Surface Mount Superfast Recovery Rectifier

Reverse Voltage – 200 V

Forward Current – 2 A

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

Top View
Simplified outline SMAF-C and symbol

Automotive Grade

FEATURES

- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives
- Hireliability application and automotive grade AEC-Q101 qualified

MECHANICAL DATA

- Case: SMAF-C
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 27mg / 0.00095oz

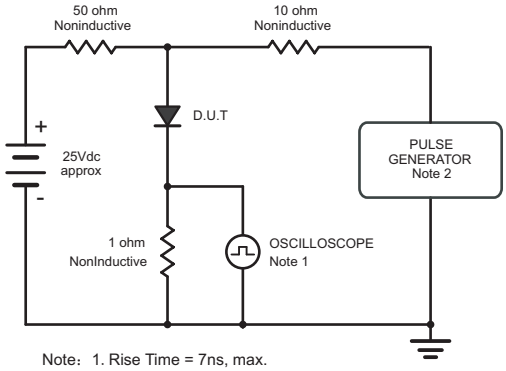
Absolute Maximum Ratings and Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

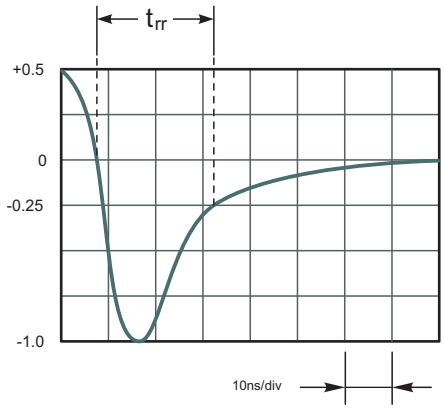
Parameter	Symbols	AT-ESMUR2DFC	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	200	V
Maximum RMS voltage	V_{RMS}	140	V
Maximum DC Blocking Voltage	V_{DC}	200	V
Maximum Average Forward Rectified Current @ Fig.1	$I_{F(AV)}$	2	A
Peak Forward Surge Current,8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	50	A
Peak Forward Surge Current,1.0ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	100	A
I^2t Rating for fusing (3ms≤t≤8.3ms)	I^2t	10.3	A^2S
Max Instantaneous Forward Voltage at 2 A	V_F	0.95	V
Maximum DC Reverse Current at Rated DC Reverse Voltage T_a = 25°C T_a =125°C	I_R	1 20	μA
Typical Junction Capacitance (1)	C_j	35	pF
Maximum Reverse Recovery Time (2)	t_{rr}	25	ns
Typical Thermal Resistance (3)	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	100 20 30	°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°C

(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C
(2) Measured with I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A.
(3) P.C.B. mounted with 0.2" X 0.2" (5 X 5 mm) copper pad areas.

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note：1. Rise Time = 7ns, max.
Input Impedance = 1megohm,22pF.
2. Ries Time =10ns, max.
Source Impedance = 50 ohms.



Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating

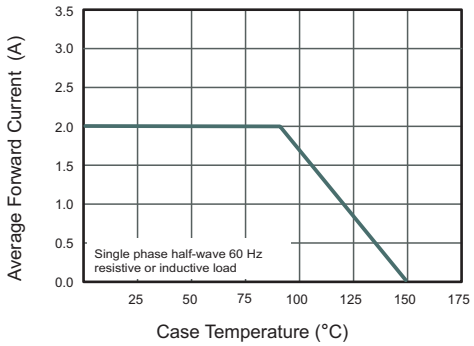


Fig.3 Typical Reverse Characteristics

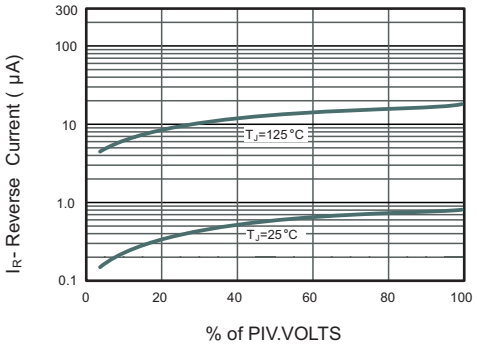


Fig.4 Typical Forward Characteristics

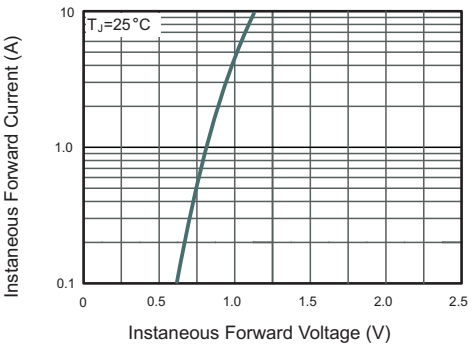


Fig.5 Typical Junction Capacitance

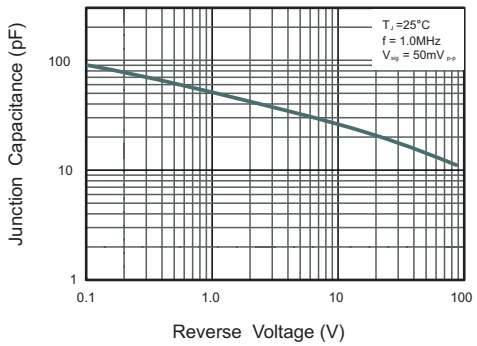
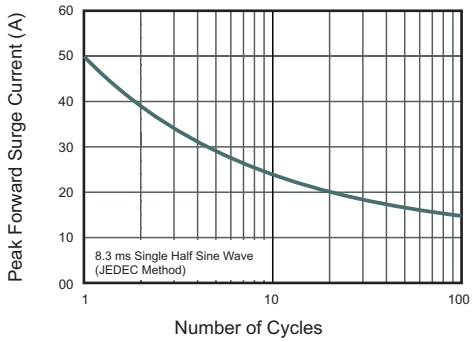
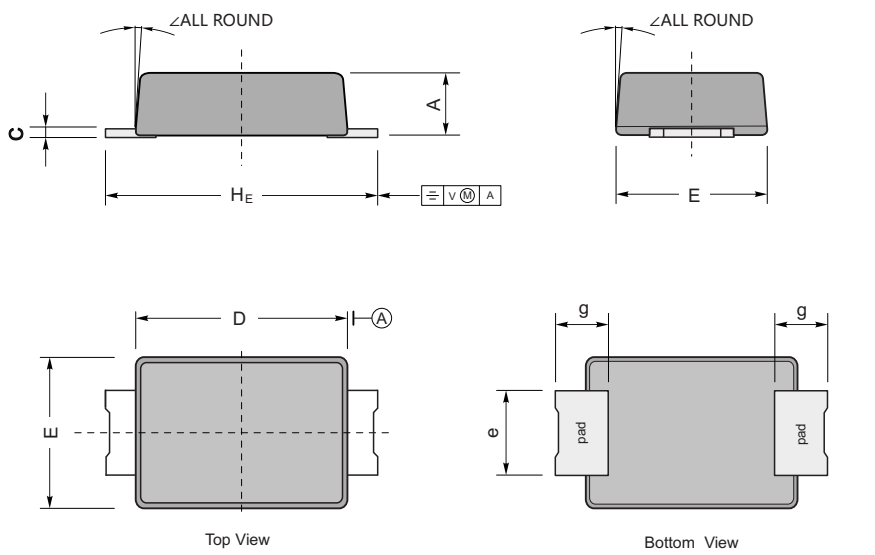


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



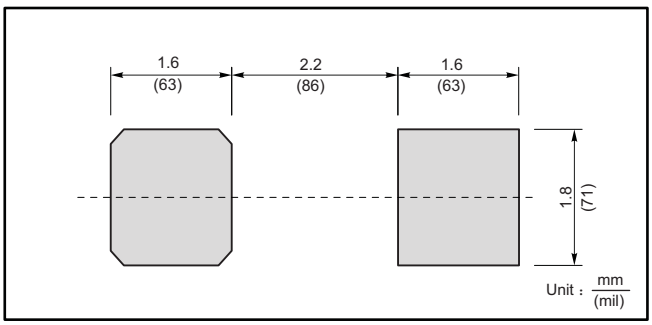
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads SMAF-C



UNIT		A	C	D	E	e	g	H_E	∠
mm	max	1.2	0.20	3.7	2.7	1.6	1.2	4.9	7°
	min	0.9	0.12	3.3	2.4	1.3	0.8	4.4	
mil	max	47	7.9	146	106	63	47	193	
	min	35	4.7	130	94	51	31	173	

The recommended mounting pad size



Marking

Type number	Marking code
AT-ESMUR2DFC	EM2D

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