

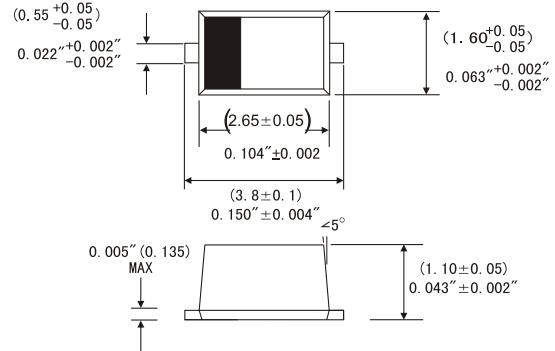
SMALL SIGNAL SWITCHING DIODE

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 MiniMelf case with the type designation LL4148, the MicroMelf case with the type designation MCL4148, the SOD-323 case with the type designation 1N4148WS, the SOD-523 case with the type designation 1N4148WT.



SOD-123



Dimensions in inches and (millimeters)

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 $T_A=25^\circ\text{C}$ and $f \geq 50\text{Hz}$ | I_{AV} | 150 | mA |
| Non-Repetitive Peak Forward Surge Current @ $t=1.0\text{s}$ | I_{FSM} | 500 | mA |
| Power dissipation at $T_A=25^\circ\text{C}$ | P_{tot} | 400 | mW |
| Junction temperature | T_J | 150 | °C |
| Storage temperature range | T_{STG} | -65 to +150 | °C |

ELECTRICAL CHARACTERISTICS

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

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

RATINGS AND CHARACTERISTIC CURVES 1N4148W

FIG 1-FORWARD CHARACTERISTICS

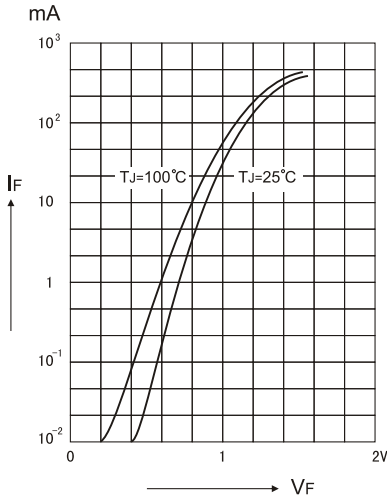


FIG 2: DYNAMIC FORWARD RESISTANCE VERSUS FORWARD CURRENT

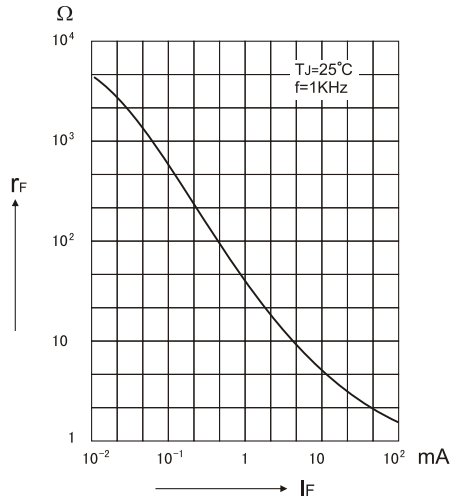


FIG 3-ADMISSIBLE POWER DISSIPATION VERSUS AMBIENT TEMPERATURE

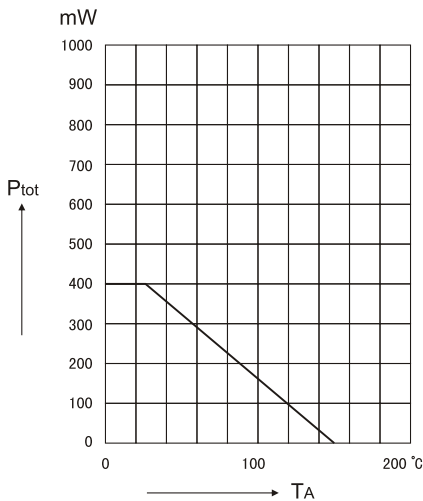
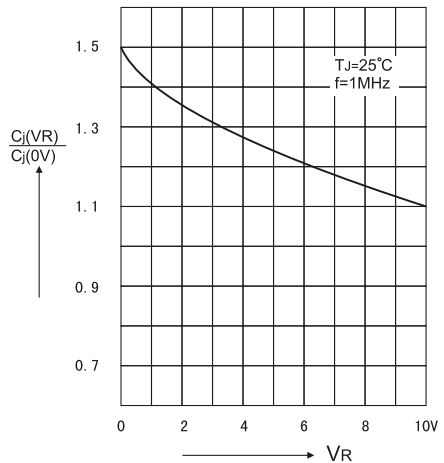


FIG. 4-RELATIVE CAPACITANCE VERSUS VOLTAGE



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FIG.5 RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT

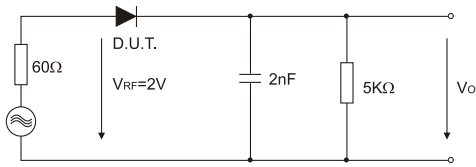


FIG 6: LEAKAGE CURRENT VERSUS JUNCTION TEMPERATURE

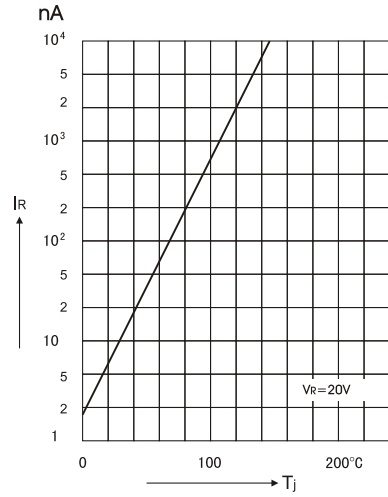


FIG 7: ADMISSIBLE REPETITIVE PEAK FORWARD CURRENT VERSUS PULSE DURATION

