

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

## FEATURES

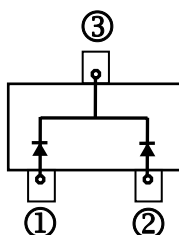
- Low diode capacitance
- Low diode forward resistance
- Low series inductance
- High voltage, current controlled
- RF resistor for RF attenuators and switches
- For applications up to 3 GHz
- RF attenuators and switches

## PACKAGING INFORMATION

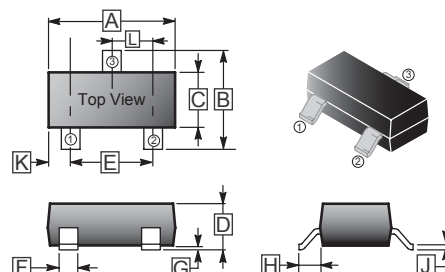
Weight: 0.0078 g (Approximate)

## MARKING CODE

5K



## SOT-23



| REF. | Millimeter |      | REF. | Millimeter |       |
|------|------------|------|------|------------|-------|
|      | Min.       | Max. |      | Min.       | Max.  |
| A    | 2.80       | 3.04 | G    | 0.09       | 0.18  |
| B    | 2.10       | 2.55 | H    | 0.45       | 0.60  |
| C    | 1.20       | 1.40 | J    | 0.08       | 0.177 |
| D    | 0.89       | 1.15 | K    | 0.6 REF.   |       |
| E    | 1.80       | 2.00 | L    | 0.89       | 1.02  |
| F    | 0.30       | 0.50 |      |            |       |

## MAXIMUM RATINGS (at Ta = 25°C unless otherwise specified)

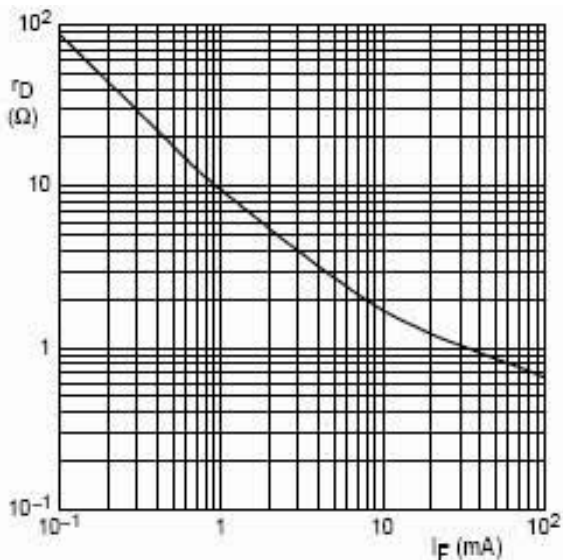
| Parameter                     | Symbol         | Ratings         | Unit |
|-------------------------------|----------------|-----------------|------|
| Continuous Reverse Voltage    | $V_R$          | 175             | V    |
| Continuous Forward Current    | $I_F$          | 100             | mA   |
| Power Dissipation             | $P_D$          | 250             | mW   |
| Junction, Storage Temperature | $T_J, T_{STG}$ | 150, -65 ~ +150 | °C   |

## ELECTRICAL CHARACTERISTICS (at Ta = 25°C unless otherwise specified)

| Parameters                      | Symbol | Min. | Typ. | Max. | Unit          | Test Conditions                                                                                                                   |
|---------------------------------|--------|------|------|------|---------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Forward Voltage                 | $V_F$  | -    | -    | 1.1  | V             | $I_F = 50 \text{ mA}$                                                                                                             |
| Reverse Voltage Leakage Current | $I_R$  | -    | -    | 10   | $\mu\text{A}$ | $V_R = 175 \text{ V}$                                                                                                             |
|                                 |        |      |      | 1    |               | $V_R = 20 \text{ V}$                                                                                                              |
| Diode Capacitance               | $C_D$  | -    | 0.52 | -    | $\text{pF}$   | $V_R = 0, f = 1 \text{ MHz}$                                                                                                      |
|                                 |        |      | 0.37 | -    |               | $V_R = 1 \text{ V}, f = 1 \text{ MHz}$                                                                                            |
|                                 |        |      | 0.23 | 0.35 |               | $V_R = 20 \text{ V}, f = 1 \text{ MHz}$                                                                                           |
| Diode Forward Resistance        | $r_D$  | -    | 20   | 40   | $\Omega$      | $I_F = 0.5 \text{ mA}, f = 100 \text{ MHz}$                                                                                       |
|                                 |        |      | 10   | 20   |               | $I_F = 1 \text{ mA}, f = 100 \text{ MHz}$                                                                                         |
|                                 |        |      | 2    | 3.8  |               | $I_F = 10 \text{ mA}, f = 100 \text{ MHz}$                                                                                        |
|                                 |        |      | 0.7  | 1.35 |               | $I_F = 100 \text{ mA}, f = 100 \text{ MHz}$                                                                                       |
| Charge Carrier Life Time        | $t_L$  | -    | 1.55 | -    | $\mu\text{S}$ | When switched from<br>$I_F = 10 \text{ mA}$ to $I_R = 6 \text{ mA}$ ;<br>$R_L = 100 \Omega$ ;<br>measured at $I_R = 3 \text{ mA}$ |
| Series Inductance               | $L_S$  | -    | 1.4  | -    | nH            |                                                                                                                                   |

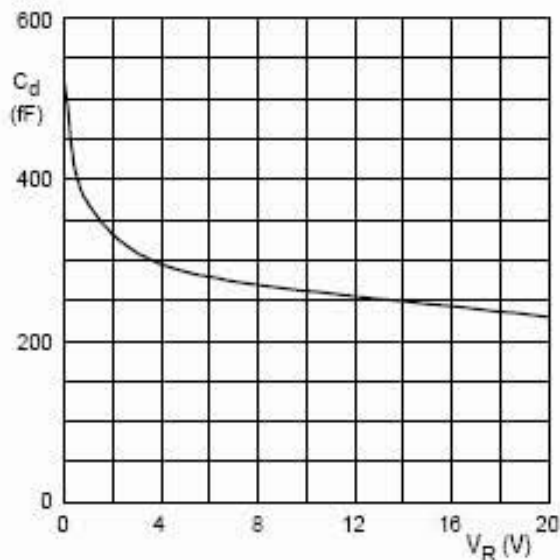
**RATINGS AND CHARACTERISTIC CURVES**

**BAP64-05**



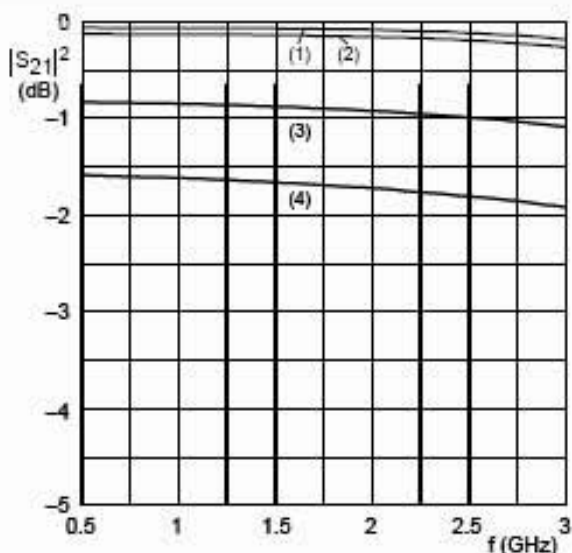
$f = 100 \text{ MHz}; T_J = 25 \text{ }^\circ\text{C}.$

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



$f = 1 \text{ MHz}; T_J = 25 \text{ }^\circ\text{C}.$

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

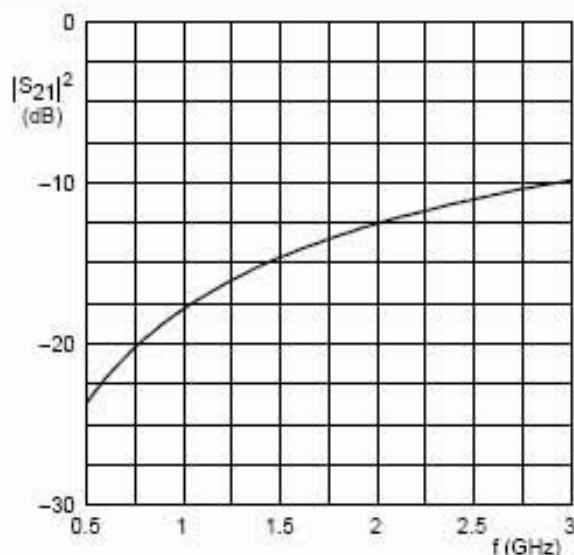


- (1)  $I_F = 100 \text{ mA}.$
- (2)  $I_F = 10 \text{ mA}.$
- (3)  $I_F = 1 \text{ mA}.$
- (4)  $I_F = 0.5 \text{ mA}.$

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

$T_{\text{amb}} = 25 \text{ }^\circ\text{C}.$

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



Diode zero biased and inserted in series with a  $50 \text{ } \Omega$  stripline circuit.

$T_{\text{amb}} = 25 \text{ }^\circ\text{C}.$

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