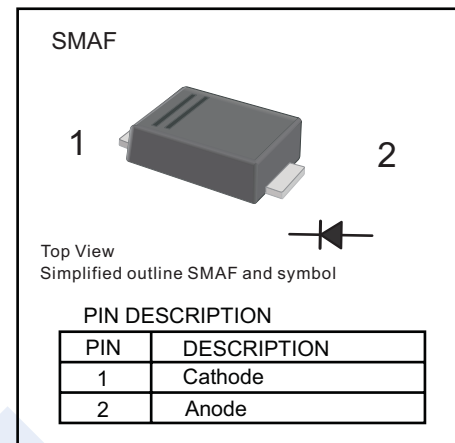# Rectifier Diodes

S1AF ~ S1MF

■ Features

● Reverse Voltage - 50 to 1000V

● Forward Current - 1A

● For surface mounted applications

● Low profile package

● Glass Passivated Chip Junction

● Easy to pick and place

SMAF

Top View
Simplified outline SMAF and symbol

PIN DESCRIPTION

PIN	DESCRIPTION
1	Cathode
2	Anode

■ Absolute Maximum Ratings and Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Parameter	Symbol	S1AF	S1BF	S1DF	S1GF	S1JF	S1KF	S1MF	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	
Instantaneous Forward Voltage at 1A	V_F	1.1							
Averaged Forward Current T_C=125℃	$I_{F(AV)}$	1							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	30							
Maximum DC Reverse Current T_a=25℃	I_R	5							μA
at rated DC blocking voltage T_a=125℃		50							
Typical Junction Capacitance (1)	C_j	15							pF
Typical thermal resistance (2)	$R_{θJA}$	80							℃/W
	$R_{θJC}$	27							
Junction Temperature	T_j	150							℃
Storage Temperature	T_{stg}	-55 to 150							

(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

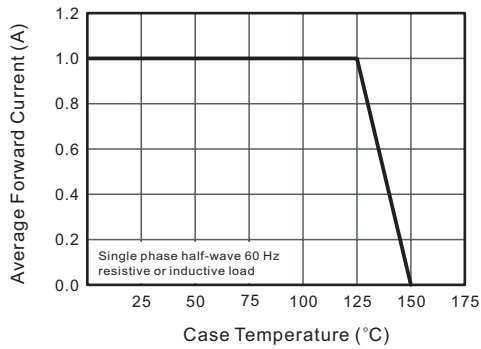(2) P.C.B mounted with 2″×2″ (5×5 cm) copper pad areas.

■ Marking

NO.	S1AF	S1BF	S1DF	S1GF	S1JF	S1KF	S1MF
Marking	S1A	S1B	S1D	S1G	S1J	S1K	S1M

Rectifier Diodes

S1AF ~ S1MF

■ Typical Characterisitics

Fig.1 Forward Current Derating Curve
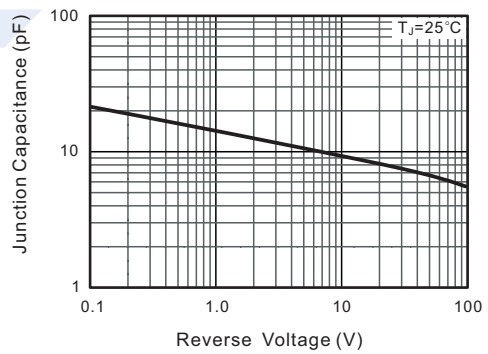
Average Forward Current (A) vs Case Temperature (°C)

Single phase half-wave 60 Hz resistive or inductive load

Fig.2 Typical Instaneous Reverse Characteristics

Instaneous Reverse Current (μA) vs Instaneous Reverse Voltage (V)

$T_J = 150°C$
$T_J = 125°C$
$T_J = 100°C$
$T_J = 75°C$
$T_J = 25°C$
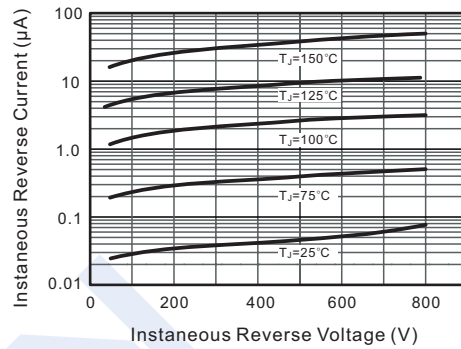
Fig.3 Typical Forward Characteristic

Instaneous Forward Current (A) vs Instaneous Forward Voltage (V)

$T_J = 125°C$
$T_J = 100°C$
$T_J = 25°C$

Fig.4 Typical Junction Capacitance

Junction Capacitance (pF) vs Reverse Voltage (V)

$T_J = 25°C$
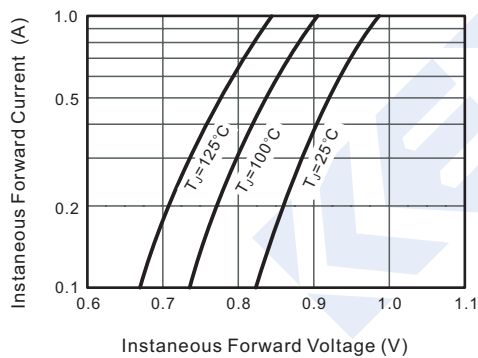
Fig.5 Maximum Non-Repetitive Peak Forward Surage Current

Peak Forward Surage Current (A) vs Number of Cycles
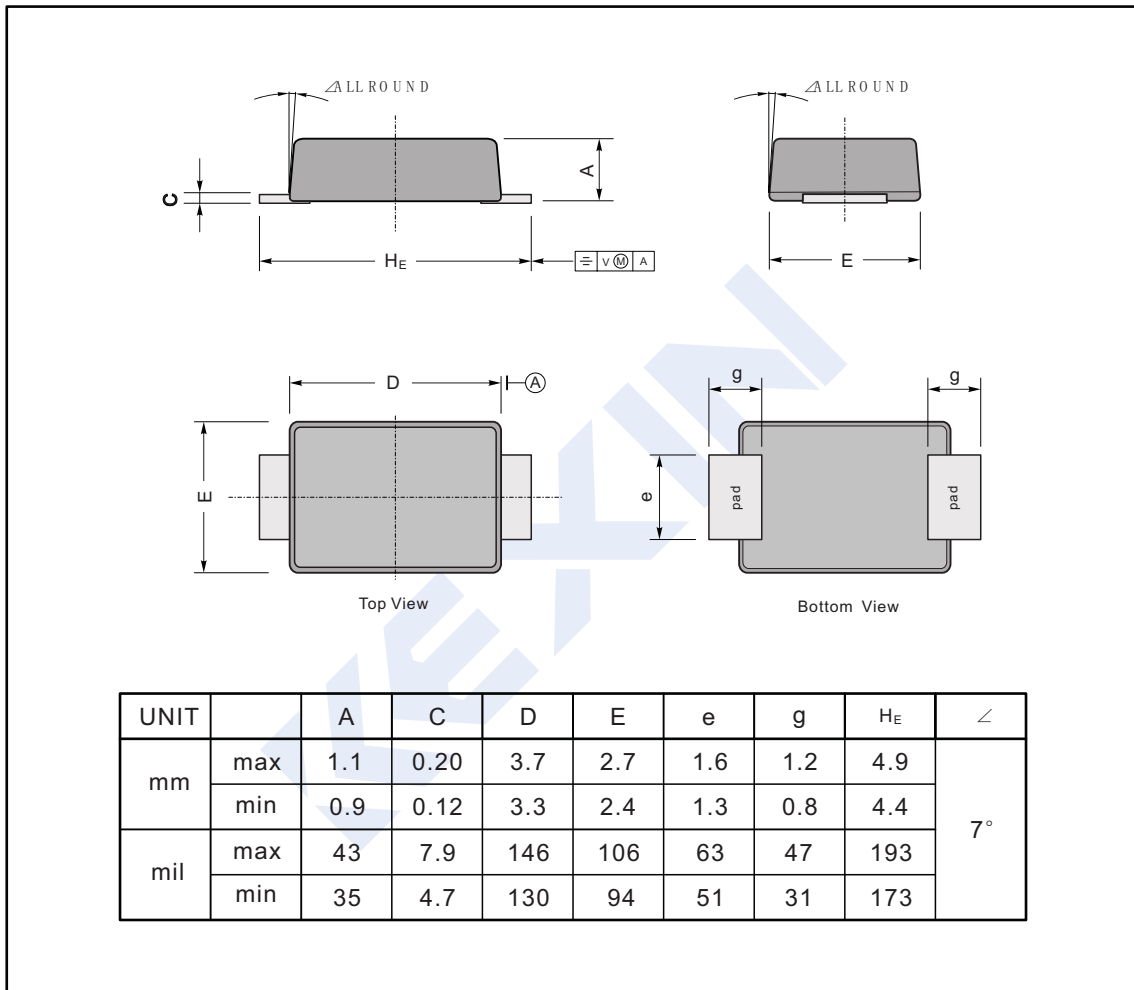
8.3 ms Single Half Sine Wave (JEDEC Method)

Rectifier Diodes

S1AF ~ S1MF

■ Package Outline Dimensions

Plastic surface mounted package; 2 leads   SMAF

Top View

Bottom View

UNIT		A	C	D	E	e	g	H_E	∠
mm	max	1.1	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	43	7.9	146	106	63	47	193	
	min	35	4.7	130	94	51	31	173	

■ The Recommended Mounting Pad Size

Unit : mm / (mil)