## Small Signal Schottky diode

# RB521S-30C2

## Description

Planar silicon Schottky barrier diode encapsulated in a SOD-523 plastic SMD package.

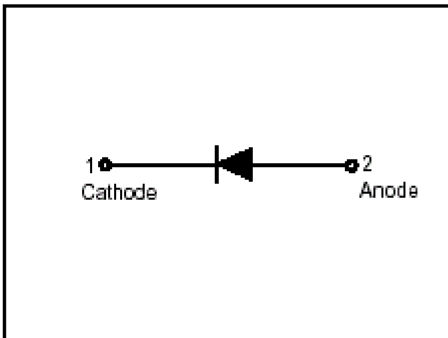
## Features

•Extremely small surface mounting type.(SC-79/SOD523)
•$I_O$=200mA guaranteed despite the size.
•Low $V_F$.($V_F$=0.4V typ. at 200mA)

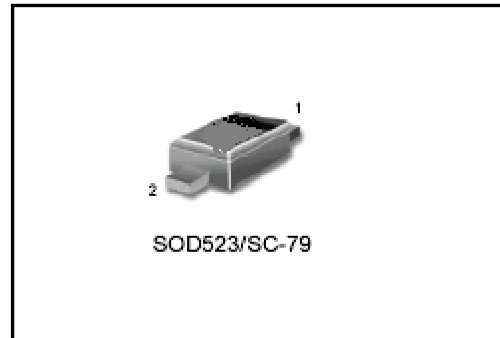
## Applications

Low current rectification and high speed switching

## Symbol

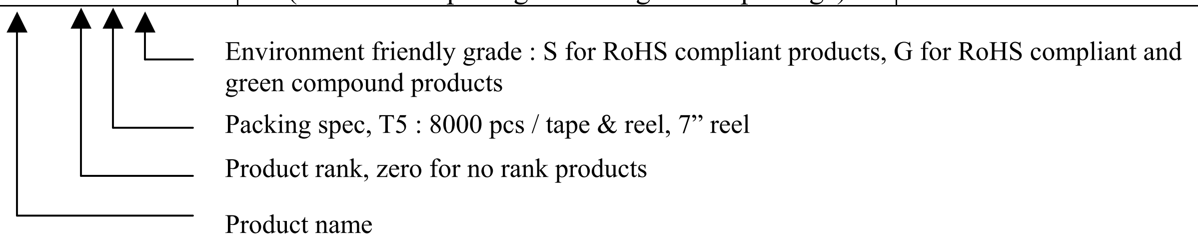



## Outline




## Ordering Information

| Device | Package | Shipping |
|---|---|---|
| RB521S-30C2-0-T5-G | SOD-523<br>(Pb-free lead plating and halogen-free package) | 8000 pcs / tape & reel |



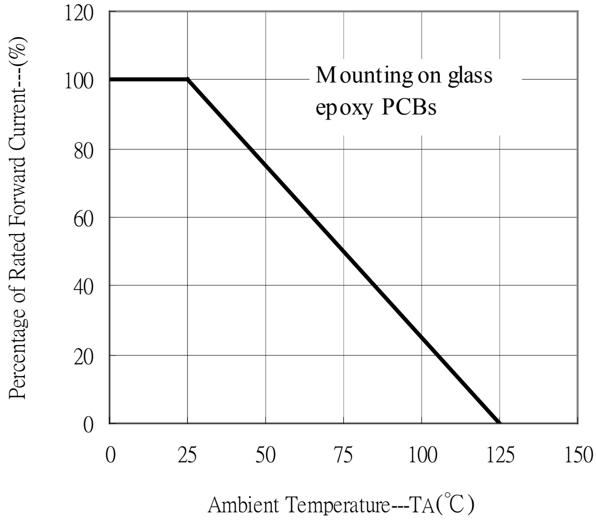
## Absolute Maximum Ratings

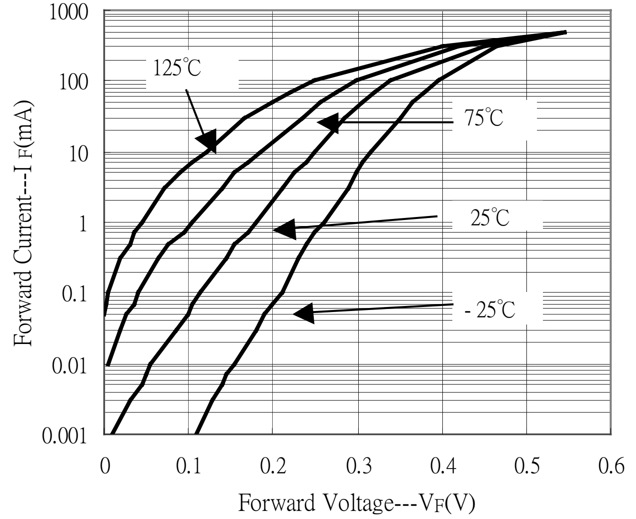
- Maximum Temperatures
  Storage Temperature Tstg.......................................... -45~+125°C
  Junction Temperature Tj .......................................... +125°C
- Maximum Voltages and Currents (Ta=25°C)
  DC Reverse Voltage $V_R$ .......................................... 30 V
  Mean Rectifying Current $I_F$ .......................................... 200 mA
  Peak Forward Surge Current $I_{FSM}$..........................................1 A

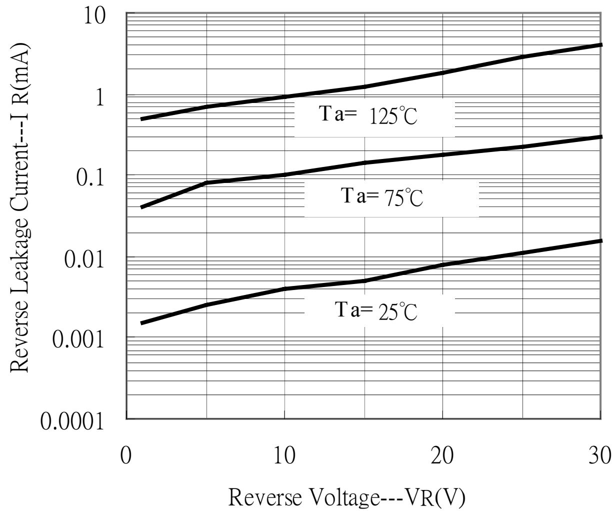
## Characteristics (Ta=25°C)

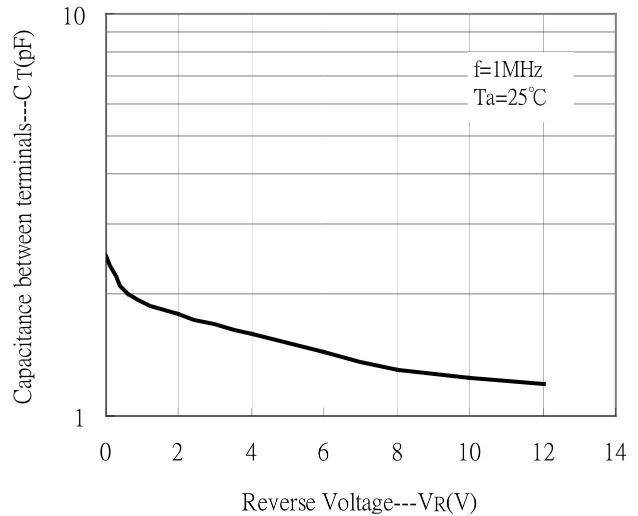
| Characteristic | Symbol | Condition | Min. | Max. | Unit |
|---|---|---|---|---|---|
| Forward Voltage | $V_F$ | $I_F$=200mA | - | 500 | mV |
| Reverse Leakage Current | $I_R$ | $V_R$=10V | - | 30 | μA |

## Typical Characteristics

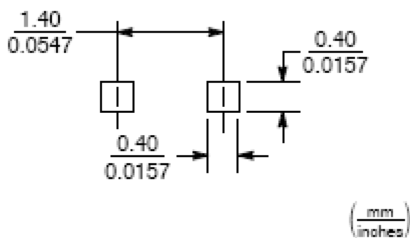


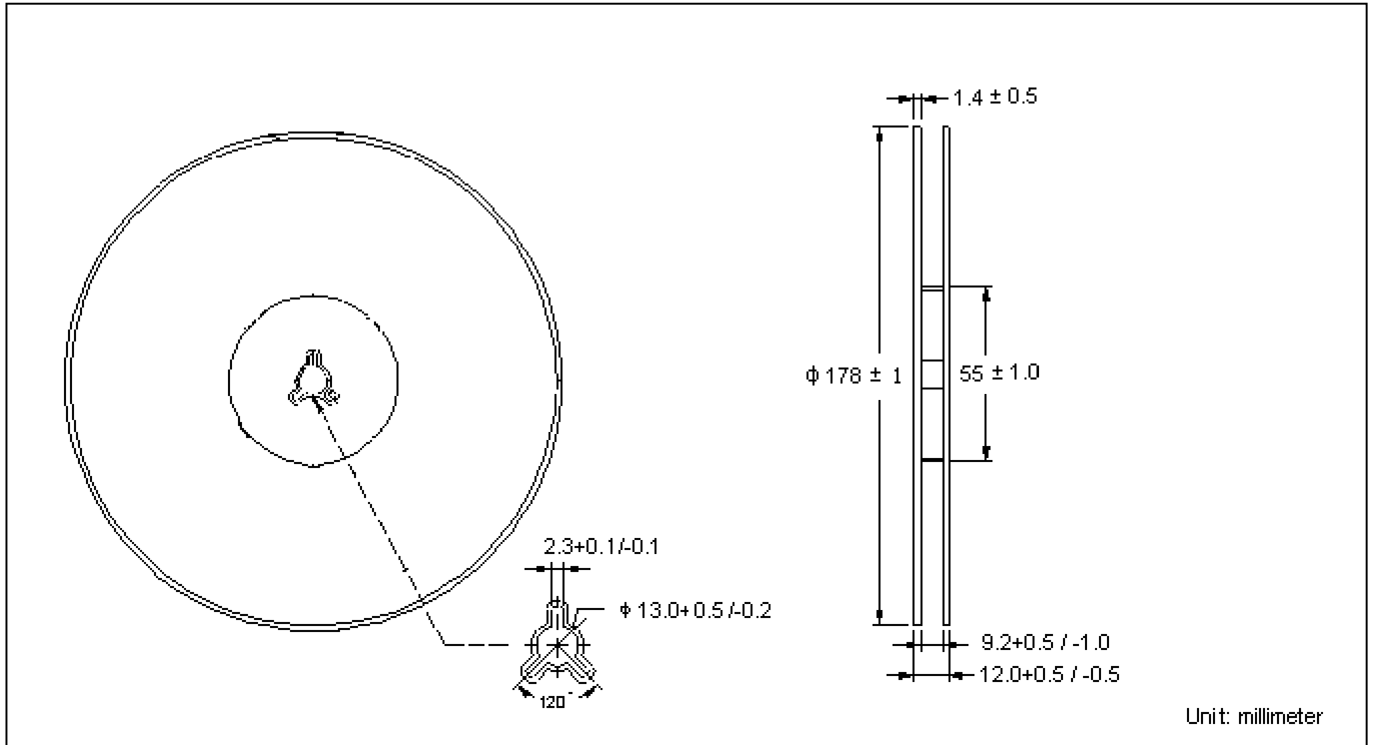



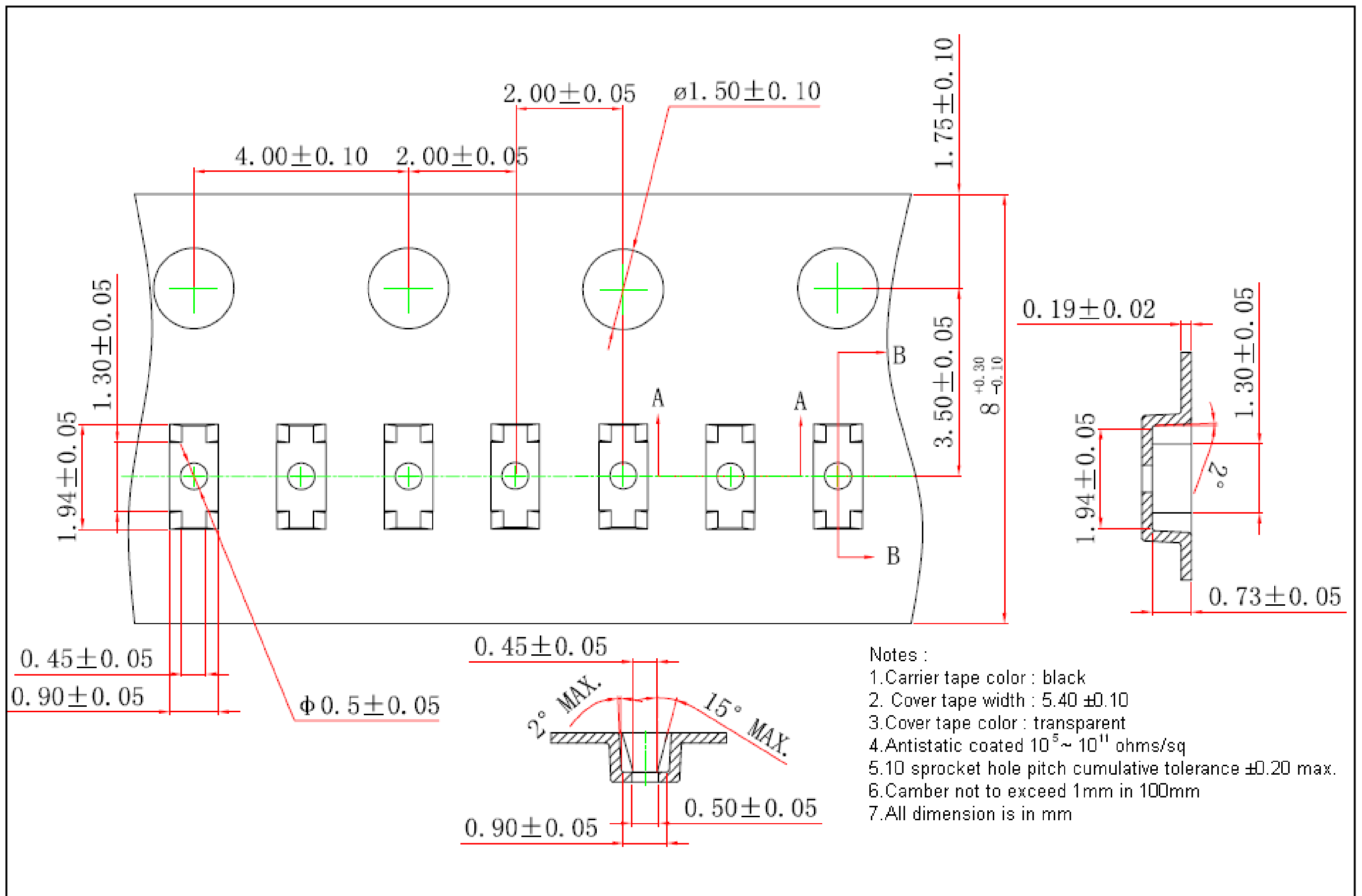

## Recommended Footprint



## Reel Dimension



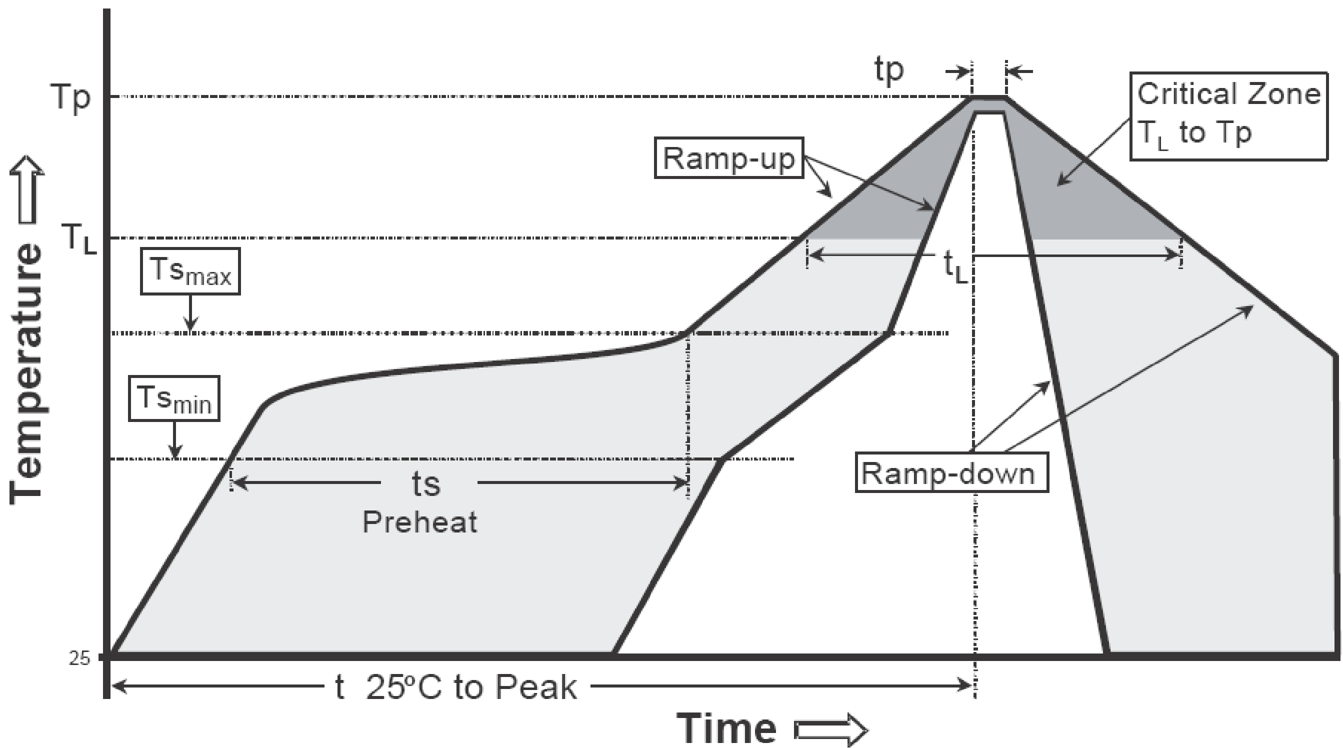

## Carrier Tape Dimension



## Recommended wave soldering condition

| Product | Peak Temperature | Soldering Time |
|---|---|---|
| Pb-free devices | 260 +0/-5 °C | 5 +1/-1 seconds |

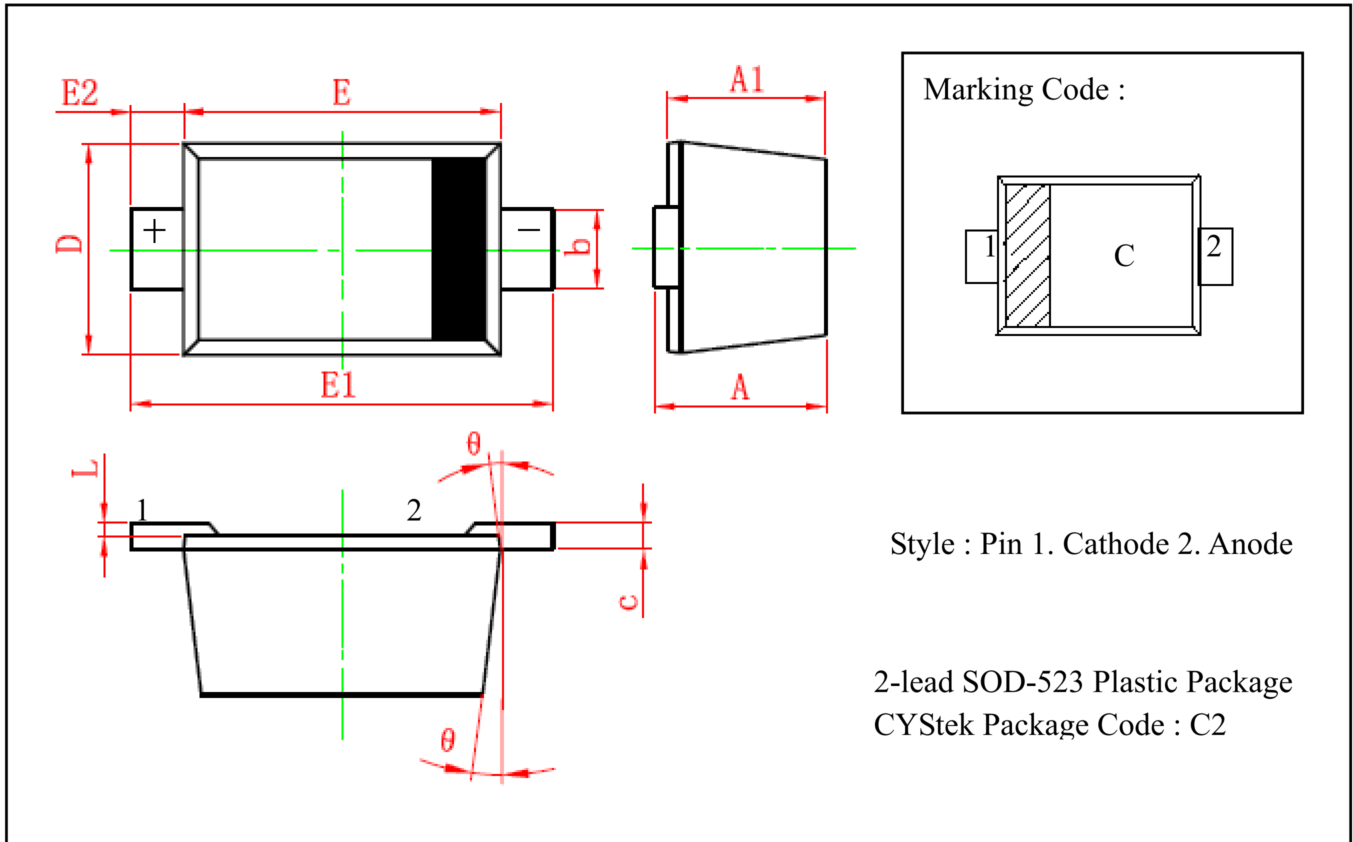
## Recommended temperature profile for IR reflow




| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|---|---|---|
| Average ramp-up rate (Tsmax to Tp) | 3°C/second max. | 3°C/second max. |
| Preheat<br>−Temperature Min(Ts min)<br>−Temperature Max(Ts max)<br>−Time(ts min to ts max) | 100°C<br>150°C<br>60-120 seconds | 150°C<br>200°C<br>60-180 seconds |
| Time maintained above:<br>−Temperature ($T_L$)<br>− Time ($t_L$) | 183°C<br>60-150 seconds | 217°C<br>60-150 seconds |
| Peak Temperature($T_P$) | 240 +0/-5 °C | 260 +0/-5 °C |
| Time within 5°C of actual peak temperature(tp) | 10-30 seconds | 20-40 seconds |
| Ramp down rate | 6°C/second max. | 6°C/second max. |
| Time 25 °C to peak temperature | 6 minutes max. | 8 minutes max. |

Note :1. All temperatures refer to topside of the package, measured on the package body surface.
2.For devices mounted on FR-4 PCB of 1.6mm or equivalent grade PCB. If other grade PCB is used, care should be taken to match the coefficients of thermal expansion between components and PCB. If they are not matched well, the solder joints may crack or the bodies of the parts may crack or shatter as the assembly cools.

## SOD-523 Dimension




*: Typical

| DIM | Millimeters | | Inches | | DIM | Millimeters | | Inches | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Min. | Max. | Min. | Min. | Max. | Min. | Max. |
| A | 0.510 | 0.770 | 0.020 | 0.031 | E | 1.100 | 1.300 | 0.043 | 0.051 |
| A1 | 0.500 | 0.700 | 0.020 | 0.028 | E1 | 1.500 | 1.700 | 0.059 | 0.067 |
| b | 0.250 | 0.350 | 0.010 | 0.014 | E2 | 0.200 REF | | 0.008 REF | |
| c | 0.080 | 0.150 | 0.003 | 0.006 | L | 0.010 | 0.070 | 0.001 | 0.003 |
| D | 0.750 | 0.850 | 0.030 | 0.033 | θ | 7° REF | | 7° REF | |

Notes: 1.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
2.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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