SEMICONDUCTOR

1N4148W

SMALL SIGNAL SWITCHING DIODE

FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- 500mW power dissipation
- This diode is also available in other case styles including: the DO-35 case with the type designation 1N4148,
  the SOD-323 case with the type designation 1N4148WS, the SOD-523 case with the type designation 1N4148WT.
- Component in accordance to RoHS 2015/863/EU

SOD-123FL

SOD-123

MECHANICAL DATA

- Case: SOD-123 plastic case
- Weight: Approx. 0.01 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Ratings at 25°C ambient temperature unless otherwise specified)

	Symbols	Value	Units
DC Blocking Voltage	V_R	75	Volts
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	Volts
Average rectified current, Half wave rectification with Resistive load at T_A=25°C and f ≥50Hz	I_{AV}	150	mA
Non-Repetitive Peack Forward Surge Current @t=1.0s	I_{FSM}	500	mA
Power dissipation at T_A=25°C	P_{tot}	400	mW
Junction temperature	T_J	150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

(Ratings at 25°C ambient temperature unless otherwise specified)

	Symbol	Min.	Typ.	Max.	Units
Forward voltage at IF=10mA	V_F			1	Volts
Leakage current at V_R=20V	I_R			25	nA
at V_R=75V	I_R			5	μA
at V_R=20V , T_J=150°C	I_R			50	μA
Junction capacitance at V_R=V_F=0V	C_J			4	pF
Voltage rise when switching on tested with 50mA pulse t_P=0.1μs, Rise time<30μs, f_P=5 to 100kHz	V_{fr}			2.5	Volts
Reverse recovery time from I_F=10mA to I_R=1mA, V_R=6V, R_L=100Ω	t_{rr}			4	ns
Thermal resistance junction to ambient	$R_{\theta JA}$		312		°C/W
Rectification efficiency at f=100MHz, V_{RF}=2V	η	0.45			

RATINGS AND CHARACTERISTIC CURVES 1N4148W

FIG 1-FORWARD CHARACTERISTICS

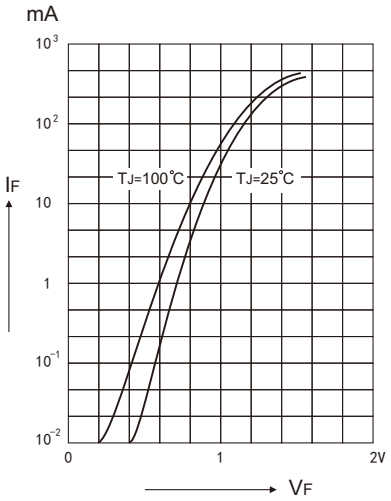


FIG 2: DYNAMIC FORWARD RESISTANCE VERSUS FORWARD CURRENT

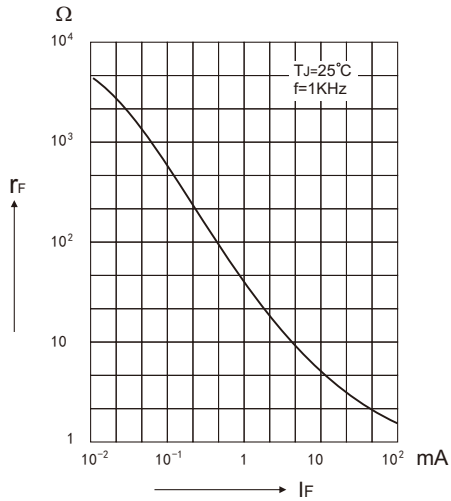


FIG 3-ADMISSIBLE POWER DISSIPATION VERSUS AMBIENT TEMPERATURE

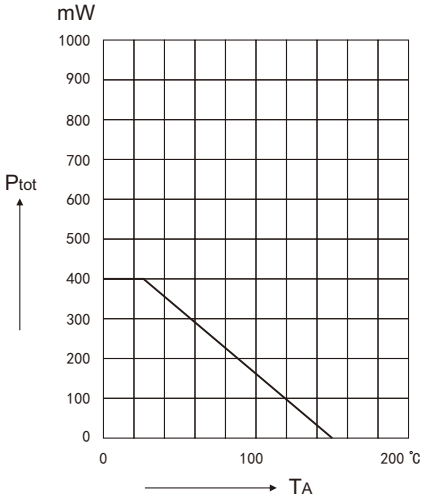


FIG. 4-RELATIVE CAPACITANCE VERSUS VOLTAGE

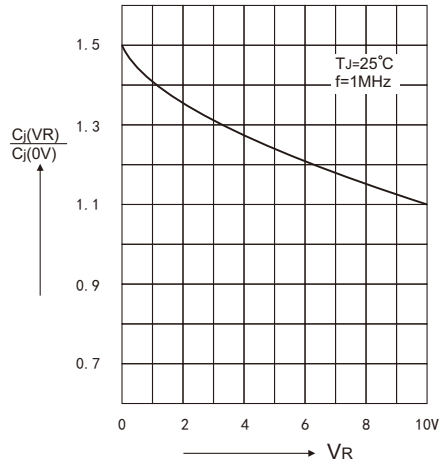


FIG.5 RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT

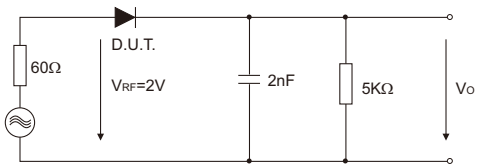


FIG 6: LEAKAGE CURRENT VERSUS JUNCTION TEMPERATURE

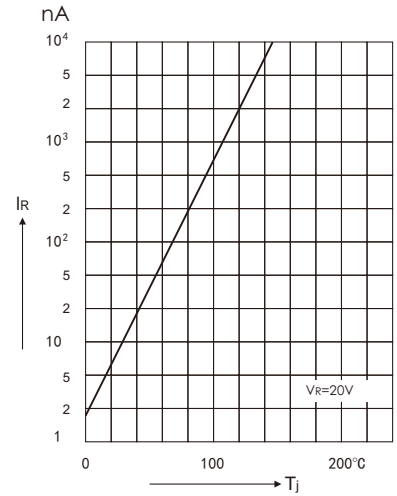
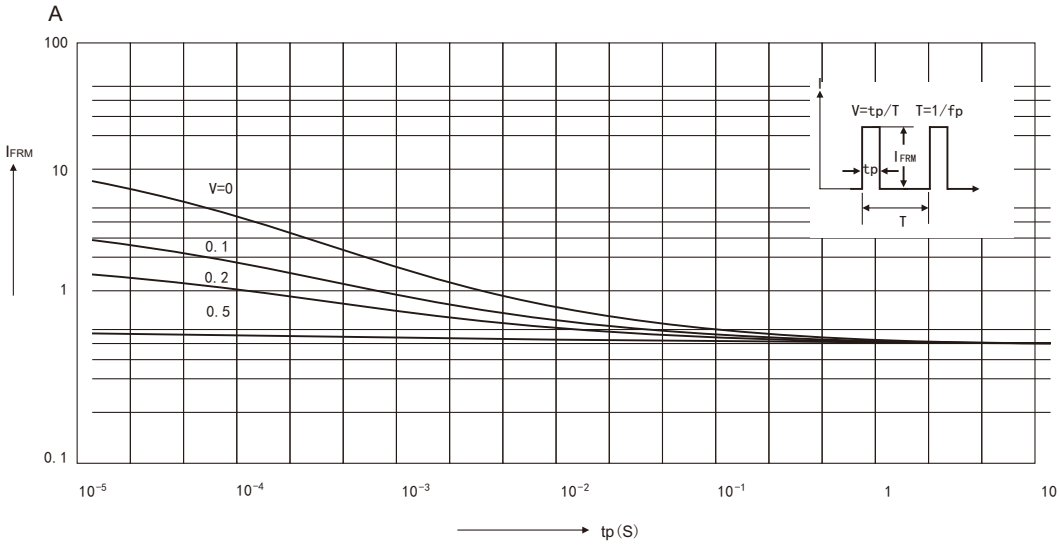
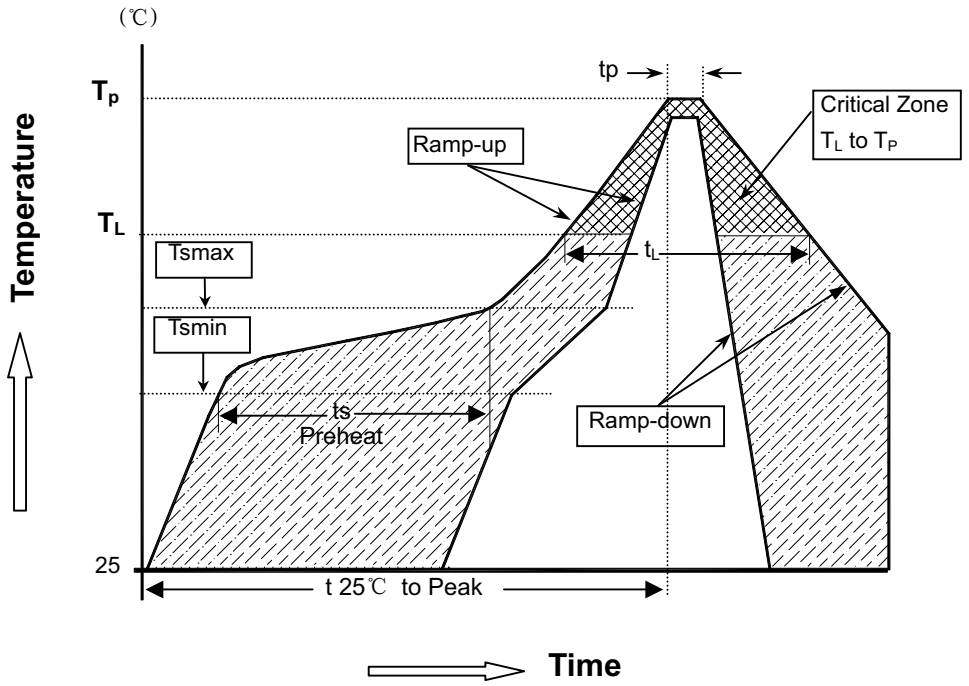


FIG 7: ADMISSIBLE REPETITIVE PEAK FORWARD CURRENT VERSUS PULSE DURATION



1.Recommended of reflow soldering condition.

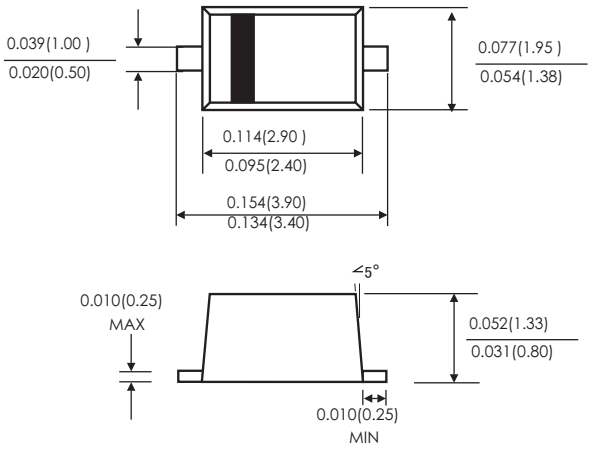
Profile Feature	Pb-Free Assembly
Average ramp-up rate (Ts_{max} to T_P)	3℃/second max.
Preheat Temperature Min (Tsmin) Temperature Max (Tsmax) Time (min to max) (ts)	 150℃ 200℃ 60-180 seconds
Time maintained above: Temperature (T_L) Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (Tp)	260+0℃
Time within 5℃ of actual Peak Temperature (tp)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.



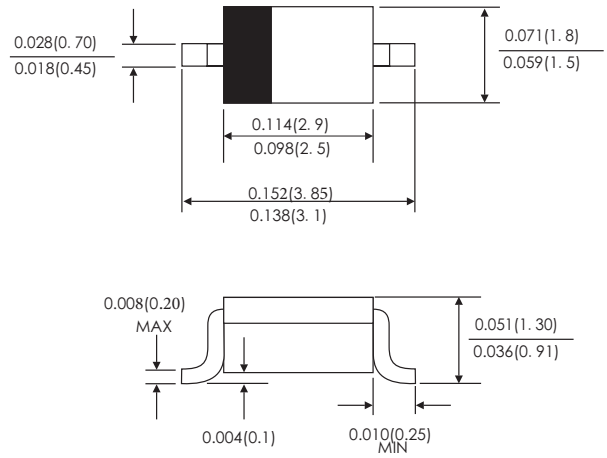
2. Condition of hand Soldering

Temperature: 370 ℃ max. Time: 3sec. max.

SOD-123FL

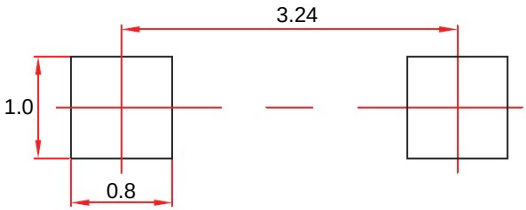


SOD-123



Dimensions in inches and (millimeters)

Suggested Pad Layout



Note:
1.Dimenslon:mm
2.General tolerance:±0.05mm
3.The pad layout is for reference purpoese only

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