

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Low Diode Capacitance
- Low Diode Forward Resistance

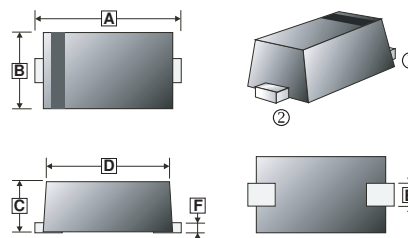
## MARKING

A5

## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOD-523 | 8K  | 7 inch      |

## SOD-523



| REF. | Millimeter |      | REF. | Millimeter |      |
|------|------------|------|------|------------|------|
|      | Min.       | Max. |      | Min.       | Max. |
| A    | 1.50       | 1.70 | D    | -          | -    |
| B    | 0.75       | 0.85 | E    | 0.25       | 0.35 |
| C    | 0.70       | 0.50 | F    | 0.07       | 0.17 |

## MAXIMUM RATINGS (Single diode @ $T_A = 25^\circ\text{C}$ )

| Parameter                                           | Symbol          | Ratings    | Unit                        |
|-----------------------------------------------------|-----------------|------------|-----------------------------|
| Continuous Reverse Voltage                          | $V_R$           | 60         | V                           |
| Continuous Forward Current                          | $I_F$           | 50         | mA                          |
| Power Dissipation ( $T_A = 90^\circ\text{C}$ )      | $P_D$           | 715        | mW                          |
| Power Dissipation                                   |                 | 150        |                             |
| Thermal Resistance from Junction to soldering point | $R_{\theta JS}$ | 85         | $^\circ\text{C} / \text{W}$ |
| Junction, Storage Temperature                       | $T_J, T_{STG}$  | -55 ~ +150 | $^\circ\text{C}$            |

## ELECTRICAL CHARACTERISTICS (at $T_a = 25^\circ\text{C}$ unless otherwise specified)

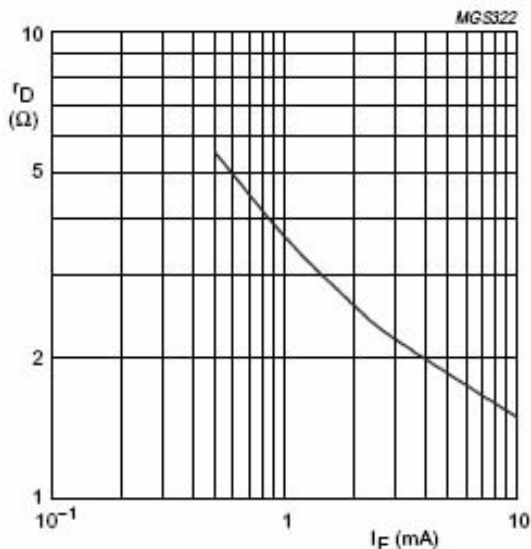
| Parameters                            | Symbol   | Min. | Typ. | Max. | Unit     | Test Conditions                         |
|---------------------------------------|----------|------|------|------|----------|-----------------------------------------|
| Continuous Reverse Voltage            | $V_R$    | 50   | -    | -    | V        | $I_R = 10\mu\text{A}$                   |
| Forward Voltage                       | $V_F$    | -    | -    | 1.1  | V        | $I_F = 50\text{mA}$                     |
| Reverse Current                       | $I_R$    | -    | -    | 100  | nA       | $V_R = 50\text{V}$                      |
| Diode Capacitance                     | $C_{D1}$ | -    | 0.4  | -    | pF       | $V_R = 0, f = 1\text{MHz}$              |
|                                       | $C_{D2}$ | -    | -    | 0.55 |          | $V_R = 1, f = 1\text{MHz}$              |
|                                       | $C_{D3}$ | -    | -    | 0.35 |          | $V_R = 5\text{V}, f = 1\text{MHz}$      |
| Diode Forward Resistance <sup>1</sup> | $r_D$    | -    | -    | 9    | $\Omega$ | $I_F = 0.5\text{mA}, f = 100\text{MHz}$ |
|                                       |          | -    | -    | 6.5  |          | $I_F = 1\text{mA}, f = 100\text{MHz}$   |
|                                       |          | -    | -    | 2.5  |          | $I_F = 10\text{mA}, f = 100\text{MHz}$  |

Note:

1. Guaranteed on AQL basis: inspection level S4, AQL 1.0

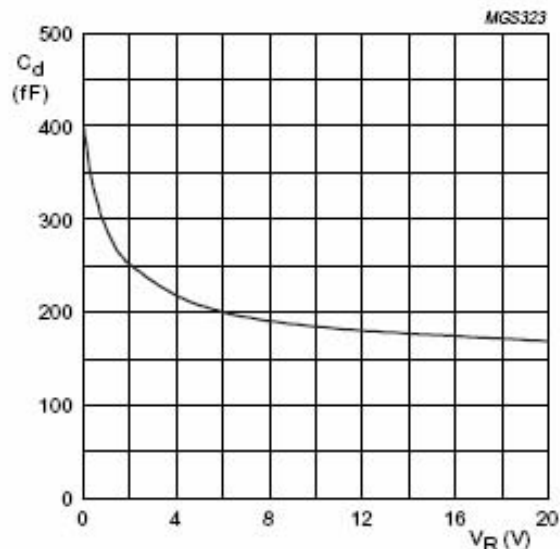
## RATINGS AND CHARACTERISTIC CURVES

**BAP51-02**



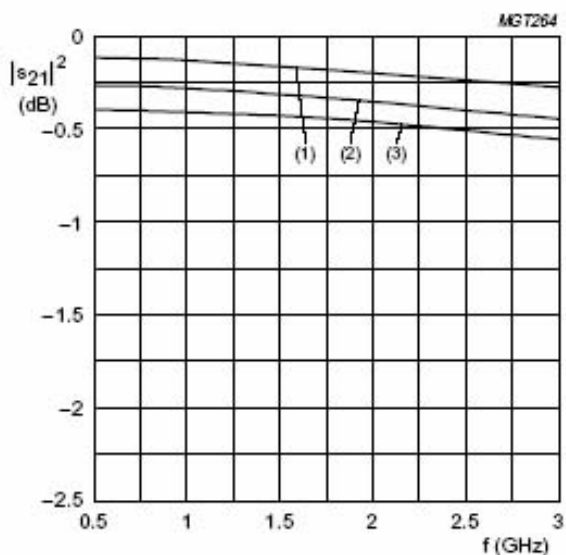
$f = 100$  MHz;  $T_j = 25$  °C.

**Fig.2** Forward resistance as a function of forward current; typical values.



$f = 1$  MHz;  $T_j = 25$  °C.

**Fig.3** Diode capacitance as a function of reverse voltage; typical values.

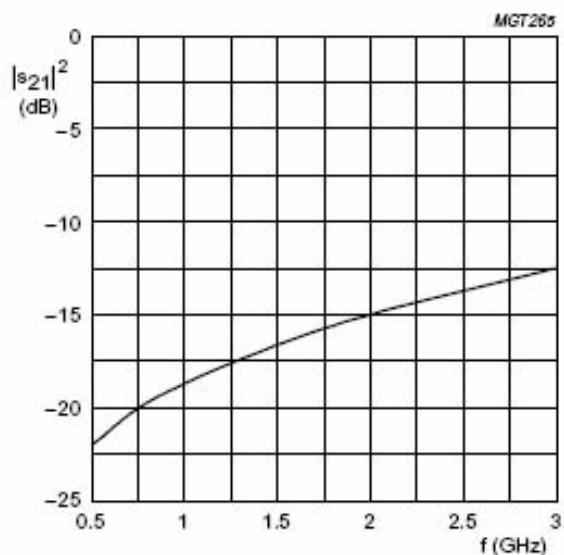


(1)  $I_F = 10$  mA. (2)  $I_F = 1$  mA. (3)  $I_F = 0.5$  mA.

Diode inserted in series with a 50  $\Omega$  stripline circuit and biased via the analyzer Tee network.

$T_{amb} = 25$  °C.

**Fig.4** Insertion loss ( $|s_{21}|^2$ ) of the diode as a function of frequency; typical values.



Diode zero biased and inserted in series with a 50  $\Omega$  stripline circuit.  
 $T_{amb} = 25$  °C.

**Fig.5** Isolation ( $|s_{21}|^2$ ) of the diode as a function of frequency; typical values.