HARRIS SEMICONDUCTOR

GER4001 thru GER4007

December 1993

1A, 50V - 1000V Diodes

Features

- **High-Temperature Metallurgically Bonded, No Compression Contacts as Found in Diode-Constructed Rectifiers**
- **Glass-Passivated Junction**
- **1A Operation at T_A = 100°C with No Thermal Runaway**
- **Low Reverse Current**
- **Exceeds Environmental Standard of MIL-STD-19500**
- **Hermetically Sealed Package**
- **High-Temperature Soldering 350°C/10s/0.375 in. (9.5 mm) Lead Length**

Description

The GER4001 - GER4007 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

4 GENERAL PURPOSE DIODES

Absolute Maximum Ratings

For Single Phase, 60Hz, Half-Wave Resistive or Inductive Loads

	GER4001	GER4002	GER4003	GER4004	GER4005	GER4006	GER4007	UNITS
Maximum Peak (Repetitive) Reverse Voltage ..... V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Supply Voltage For Resistive or Inductive Loads..... V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Reverse (Blocking) Voltage ..... $V_{R(DC)}$	50	100	200	400	600	800	1000	V
Maximum Average Forward Output Current For Resistive or Inductive Loads, T_A = 100°C ..... I_O	1	1	1	1	1	1	1	A
Maximum Peak Surge (Non-Repetitive) Forward Current For 8.3ms Half Sine Wave, Superimposed On Rated Load ..... I_{FSM}	50	50	50	50	50	50	50	A
Operating Junction and Storage Temperature ..... T_J, T_{STG}				-65 to +175				°C

File Number **2177.1**

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	V_F	-	-	1.2 (Note 1)	V
Maximum Full-Load Reverse Current At Average Full-Ccycle, Lead Length = 0.375 in. (9.5mm), T_A = 100°C	I_R	-	-	200	µA
Maximum Reverse Current At Maximum DC Reverse (Blocking) Voltage	I_R	-	-	2	µA
Maximum Reverse Recovery Time At I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A	t_{RR}	-	-	2	µs
Typical Junction Capacitance At Frequency = 1MHz and Applied Reverse Voltage = 4V	C_J	-	15	-	pF

NOTE:

1. 1.1V for GER4003 - GER4007

Typical Performance Curves

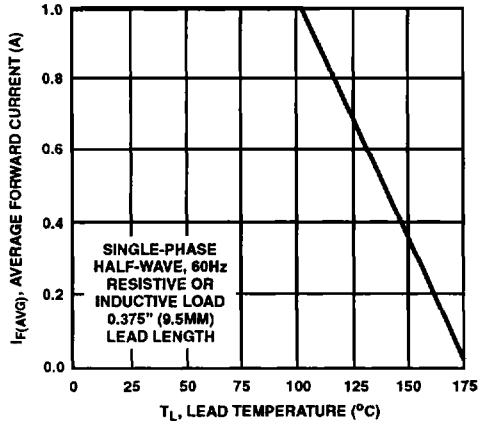

FIGURE 1. MAXIMUM AVERAGE FORWARD OUTPUT CURRENT CHARACTERISTIC

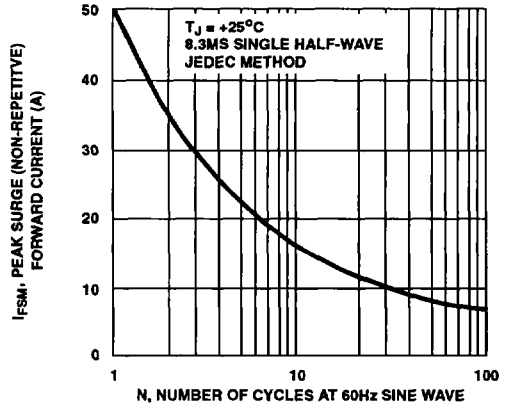

FIGURE 2. MAXIMUM PEAK SURGE (NON-REPETITIVE) FORWARD CURRENT CHARACTERISTIC

Typical Performance Curves (Continued)

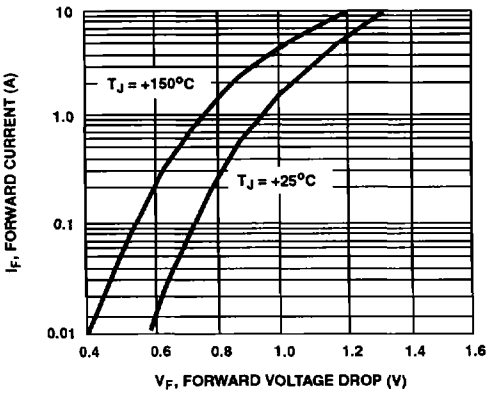

FIGURE 3. TYPICAL INSTANTANEOUS FORWARD CURRENT CHARACTERISTIC

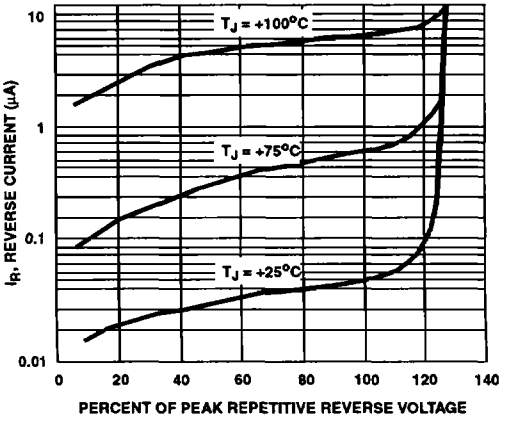

FIGURE 4. TYPICAL REVERSE LEAKAGE CURRENT CHARACTERISTICS

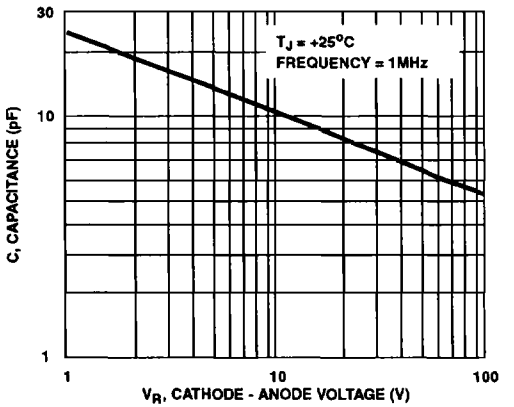

FIGURE 5. TYPICAL JUNCTION CAPACITANCE CHARACTERISTIC