# 1N4245, 1N4246, 1N4247 1N4248, 1N4249

December 1993

## 1A, 200V - 1000V Diodes

### Features

- **High-Temperature Metallurgically Bonded, No Compression Contacts as Found in Diode-Constructed Rectifiers**
- **Glass-Passivated Junction**
- **1A Operation at $T_A$ = 55°C with No Thermal Runaway**
- **Typical Reverse Current Less than 0. 5μA**
- **Exceeds Environmental Standard of MIL-STD-19500**
- **Hermetically Sealed Package**
- **High-Temperature Soldering Guaranteed: 350°C/10s/ 0.375 in. (9.5 mm) Lead Length**

### Description

The 1N4245, 1N4246, 1N4247, 1N4248, and 1N4249 are glass-passivated "transient voltage protected", silicon rectifiers intended for general-purpose applications.

These rectifiers will dissipate up to 1000 watts in reverse direction without damage. Voltage transients generated by household or industrial power lines are dissipated.

These rectifiers are supplied in a JEDEC style DO-204 package.

### Package

JEDEC STYLE DO-204
TOP VIEW


### Symbol

**Absolute Maximum Ratings** Supply Frequency of 60Hz, Resistive or Inductive Loads (Note 1)

| | | 1N4245 | 1N4246 | 1N4247 | 1N4248 | 1H4249 | UNITS |
|---|---|---|---|---|---|---|---|
| Maximum Peak (Repetitive) Reverse Voltage | $V_{RRM}$ | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Input (Supply) Voltage For Resistive or Inductive Loads | $V_{RMS}$ | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Reverse (Blocking) Voltage | $V_{R(DC)}$ | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Current For Resistive or Inductive Loads, $T_A$ = 55°C | $I_O$ | 1 | 1 | 1 | 1 | 1 | A |
| Maximum Peak Surge (Non-Repetitive) Forward Current For 8.3ms Half Sine Wave, Superimposed on Rated Load, $T_A$ = 55° C | $I_{FSM}$ | 50 | 50 | 50 | 50 | 50 | A |
| Operating Temperature Range | $T_{OPR}$ | -65 to +160 | -65 to +160 | -65 to +160 | -65 to +160 | -65 to +160 | °C |
| Storage Temperature Range | $T_{STG}$ | -65 to +200 | -65 to +200 | -65 to +200 | -65 to +200 | -65 to +200 | °C |

NOTE:

1. In accordance with JEDEC registration format.

4 GENERAL PURPOSE DIODES

CAUTION: These devices are sensitive to electrostatic discharge. Users should follow proper I.C. Handling Procedures.



File Number **2093.1**

**Electrical Specifications** $T_A$ = +25°C, Unless Otherwise Specified

| PARAMETERS | SYMBOL | LIMITS FOR ALL TYPES | | | UNITS |
|---|---|---|---|---|---|
| | | MIN | TYP | MAX | |
| Maximum Instantaneous Forward-Voltage Drop (at 1A) (Note 1) | $V_F$ | - | - | 1.2 | V |
| Maximum Reverse Current: (Note 1) | | | | | |
| At Maximum DC Reverse (Blocking) Voltage, $T_A$ = +25°C | $I_R$ | - | - | 1 | µA |
| At Maximum DC Reverse (Blocking) Voltage, $T_A$ = +125°C | $I_R$ | - | - | 25 | µA |
| At Average Full-Cycle, Lead Length = 0.375 in. (9.5mm), $T_A$ = 55°C | $I_R$ | - | - | 50 | µA |
| Junction Capacitance (at 1MHz and Applied Reverse Voltage = 4V) | $C_J$ | - | 15 | - | pF |

NOTE:

1. In accordance with JEDEC registration format.

## *Typical Performance Curves*

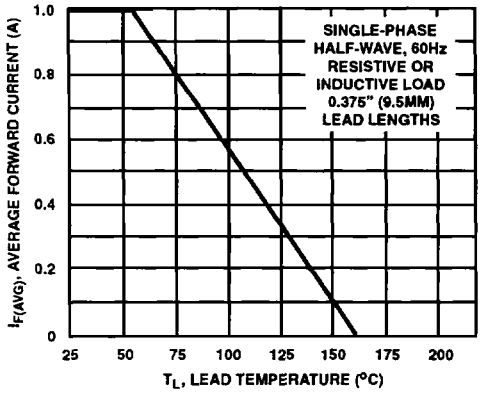


FIGURE 1. MAXIMUM AVERAGE FORWARD OUTPUT CURRENT CHARACTERISTIC

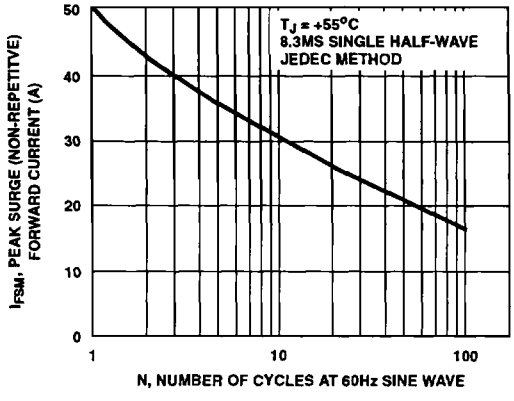


FIGURE 2. MAXIMUM PEAK SURGE (NON-REPETITIVE) FORWARD CURRENT CHARACTERISTIC

## Typical Performance Curves (Continued)

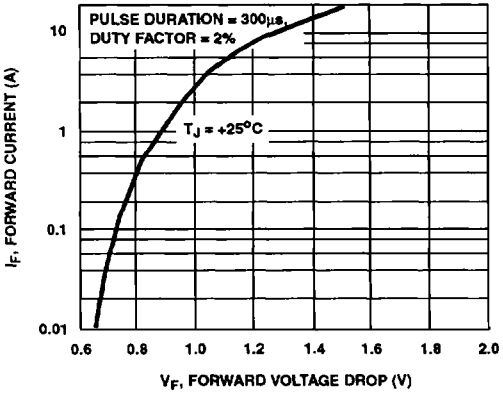


FIGURE 3. TYPICAL INSTANTANEOUS FORWARD CURRENT CHARACTERISTIC

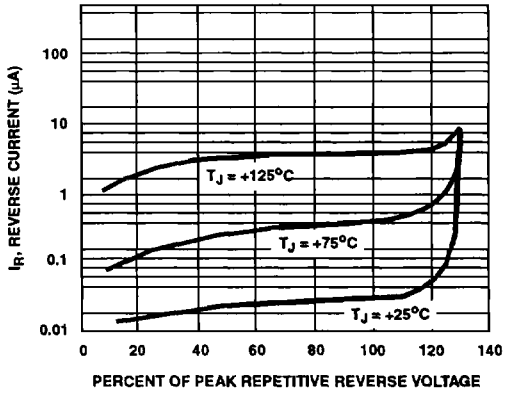


FIGURE 4. TYPICAL REVERSE LEAKAGE CURRENT CHARACTERISTICS

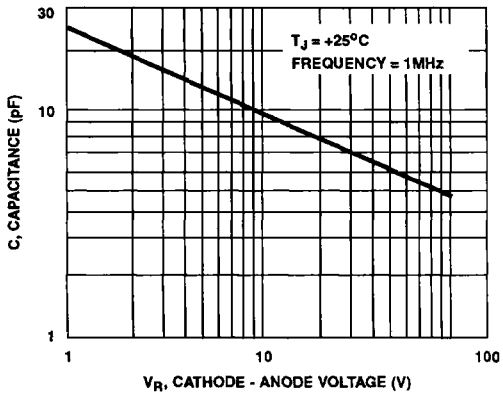


FIGURE 5. TYPICAL JUNCTION CAPACITANCE CHARACTERISTIC