# MSCD302H THRU MSCD306H

## FEATURES

* Halogen-free type
* Compliance to RoHS product
* Lead less chip form, no lead damage
* Low power loss , High efficiency
* High current capability, low VF
* Plastic package has Underwriters Laboratory Flammability Classification 94V-0

## APPLICATION

* Switching mode power supply applications
* Portable equipment battery applications
* High frequency rectification
* DC / DC Converter
* Telecommunication

## MECHANICAL DATA

**Case :** Packed with FRP substrate and epoxy underfilled
**Terminals :** Pure Tin plated (Lead-Free), solderable per MIL-STD-750, Method 2026.
**Polarity :** Laser Cathode band marking
**Weight :** 0.005 gram

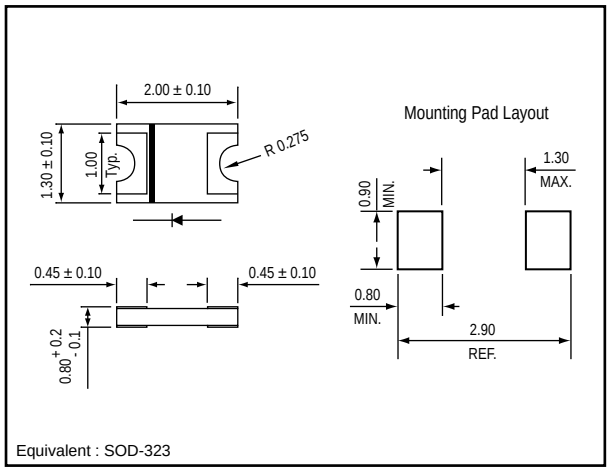
## PACKING

* **3,000 pieces per 7" (178mm ± 2mm) reel**
* **5 reels per box**
* **6 boxes per carton**

## OUTLINE DIMENSIONS

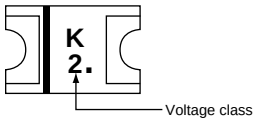
**Case : 0805**

Unit : mm




Equivalent : SOD-323

## MARKING




Voltage class: 2 = 20V, 4 = 40V, 6 = 60V

## Absolute Maximum Ratings (Ta = 25 °C)

| ITEM | Symbol | Conditions | Rating | | | Unit |
|---|---|---|---|---|---|---|
| | | | *MSCD302H* | *MSCD304H* | *MSCD306H* | |
| Repetitive peak reverse voltage | $V_{RRM}$ | | 20 | 40 | 60 | V |
| Average forward current | $I_{F(AV)}$ | | 3.0 | | | A |
| Peak forward surge current | $I_{FSM}$ | 8.3ms single half sine-wave | 10 | | | A |
| Operating junction temperature Range | $T_j$ | | -55 to +125 | | | °C |
| Storage temperature Range | $T_{STG}$ | | - 55 to +150 | | | °C |

## Electrical characteristics (Ta = 25 °C)

| ITEM | Symbol | Conditions | Type | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage (NOTE 1) | $V_F$ | $I_F$ = 1.0 A | *MSCD302H* | - | 0.42 | 0.45 | V |
| | | $I_F$ = 1.0 A | *MSCD304H* | - | 0.47 | 0.50 | |
| | | $I_F$ = 1.0 A | *MSCD306H* | - | 0.62 | 0.65 | |
| Repetitive peak reverse current (NOTE 1) | $I_{RRM}$ | $V_R$ = Max. $V_{RRM}$ , Ta = 25 °C | | - | 18 | 50 | uA |
| Junction capacitance | $C_j$ | $V_R$ = 4V, f = 1.0 MHz | | - | 115 | - | pF |
| Thermal resistance | $R_{th(JA)}$ | Junction to ambient | | - | 88 | - | °C/W |
| | $R_{th(JL)}$ | Junction to lead | | - | 28 | - | °C/W |

NOTES : (1) Pulse test width PW=300usec , 1% duty cycle.
(2) Mounted on P.C. board with 0.2 x 0.2"(5.0 x5.0mm) copper pad areas.

FIG.1 - FORWARD CURRENT DERATING CURVE

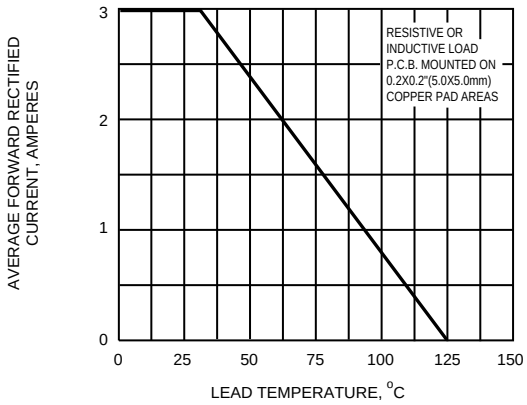



FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

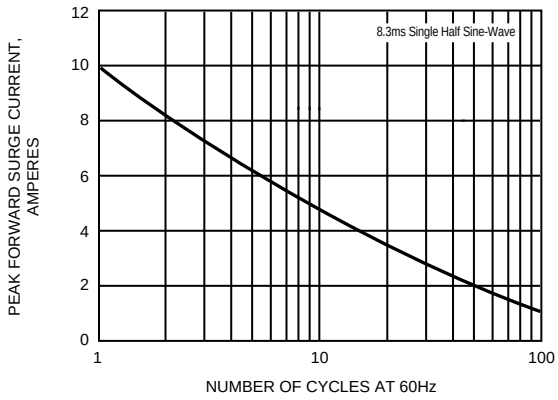



FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

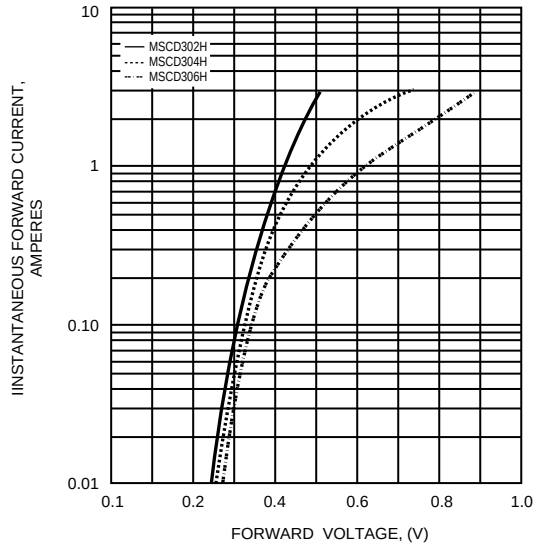



FIG.4 - TYPICAL REVERSE CHARACTERISTICS

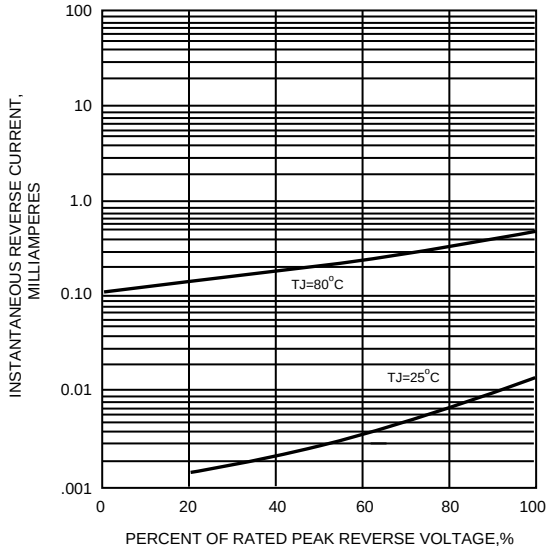



FIG.5 - TYPICAL JUNCTION CAPACITANCE

