

Super-Fast Rectifiers

ES1AF--ES1DF

Features

- Glass passivated junction
- For surface mounted applications
- Low profile package
- Low forward voltage drop
- High surge current capability
- RoHS Compliant



Mechanical Data

- Case: SMAF molded plastic
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL-STD-202, Method 208
- Polarity: Color band denotes cathode end

Maximum Ratings (@T_A = 25°C unless otherwise specified)

Characteristic	Symbol	ES1AF	ES1BF	ES1CF	ES1DF	Units
Peak repetitive reverse voltage	V _{RRM}	50	100	150	200	V
RMS reverse voltage	V _{RMS}	35	70	105	140	V
DC blocking voltage	V _{DC}	50	100	150	200	V
Maximum average forward output current	I _{F(AV)}	1.0				A
Peak forward surge current, 8.3ms single half-sine-wave	I _{FSM}	30				A

Thermal Characteristics

Parameter	Symbol	ES1AF	ES1BF	ES1CF	ES1DF	Units
Typical thermal resistance (Note 1)	R _{θJA}	78				°C/W
	R _{θJC}	18				
	R _{θJL}	20				
Operating junction temperature range	T _J	- 55 ---- + 150				°C
Storage temperature range	T _{STG}	- 55 ---- + 150				°C

Note:

1. Device mounted on PCB with 10 mm x 20 mm x 0.1mm copper pad areas

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Electrical Characteristics (@T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test conditions		Typ.	Max.	Units
Maximum instantaneous forward voltage	V _F	I _F =1.0A	@T _A =25°C	--	0.98	V
Maximum Reverse current	I _R	Rated V _R	@T _A =25°C	--	5	μ A
			@T _A =125°C	--	200	
Maximum Reverse Recovery Time	trr	I _F =0.5A, I _{RM} =1A, I _{R(REC)} =0.25A		--	35	ns

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Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Fig.1-Forward Current Derating Curve

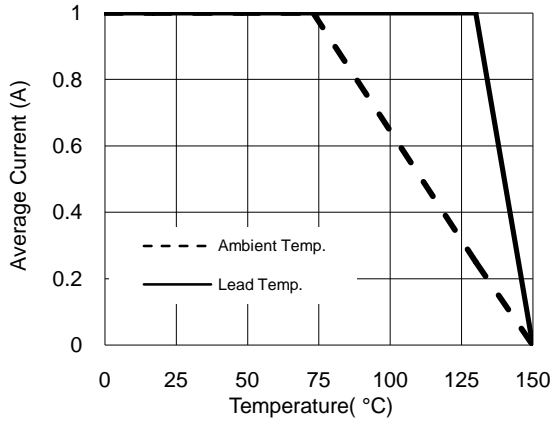


Fig.2- Surge Current Derating Curve

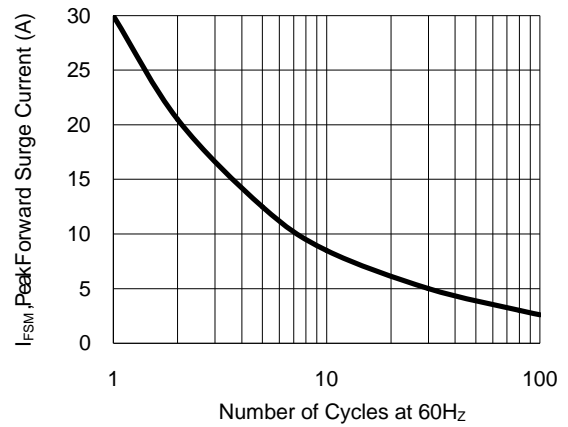


Fig.3- Typical Forward Voltage Characteristic

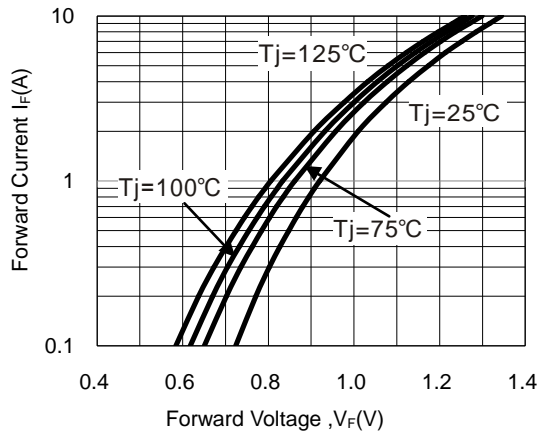
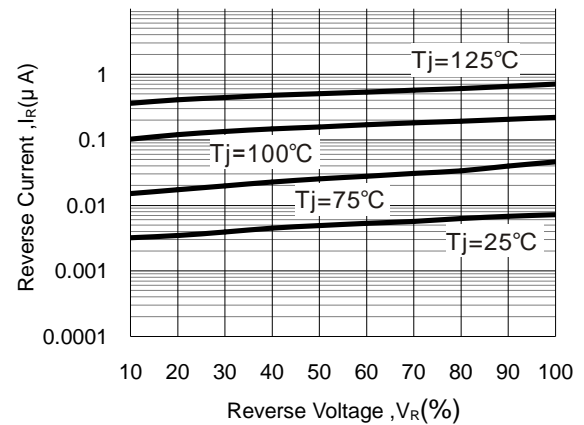


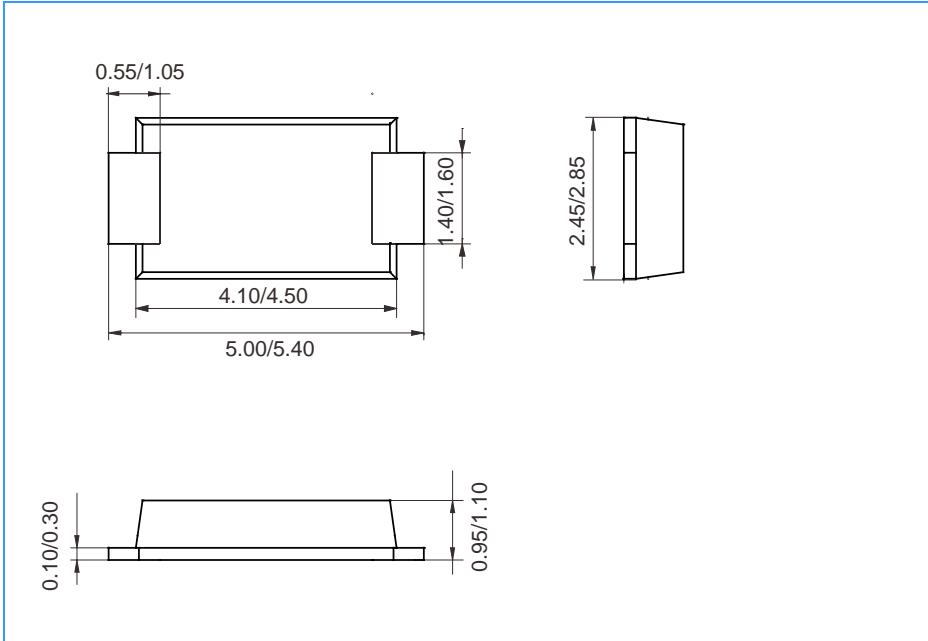
Fig.4- Typical Reverse Characteristic



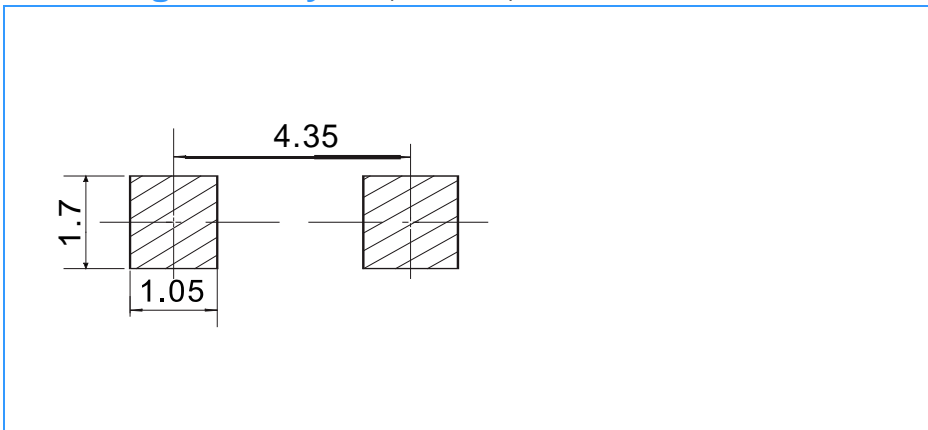
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Package Outline Dimensions(unit:mm)



Mounting Pad Layout(unit:mm)



Ordering Information

Part No.	Marking	Package	Shipping
ES1AF	ES1AF	SMAF	10000 /Tape&Reel
ES1BF	ES1BF	SMAF	10000 /Tape&Reel
ES1CF	ES1CF	SMAF	10000 /Tape&Reel
ES1DF	ES1DF	SMAF	10000 /Tape&Reel