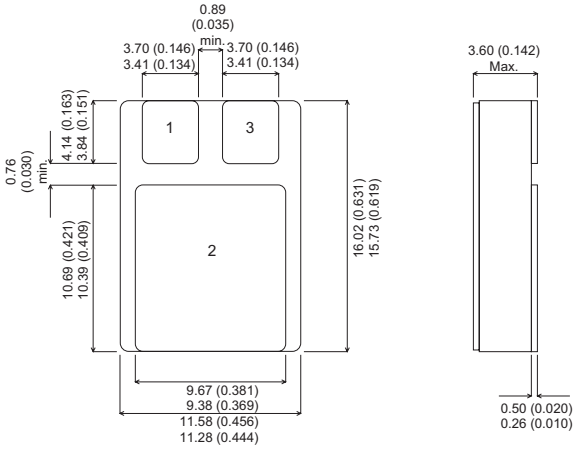
# SML09GB22U2

## MECHANICAL DATA

Dimensions in mm (inches)




**PACKAGE SMD1 (TO-267AB)**

**Underside View**

PAD 1 — Anode PAD 2 — Cathode PAD 3 — Not used

# SCHOTTKY DIODE IN HERMETIC CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

## ABSOLUTE MAXIMUM RATINGS ($T_C$ = 25°C unless otherwise stated)

| | | |
|---|---|---|
| $V_{RRM}$ | Repetitive Peak Reverse Voltage | 220V |
| $I_{FAV}$ | Average Forward Current $T_C$ = 25°C | 12A |
| | $T_C$ = 90°C | 9A |
| $I_{FSM}$ | Maximum surge forward current $T_{vj}$ = 45 °C; $t_p$ = 10ms (50Hz), sine | 20A |
| $T_{vj}$ | Virtual Junction Temperature | -55 + 175°C |
| $T_{stg}$ | Storage Temperature Range | -55 + 150°C |
| $P_{tot}$ | $T_C$ = 25°C | 78W |
| $R_{thjc}$ | Thermal Characteristics | 3.2°C/W |

## ELECTRICAL CHARACTERISTICS ($T_A$ = 25°C unless otherwise stated)

| Parameter | | Test Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| $I_{R*}$ | Reverse Current | $T_{VJ}$ = 25°C | $V_R = V_{RRM}$ | | | 1.3 | mA |
| | | $T_{VJ}$ = 125°C | $V_R = V_{RRM}$ | | 1.3 | | |
| $V_{F*}$ | Forward Voltage | $I_F$ = 5A | $T_{VJ}$ = 125°C | | 1.3 | | V |
| | | $I_F$ = 5A | $T_{VJ}$ = 25°C | 1.2 | | 1.5 | |
| $C_J$ | Capacitance | $V_R$ = 100V | $T_{VJ}$ = 125°C | 18 | | | $P^F$ |



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Document Number 2931
Issue 2

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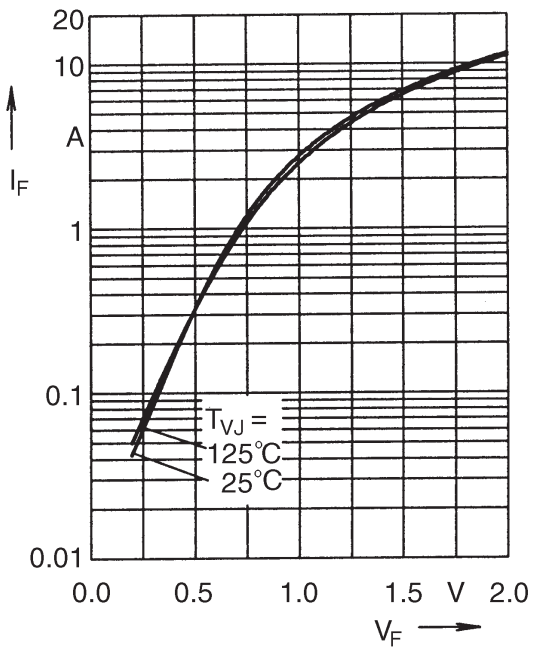


**FIG. 1 TYP. FORWARD CHARCTERISTICS**

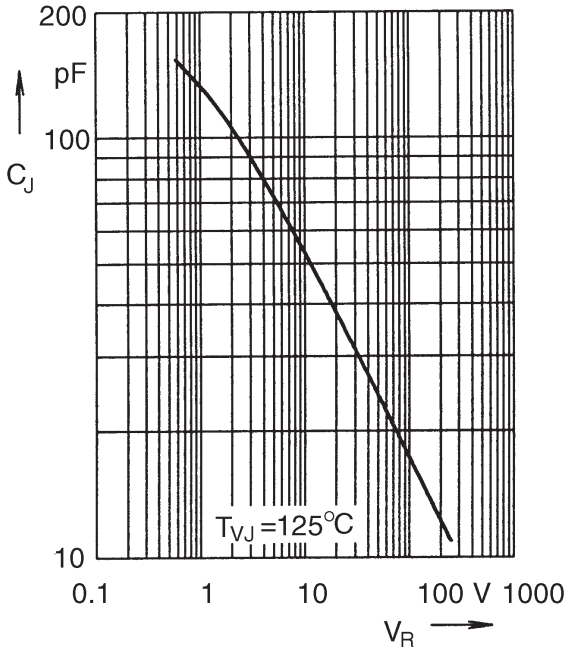


**FIG. 2 TYP. JUNCTION CAPACITY VERSUS BLOCKING VOLTAGE**

**NOTE:**
Explanatory comparison for the basic operational behaviour of rectifier diodes and Gallium Arsenide Schottky diodes.

| | Rectifier Diode | GaAs Schottky Didoe |
|---|---|---|
| Conduction | by majority + minority carriers | by majority carriers only |
| forward characteristics | $V_F$ ($I_F$) | $V_F$($I_F$), See Fig 1 |
| turn off characteristics | extraction of excess carriers | reverse current charges |
| | causes temperature dependant | junction capacity $C_j$, see Fig 2; |
| | reverse recovery ($t_{rr}$, $I_{RM}$, $Q_{rr}$) | not temperature dependant |
| turn on characteristics | delayed saturation leads to $V_{FR}$ | no turn on overvoltage peak. |



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