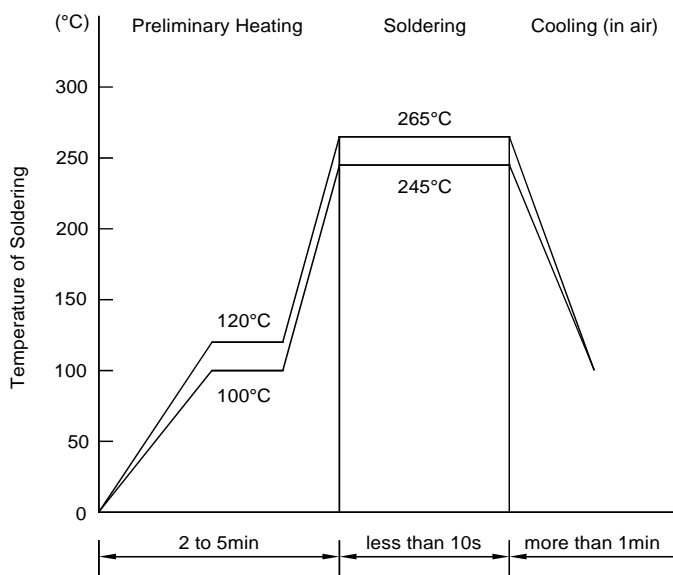
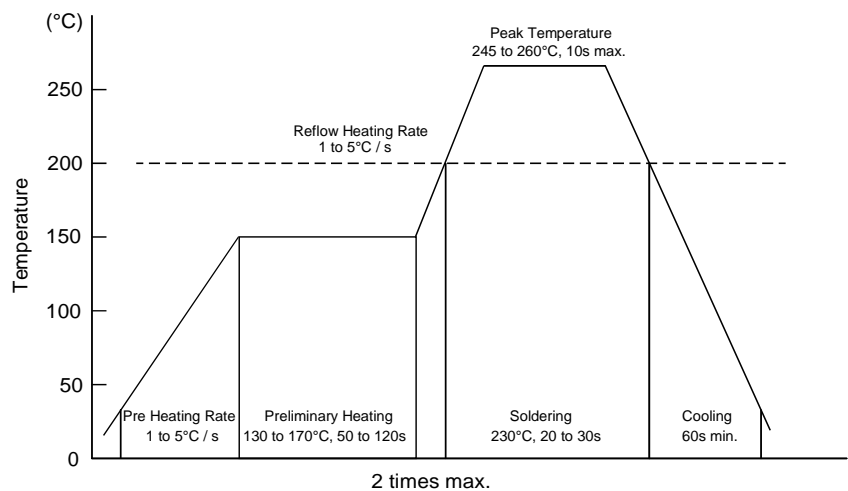


Soldering Conditions for Diodes & Transistors

- Recommended condition of flow soldering



- Recommended condition of reflow soldering

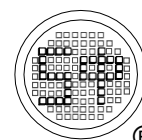


Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)

- Condition of hand soldering

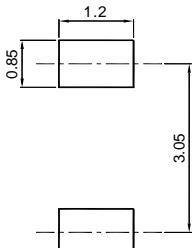
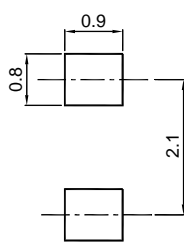
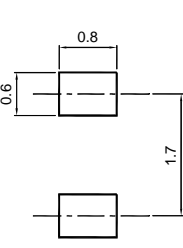
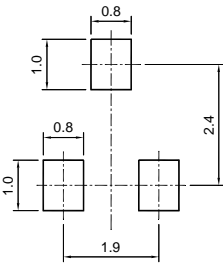
Time: 3 s max.
Times: one time

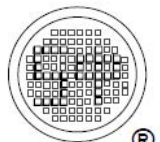
- Remark: Lead free solder paste (96.5Sn/3.0Ag/0.5Cu)



Reference to Copper Plate Area Dimension on PCB

Units: in mm

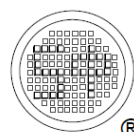
| | | | | |
|--|--|--|--|--|
|  <p>SOD-123</p> |  <p>SOD-323</p> |  <p>SOD-523</p> |  <p>SOT-23</p> | |
|--|--|--|--|--|



Technical Information

Index of Symbols

| | | | |
|-------------|---|-------------|--|
| C_{tot} | Capacitance, diode capacitance | r_{zth} | Thermal differential resistance in the breakdown region |
| C_L | Capacitance of load capacitor | r_{zu} | Static differential resistance in the breakdown region |
| f | Frequency | R_d | Damping resistance |
| f_{in} | Frequency of input voltage | R_G | Generator output resistance |
| f_{max} | Max. frequency of voltage to be rectified | R_L | Load resistance |
| f_p | Pulse frequency | R_S | Series resistance |
| f_O | Series resonance frequency | R_p | Primary copper resistance of transformer |
| f_{BR} | Hum frequency | R_s | Secondary copper resistance of transformer |
| f_{Q1} | Cutoff frequency for $Q = 1$ | R_t | Protective resistance for rectifiers, e.g. transformer equivalent resistance |
| G | Smoothing factor | R_{thA} | Thermal resistance junction to ambient air |
| h | Altitude above sea level | R_{thC} | Thermal resistance junction to case or stud |
| i_F | Instantaneous forward current | R_{thS} | Thermal resistance heat sink to ambient air |
| i_R | Instantaneous reverse current | S | Stabilization factor, length of edge of a cooling fin |
| I_F | Forward current | t | Time |
| I_{FAV} | Average (rectified) forward current | t_{fr} | Forward recovery time |
| I_{FRM} | Repetitive peak forward current | t_{on} | Switching-on time |
| I_{FSM} | Surge forward current (non-repetitive) | t_p | Pulse duration |
| $I_{F(OV)}$ | Overload forward current | t_{rr} | Reverse recovery time |
| I_R | Reverse (leakage) current | t_{th} | Thermal Run-In-Time |
| I_{RM} | Reverse pulse current | T | Temperature, duration of a full cycle |
| I_{RMS} | RMS current | T_C | Case temperature, stud temperature |
| I_S | Switching current | T_L | Lead temperature |
| I_Z | Zener current (operating current) | T_S | Storage temperature |
| I_{ZK} | Zener current at breakdown region | T_{amb} | Ambient temperature |
| I_{ZM} | Maximum Zener current | T_j | Junction temperature |
| I_{ZS} | Surge Zener current | V_F | Instantaneous forward voltage |
| I_{ZT} | Zener test current | V_R | Instantaneous reverse voltage |
| I_{ZSM} | Surge Zener current (non-repetitive) | V | Voltage |
| I_{in} | Input current | V_{BR} | Hum Voltage |
| I_{out} | Output current | $V_{(BR)R}$ | Reverse breakdown voltage |
| I_O | Average (rectified) forward current | V_D | Positive blocking voltage, diffusion potential |
| L_s | Series inductance | V_{DC} | DC voltage |
| P | Power, power dissipation | V_F | Forward voltage |
| P_D | Continuous power | V_R | Reverse voltage, negative blocking voltage |
| P_{DC} | DC Power ($P_{DC} = V_{DC} \cdot I_{DC}$) | V_{RF} | RF voltage |
| P_F | Power, generated by forward voltage and forward current | V_{RM} | Peak reverse voltage |
| P_I | Pulse power | V_{RMS} | RMS voltage |
| P_{RSM} | Reverse peak power | V_{RRM} | Repetitive peak reverse voltage |
| P_t | Power rating of transformer | V_{RSM} | Surge peak reverse voltage (non-repetitive) |
| P_{tot} | Total power dissipation | V_S | Switching voltage, supply voltage |
| Q | Q-Factor, figure of merit | V_Z | Zener voltage |
| r_f | Dynamic forward resistance | V_{z0} | Zener voltage, extra-polated for $I_Z = 0$ |
| r_s | Dynamic series resistance | V_0 | DC Voltage, half wave rectification |
| r_{thA} | Pulse thermal resistance junction to ambient air | V_{fr} | Voltage rise when switching ON (forward recovery) |
| r_{thC} | Pulse thermal junction to case or stud | V_{in} | Input Voltage |
| r_{zj} | Dynamic resistance in the breakdown region | V_{out} | Output Voltage |



Technical Information

| | |
|---------------|--|
| Z_{ZK} | Zener impedance at I_{ZK} |
| Z_{ZT} | Zener impedance at I_{ZT} |
| $\int i^2 dt$ | Load integral |
| α | Angle |
| α_{IR} | Temperature coefficient of leakage current |
| α_C | Temperature coefficient of capacitance |
| α_{VF} | Temperature coefficient of forward voltage |
| α_{VZ} | Temperature coefficient of Zener voltage |
| η_V | Rectification efficiency (quotient of the mean value of the rectified voltage and the peak value of the RF signal voltage) |
| Θ | Angle of current flow |
| v | Ratio of pulse duration to full cycle, duty cycle |
| φ | Relative humidity |
| ω | Angular frequency |

