## FEATURES

- Ultra small plastic SMD package
- High continuous reverse voltage: 300V
- Repetitive peak forward current: 250 mA
- High switching speed: max. 50ns


**SOD-523**

## APPLICATIONS

- High speed switching.
- High voltage switching.

**Top View**

## MAXIMUM RATING @ Ta=25℃ unless otherwise specified

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Repetitive peak reverse voltage | $V_{RRM}$ | 300 | V |
| Continuous reverse voltage | $V_R$ | 300 | V |
| Continuous forward current $T_s$≤90°C; Note 1 | $I_F$ | 250 | mA |
| Repetitive forward current $t_p$=1ms | $I_{FRM}$ | 1 | A |
| Non-repetitive peak forward surge current $t_p$=1ms; square wave; $T_j$=25°C prior to surge | $I_{FSM}$ | 4.5 | A |
| Total power dissipation $T_s$≤90°C; Note 1 | $P_{tot}$ | 500 | mW |
| Junction temperature | $T_j$ | 150 | ℃ |
| Storage And operating ambient temperature | $T_{stg}$, Tamb | -65 to +150 | ℃ |

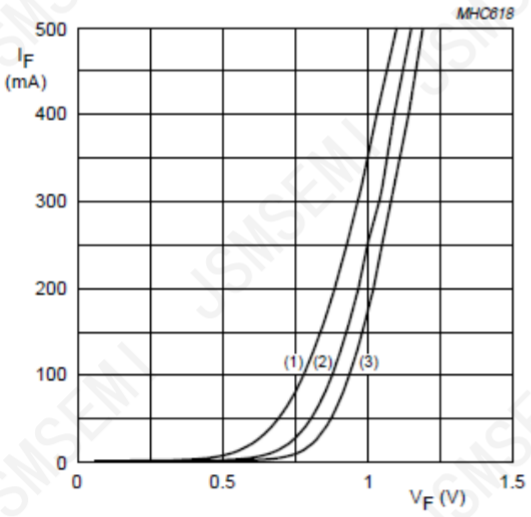
**Note**

1. $T_s$ is the temperature at the soldering point of the cathode tab.

## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

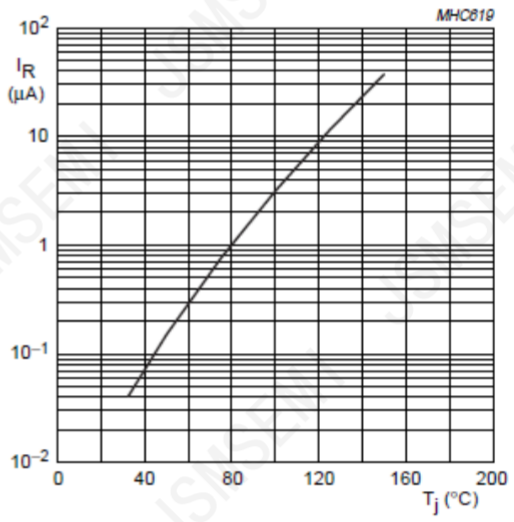
| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| breakdown voltage | $V_{BR}$ | $I_R$=100uA | 300 | 340 | | V |
| Forward voltage | $V_F$ | $I_F$=100mA | | 0.95 | 1.1 | V |
| Reverse current | $I_R$ | $V_R$=250V | | 30 | 150 | nA |
| | | $V_R$=250V,$T_J$=150 ℃ | | 40 | 100 | μA |
| Diode capacitance | $C_d$ | $V_R$=0,f=1MHz | | 0.4 | 5 | pF |
| Reverse recovery time | $t_{rr}$ | when switched from $I_F$=30 mA to $I_R$=30mA; $R_L$=100W; measured at $I_R$=3mA | | 16 | 50 | ns |

## TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified




(1) $T_{amb}$ = 150 °C.
(2) $T_{amb}$ = 75 °C.
(3) $T_{amb}$ =25 °C.

Fig 1 Forward current as a function of forward voltage; typical values.




$V_R = V_{Rmax}$; typical values.

Fig 2 Reverse current as a function of junction temperature.

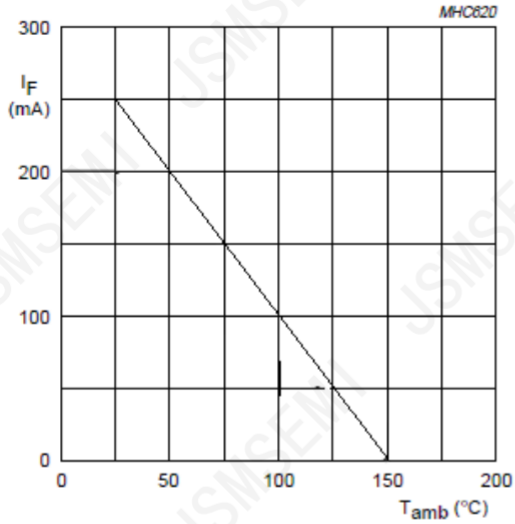



Fig 3 Maximum permissible continuous forward current as a function of ambient temperature.

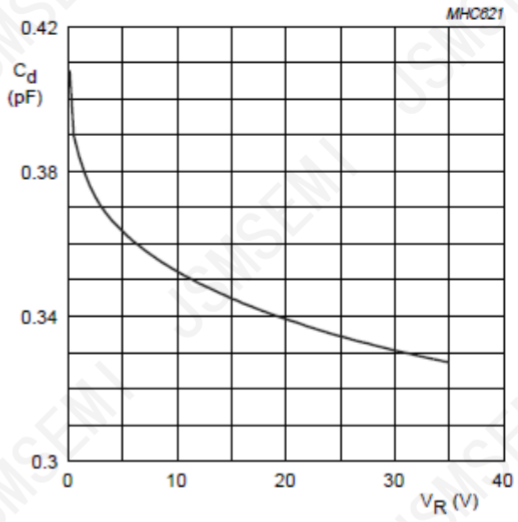
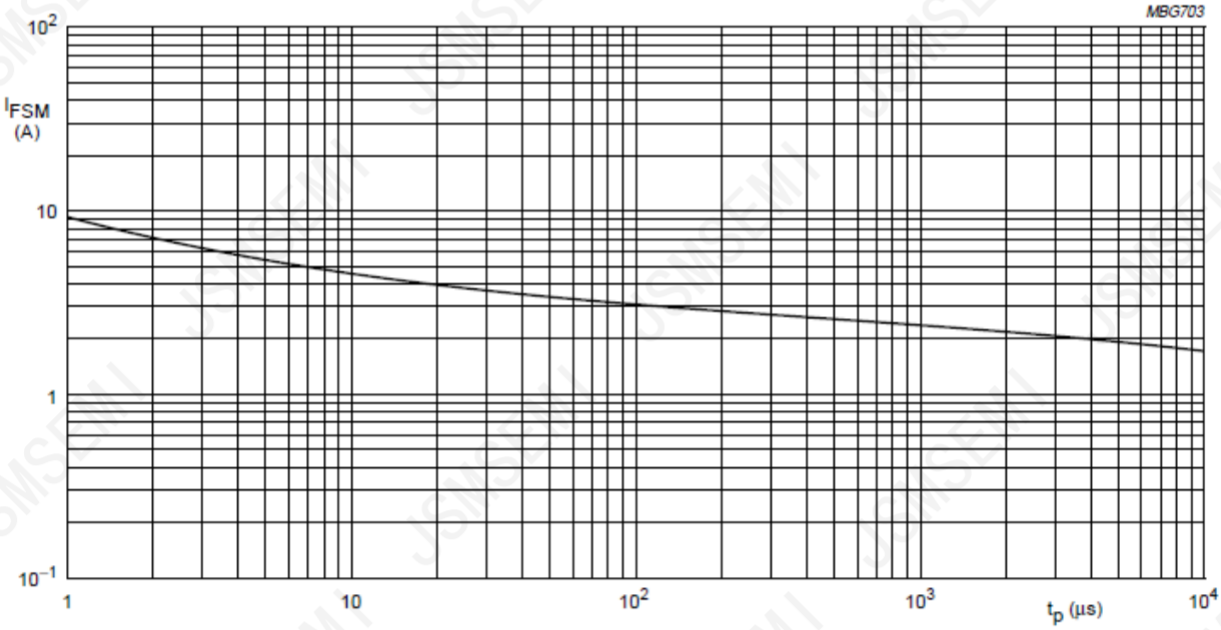



Fig 4 Diode capacitance as a function of reverse voltage; typical values.

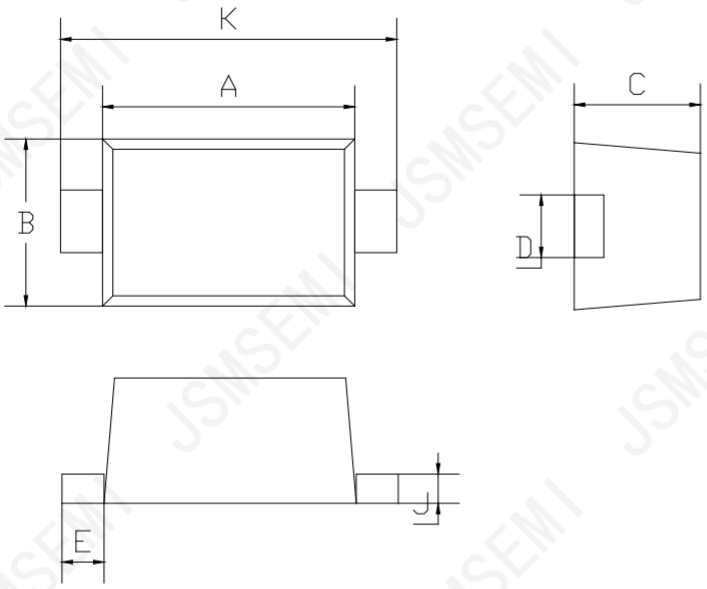



Based on square wave currents.
$T_j$ = 25°C prior to surge.

Fig 5 Maximum permissible non-repetitive peak forward current as a function of pulse duration.

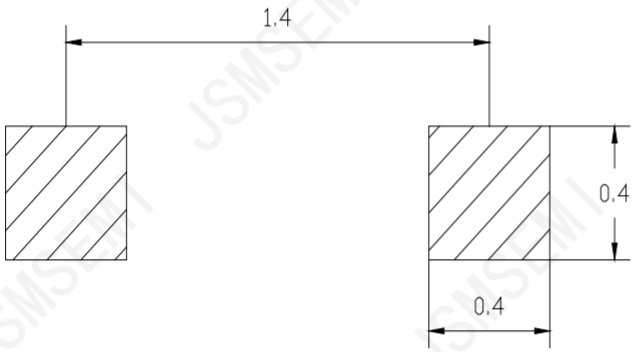
## PACKAGE OUTLINE

Plastic surface mounted package SOD-523




| SOD-523 | | |
|---|---|---|
| Dim | Min | Max |
| A | 1.10 | 1.30 |
| B | 0.70 | 0.90 |
| C | 0.50 | 0.70 |
| D | 0.25 | 0.35 |
| E | 0.15 | 0.25 |
| J | 0.05 | 0.15 |
| K | 1.50 | 1.70 |
| All Dimensions in mm | | |

## SOLDERING FOOTPRINT




Unit: mm

## Revision History

| Rev. | Change | Date |
|---|---|---|
| V1.0 | Initial version | 2/23/2024 |
| | | |

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