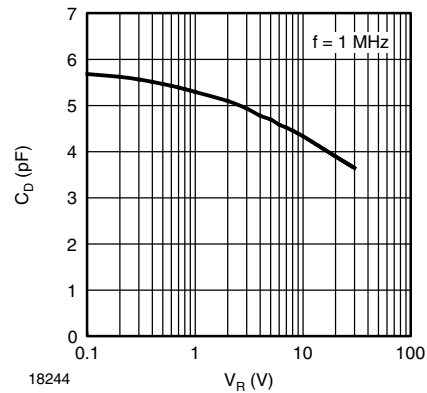


Figure 3. Typ. Diode Capacitance vs. Reverse Voltage

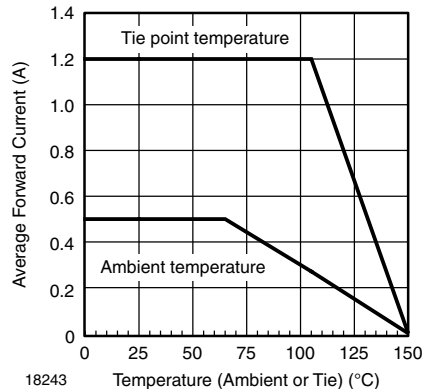


Figure 2. Forward Current Derating Curve

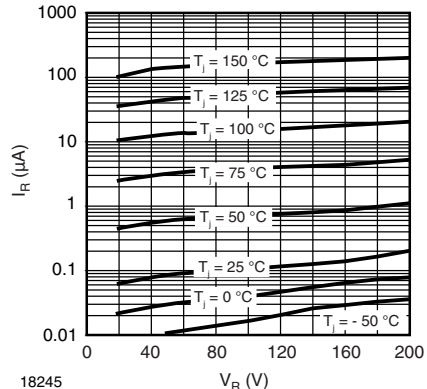
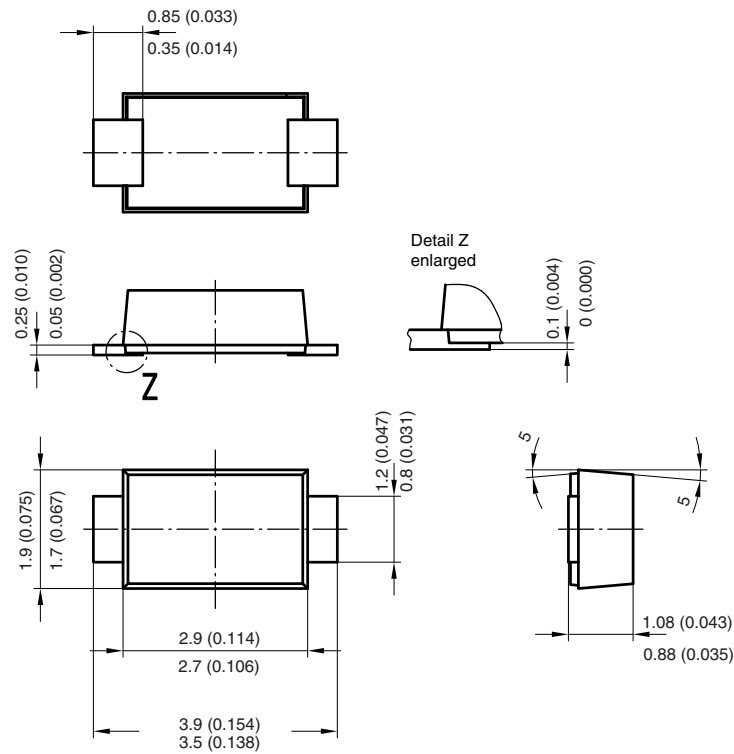
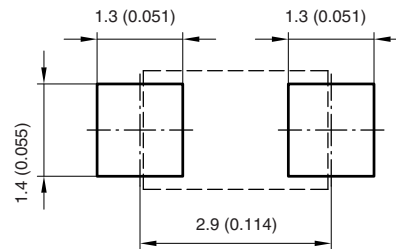


Figure 4. Typical Reverse Characteristics

## Package Dimensions in millimeters (inches): DO-219AB (SMF)



Foot print recommendation:



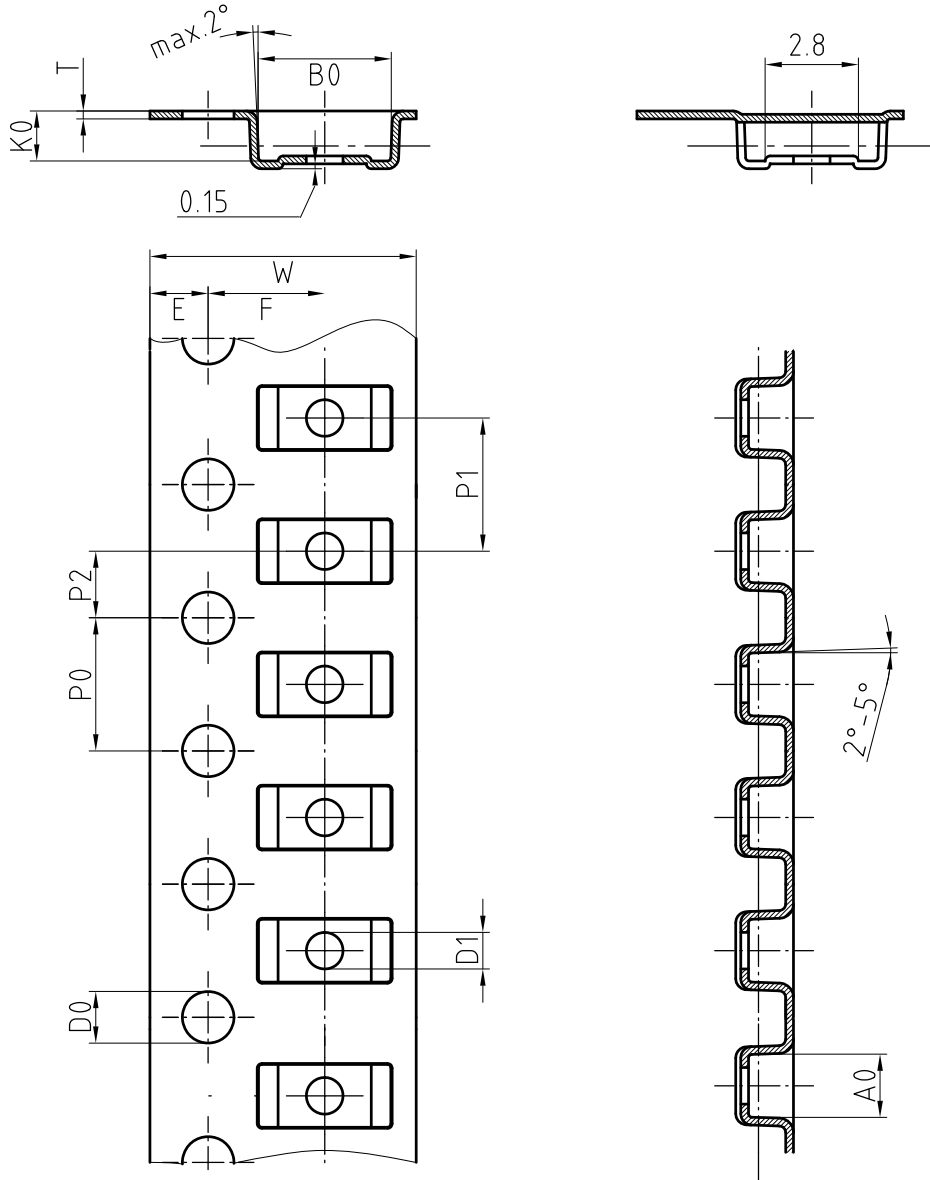
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# ES07B, ES07D



Vishay Semiconductors

## Blister Tape Dimensions for SMF in millimeters



Mat:	A0	B0	K0	W	T	P0	P2	P1	D0	D1	E	F
PS	1.9	4.0	1.5	8.0	0.235	4.0	2.0	4.0	1.5	1	1.75	3.5

Document-No.: S8-V-3717.02-001 (3)

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