

SDS142WAF

Small Signal Fast Switching Diode

General Description

Dual general-purpose switching diodes, fabricated in planar technology, and packaged in small SOT-323F surface mounted device (SMD) packages.

Features and Benefits

- Silicon epitaxial planar diode
- High switching speed: trr≤4ns
- · Low forward drop voltage and low leakage current
- "Green" device and RoHS compliant device
- Available in full lead (Pb)-free device



SOT-323F





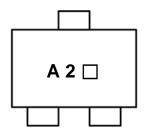
Applications

· Ultra high speed switching application

Ordering Information

Part Number	Marking Code	Package	Packaging
SDS142WAF	A2 □	SOT-323F	Tape & Reel

Marking Information



A 2 = Specific Device Code

☐ = Year & Week Code Marking

Pinning Information

Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode (Diode 1)	3	
2	Cathode (Diode 2)		*
3	Common Anode	1 2	

Absolute Maximum Ratings (T_{amb}=25°C, Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
Maximum repetitive peak reverse voltage	V_{RM}	85	V
Continuous reverse voltage	V_R	80	V
Maximum average forward rectified current	Io	100	mA
Forward current (DC)	I _F	100	mA
Maximum repetitive peak forward current	I _{FM}	300	mA
Non-repetitive peak forward surge current(t=10ms)	I _{FSM}	2	А
Power dissipation 1)	P _D	150	mW

¹⁾ Device mounted on FR-4 board with recommended pad layout.

Thermal Characteristics (T_{amb} =25°C, Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
Thermal resistance, junction to ambient 1)	$R_{\text{th(j-a)}}$	830	°C/W
Operating junction temperature	Tj	150	°C
Storage temperature range	T _{stg}	-55 ~ 150	°C

¹⁾ Device mounted on FR-4 board with recommended pad layout.

Electrical Characteristics (T_{amb}=25°C, Unless otherwise specified)

Characteristic	Symbol	Test Condition	Min.	Тур.	Max.	Unit
Forward voltage ²⁾	V _{F(1)}	I _F =1mA	-	0.6	-	V
	$V_{F(2)}$	I _F =10mA	ı	0.7	-	V
	$V_{F(3)}$	I _F =100mA	ı	0.9	1.2	V
Reverse leakage current 3)	I _R	V _R =80V	-	-	0.5	uA
Total capacitance	C_{T}	V _R =0V, f=1 MHz	-	2.2	4.0	pF
Reverse recovery time	t _{rr}	I _F =10mA (Fig. 5)	-	1.6	4.0	ns

²⁾ Pulse test: t_P≤380 µs, Duty cycle≤2%

³⁾ Pulse test: $t_P \le 5$ ms, Duty cycle $\le 2\%$

Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

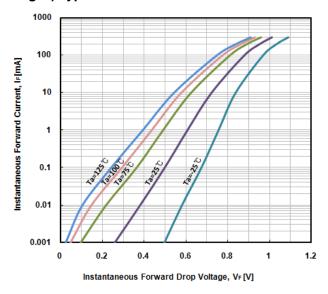


Fig. 2) Typical Reverse Characteristics

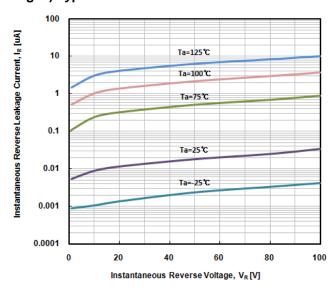


Fig. 3) Typical Total Capacitance Characteristics

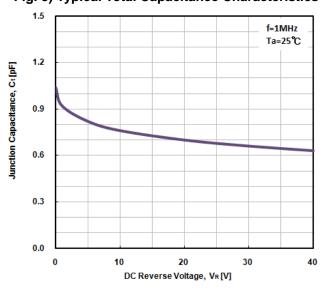


Fig. 4) Reverse Recovery Time vs. Forward Current

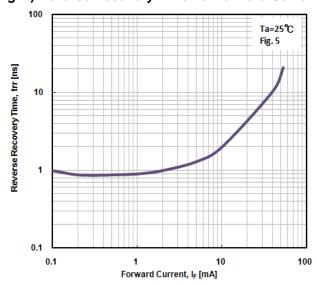
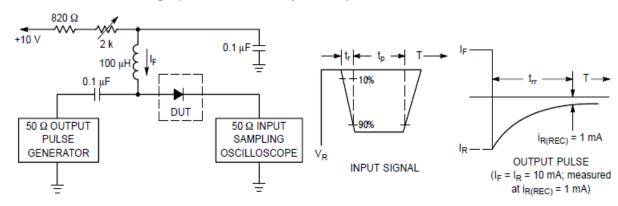
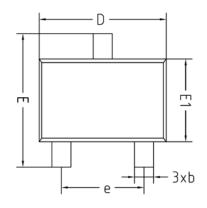


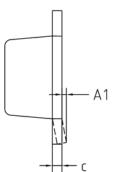
Fig. 5) Reverse recovery time equivalent test circuit

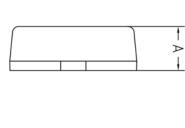


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Package Outline Dimensions

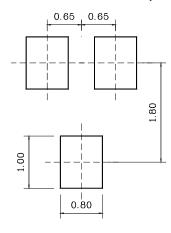






SYMBOL	1	NOTE		
STRIBUL	MINIMUM	NOMINAL	MAXIMUM	NUTE
Α	0.60	-	0.80	
A1	0.00	-	0.10	
Ь	0.30	-	0.40	
С	0.08	-	0.16	
D	1.90	2.00	2.10	
Е	1.95	2.10	2.25	
E1	1.20	1.30	1.40	
е		1.30BS	C	

X Recommend PCB solder land (Unit : mm)



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