

General Description

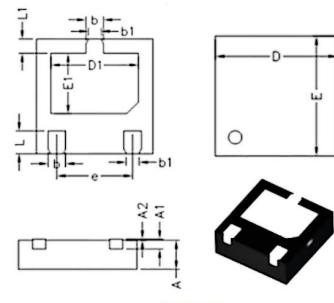
The **GS24VH20UAQ** is designed to protect voltage sensitive components from damage or latch-up due to surge current. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to surge current protection for board level. Because of its small size and bi-directional design, it is ideal for use in cellular phones and portable applications that require audio line protection.

Specification Features

- Small Body Outline Dimensions: nom 0.078" x 0.078" (2.0x2.0 mm)
- Low Clamping Voltage: $V_C = 46V$ @ $I_{PP} = 140A$
- Reverse Working (Stand-off) Voltage: 24 V
- Low Leakage
- Response Time is Typically < 1 ns

Application

- Mobile Internet Devices (MID) and portable devices
- Personal digital assistants (PDA's)
- Cellular handsets and accessories



DFN2020-3L

| | Millimeters | | | Inches | | |
|----|-------------|-----------|-----------|-----------|-----------|-----------|
| | Min. (mm) | Typ. (mm) | Max. (mm) | Min. (mm) | Typ. (mm) | Max. (mm) |
| D | 1.95 | 2.00 | 2.05 | 0.076 | 0.078 | 0.080 |
| E | 1.95 | 2.00 | 2.05 | 0.076 | 0.078 | 0.080 |
| D1 | 1.45 | 1.50 | 1.55 | 0.057 | 0.059 | 0.061 |
| E1 | 1.00 | 1.05 | 1.10 | 0.039 | 0.041 | 0.043 |
| L1 | 0.20 | 0.25 | 0.30 | 0.007 | 0.009 | 0.011 |
| L | 0.35 | 0.40 | 0.45 | 0.013 | 0.015 | 0.017 |
| b1 | 0.22REF | | | 0.025bsc | | |
| b | 0.25 | 0.30 | 0.35 | 0.009 | 0.011 | 0.013 |
| e | 1.30REF | | | | | |
| A1 | 0.150REF | | | 0.005REF | | |
| A2 | 0.00 | 0.02 | 0.05 | 0.000 | - | 0.001 |
| A | 0.45 | 0.50 | 0.55 | 0.017 | 0.019 | 0.021 |

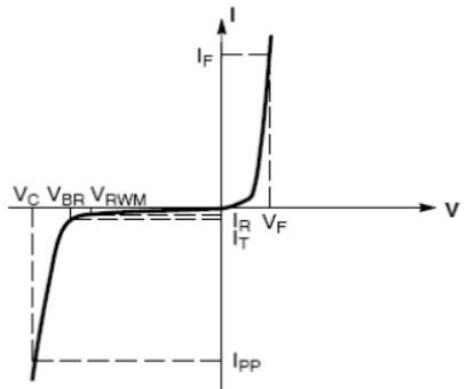
Absolute Maximum Rating

| Rating | Symbol | Value | | Unit |
|--|-----------|-------------|--|------|
| IEC 61000-4-2 (ESD) Contact | | ±30 | | kV |
| Peak Power Per 8 x 20μs Waveform | P_{PK} | 6440 | | W |
| Junction Temperature Range | T_J | -55 to +125 | | °C |
| Storage Temperature Range | T_{stg} | -55 to +150 | | |
| Lead Solder Temperature – Maximum (10 Second Duration) | T_L | 260 | | °C |

GS24VH20UAQ

Characteristics($T_J = 25^\circ\text{C}$ unless otherwise specified)

| Symbol | Parameter |
|-----------|--|
| I_{PP} | Maximum Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{RWM} | Working Peak Reverse Voltage |
| I_R | Maximum Reverse Leakage Current @ V_{RWM} |
| I_T | Test Current |
| V_{BR} | Breakdown Voltage @ I_T |
| P_{PK} | Peak Power Dissipation |
| C | Max. Capacitance @ $V_R = 0$ and freq.=1 MHz |



| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|---------------------------|-----------|-------------------------------------|------|------|------|-------|
| Reverse Stand-off Voltage | V_{RWM} | | | | 24 | V |
| Diode Forward Voltage | V_F | $I_F=10\text{mA}$ | | | 1.2 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T=1\text{mA}$ | 24.8 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM}=24\text{V}$ | | | 1.0 | uA |
| Clamping Voltage | V_C | $I_{PP}=50\text{A}$ tp=8/20us | | | 35 | V |
| | | $I_{PP}=140\text{A}$ tp=8/20us | | | 46 | |
| Junction Capacitance | C_J | $V_R=0\text{V}$, $f = 1\text{MHz}$ | | 380 | | pF |