## Description:

Surface Mount Mixer and Detector Schottky Diodes

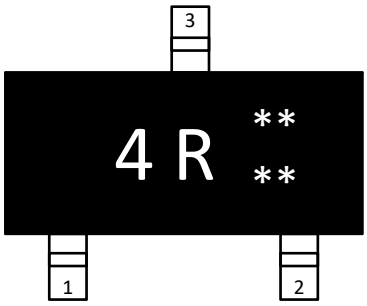
## Features:

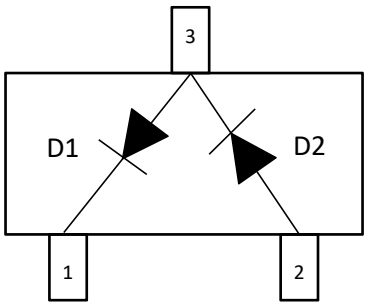
- Low inductance $L_S$ = 1.5 nH (typical)
- Low capacitance C = 0.27 pF (typical) at 1 MHz
- Industry standard SOT23-3 package
- Pb-free, RoHS compliant and halogen-free

## Applications:

- Sensitive RF and microwave detector circuits
- Sampling and mixer circuits
- High-volume wireless
- WiFi and mobile
- Low-noise receivers in high-sensitivity ID tags
- Radio designs

## Circuit Diagram & Pin Configuration:




| PartNumber | Package | Marking | Packing | Quantityper reel | Flammability Rating | ReelSize |
|---|---|---|---|---|---|---|
| SMS7621-006LF | SOT-23 | 4R | Tape&Reel | 3,000 PCS | UL94V-0 | 7inches |

| Absolute maximum ratings at TA = 25°C , unless otherwise specified | | | | | |
|---|---|---|---|---|---|
| Parameters | Symbol | Values | | Unit | Note or test condition |
| | | Min. | Max. | | |
| Diode reverse voltage | $V_R$ | - | 4 | V | |
| Forward current | $I_F$ | - | 110 | mA | |
| Total power dissipation | $P_{TOT}$ | - | 100 | mW | $T_S \leq 77$ °C (1) |
| Junction temperature | $T_J$ | - | 150 | °C | |
| Operating temperature | $T_{OP}$ | -55 | 150 | | |
| Storage temperature | $T_{STG}$ | -55 | 150 | | |

Attention:
Stresses above the maximum values listed here may cause permanent damage to the device.Exposure to absolute maximum rating conditions for extended periods may affect device reliability. Exceeding only one of these values may cause irreversible damage to the component.
(1) $T_S$ is the soldering point temperature.

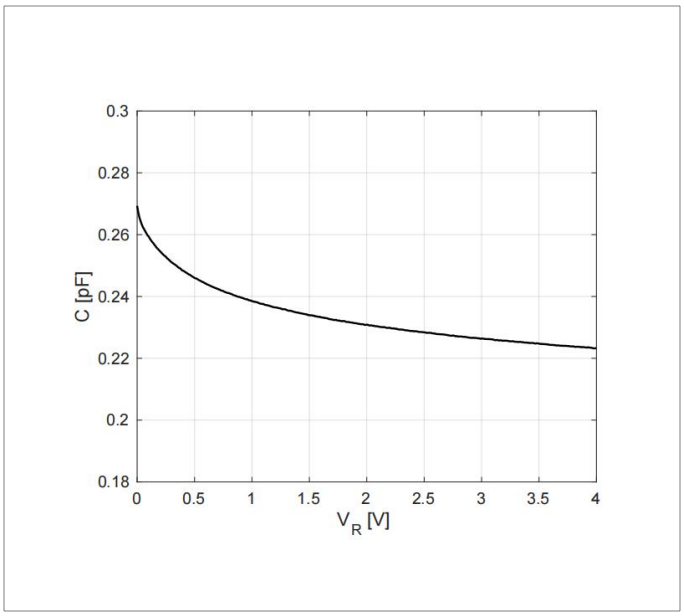
| Electrical characteristics at TA = 25°C , unless otherwise specified | | | | | | |
|---|---|---|---|---|---|---|
| Parameters | Symbol | Values | | | Unit | Note or test condition |
| | | Min. | Typ. | Max. | | |
| Breakdown voltage | $V_{BR}$ | 4 | - | - | V | $I_R$ = 10 µA |
| Forward voltage | $V_F$ | 0.2 | 0.25 | 0.30 | V | $I_F$ = 1 mA |
| | | - | 0.35 | 0.41 | | $I_F$ = 10 mA |
| Forward voltage matching | $\Delta V_F$ | - | - | 10 | mV | $I_F$ = 1 mA 1) |
| Differential forward resistance | $R_F$ | - | 8 | - | Ω | $I_F$= 10 mA / 50 mA 2) |
| | | - | 12 | 18 | | $I_F$ = 5 mA |
| Capacitance | C | - | 0.26 | 0.3 | pF | $V_R$ = 0 V, f = 1 MHz |
| Inductance | $L_S$ | - | 1.5 | - | nH | |

1 $\Delta V_F$ is the difference between lowest and highest $V_F$ in a multiple diode component.

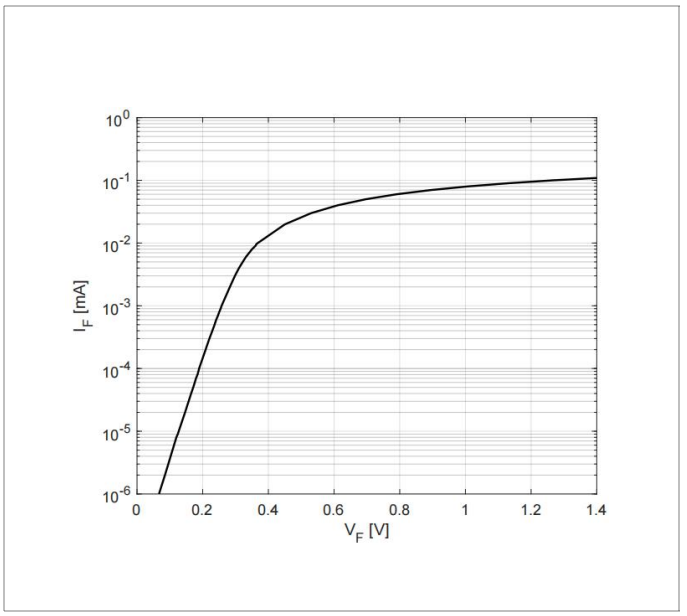
2 $$R_F = \frac{V_F\,(50\text{ mA}) - V_F\,(10\text{ mA})}{50\text{ mA} - 10\text{ mA}}$$

## Characteristic curves $A_t$ $T_A$ = 25 ° C, unless otherwise specified

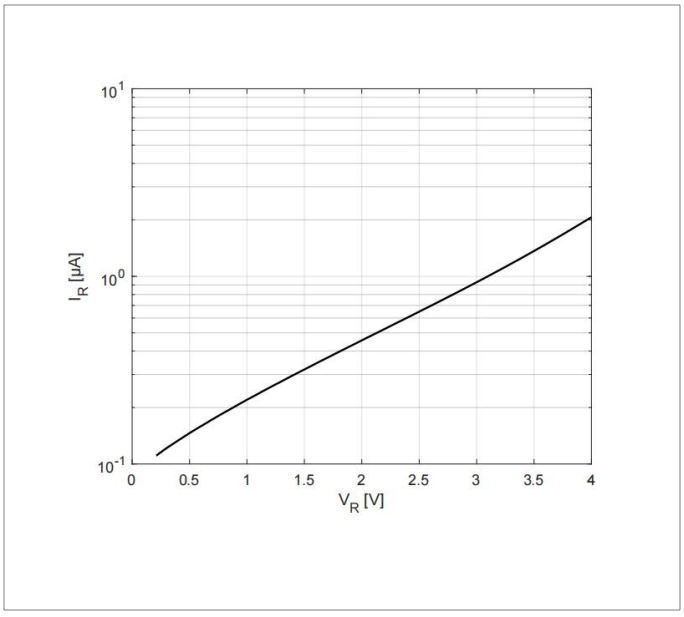
### Figure 1 Diode capacitance C vs. reverse voltage $V_R$ at frequency f = 1 MHz



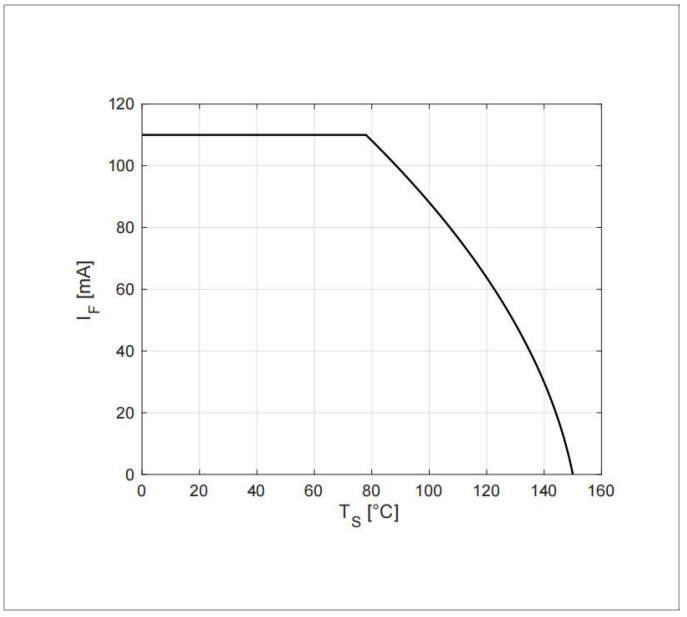

### Figure 2 Forward current $I_F$ vs. forward voltage $V_F$




### Figure 3 Reverse current $I_R$ vs. reverse voltage $V_R$




### Figure 4 Permissible forward current $I_F$ in DC operation



Characteristic curves $A_t$ $T_A$ = 25 ° C, unless otherwise specified

Figure 5 Thermal resistance $R_{thJS}$ in pulse operation

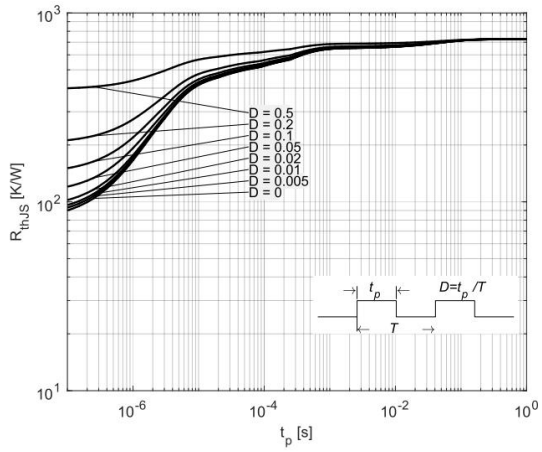
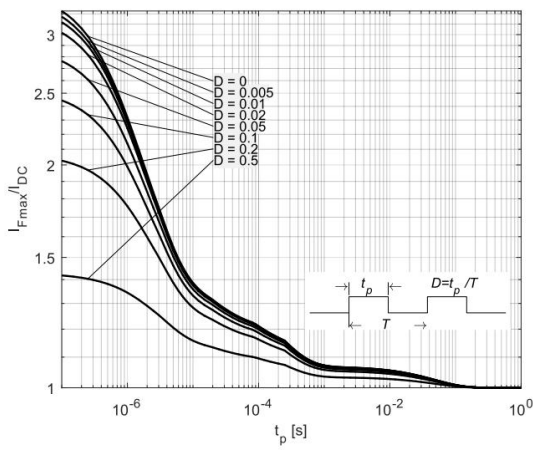
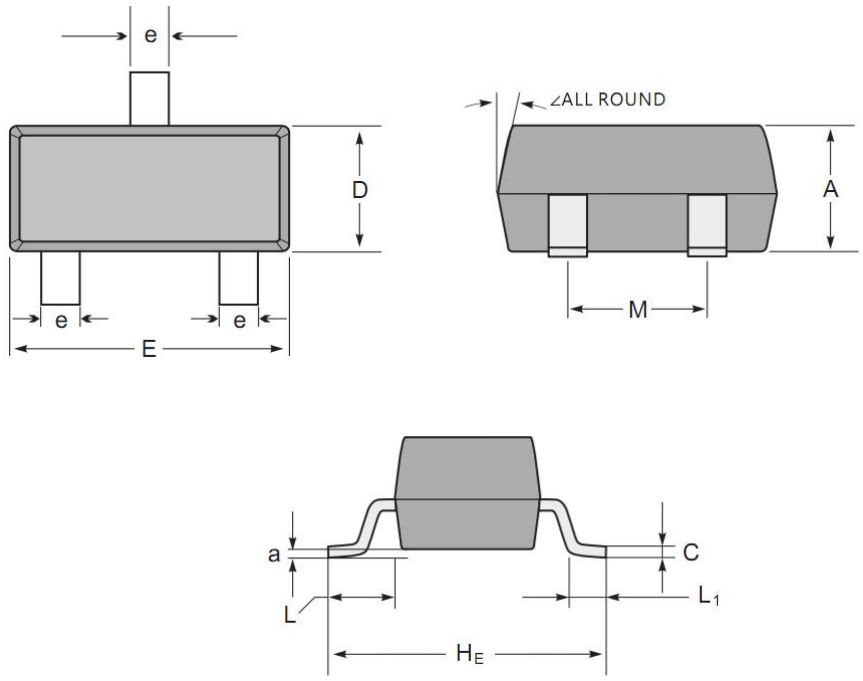



Figure 6 Permissible forward current ratio $I_{Fmax}/I_{DC}$ in pulse operation

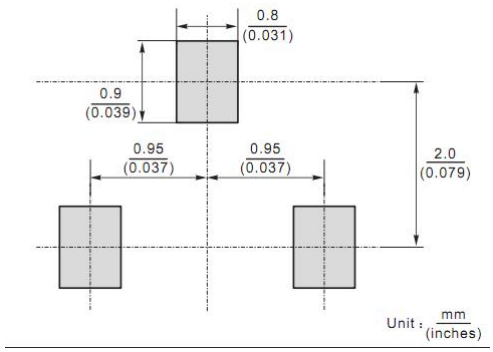


## SOT-23 Package Outline Dimensions




| UNIT | | A | C | D | E | HE | e | M | L | L1 | a | ∠ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | max | 1.1 | 0.15 | 1.4 | 3.0 | 2.6 | 0.5 | 1.95 | 0.55 (ref) | 0.36 (ref) | 0.0 | 12° |
| | min | 0.9 | 0.08 | 1.2 | 2.8 | 2.2 | 0.3 | 1.7 | | | 0.15 | |
| mil | max | 43 | 6 | 55 | 118 | 102 | 20 | 77 | 22 (ref) | 14 (ref) | 0.0 | |
| | min | 35 | 3 | 47 | 110 | 87 | 12 | 67 | | | 6 | |

## The recommended mounting pad size



## NOTICE

The information presented in this document is for reference only. Semiteh reserves the right to make changes without notice for the specification of the products displayed herein.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Semiteh Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damagers resulting from such improper use of sale.

This publication supersedes & replaces all information reviously supplied. For additional information, please visit our website http://www.Semiteh.com , or consult your nearest Semiteh’ s sales office for further assistance.