HARRIS SEMICONDUCTOR

1N5059, 1N5060 1N5061, 1N5062

December 1993

1A, 200V - 800V 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 Guaranteed: 300°C/10s/ 0.375 in. (9.5 mm) Lead Length**

Description

The 1N5059, 1N5060, 1N5061, and 1N5062 are glass-passivated "transient voltage protected," silicon rectifiers intended for general-purpose applications.

These rectifiers will dissipate up to 800 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 pack-

Package

JEDEC STYLE DO-204
TOP VIEW

Symbol

Absolute Maximum Ratings

Supply Frequency of 60Hz, Resistive or Inductive Loads

		1N5059	1N5060	1N5061	1N5062	UNITS
Maximum Peak (Repetitive) Reverse Voltage (Note 1)	V_{RRM}	200	400	600	800	V
Maximum RMS Input (Supply) Voltage For Resistive or Inductive Loads.	V_{RMS}	140	280	420	560	V
Maximum DC Reverse (Blocking) Voltage (Note 1)	$V_{R(DC)}$	200	400	600	800	V
Maximum Average Forward Current (Note 1) For Resistive or Inductive Loads, T_A = +75°C	I_O	1	1	1	1	A
Maximum Peak Surge (Non Repetitive) Forward Current (Note 1) For 8.3ms Half Sine Wave, Superimposed on Rated Load	I_{FSM}	50	50	50	50	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-65 to +175	-65 to +175	-65 to +175	-65 to +175	°C

NOTE:

1. In accordance with JEDEC registration format.

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

File Number **2176.1**

Specifications 1N5059, 1N5060, 1N5061, 1N5062

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

PARAMETERS	SYMBOL	LIMITS FOR ALL TYPES MIN	TYP	MAX	UNITS
Maximum Instantaneous Forward-Voltage Drop (Note 1) At 1A, T_A = +75°C	V_F	-	-	1.2	V
Maximum Full-Load Reverse Current					
At Average Full-Cycle, Lead Length = 0.375 in. (9.5mm) T_A = +25°C	I_R	-	-	5	µA
At Average Full-Cycle, Lead Length = 0.375 in. (9.5mm) T_A = +175°C	I_R	-	-	150 (Note 2)	µA
Maximum Reverse Current: (Note 1)					
At Average DC Reverse (Blocking) Voltage, T_A = +25°C	I_R	-	-	5	µA
At Maximum DC Reverse (Blocking) Voltage, T_A = +175°C	I_R	-	-	300 (Note 3)	µA
Maximum Reverse Recovery Time					
At I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A	I_R	-	-	2	µs
Typical Junction Capacitance At Frequency = 1MHz and Applied Reverse Voltage = 4V	C_J	-	15	-	pF

NOTES:

1. In accordance with JEDEC registration format.
2. 100µA for 1N5061 and 1N5062.
3. 200µA for 1N5061 and 1N5062.

Typical Performance Curves

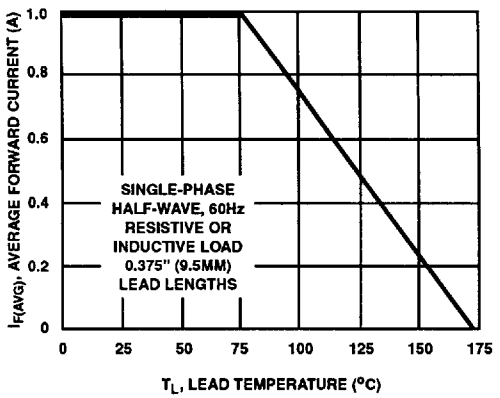

FIGURE 1. MAXIMUM AVERAGE FORWARD OUTPUT CURRENT CHARACTERISTIC

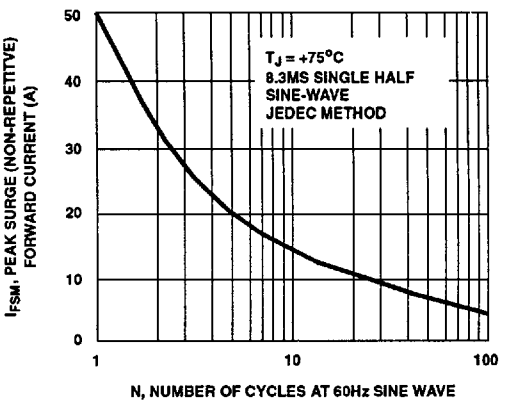

FIGURE 2. MAXIMUM PEAK SURGE (NON-REPETITIVE) FORWARD CURRENT CHARACTERISTIC

Typical Performance Curves (Continued)

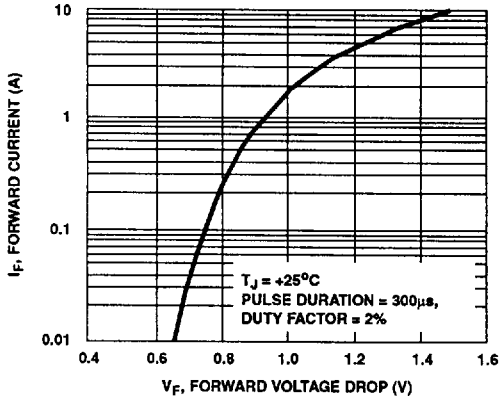

FIGURE 3. TYPICAL INSTANTANEOUS FORWARD CURRENT CHARACTERISTIC

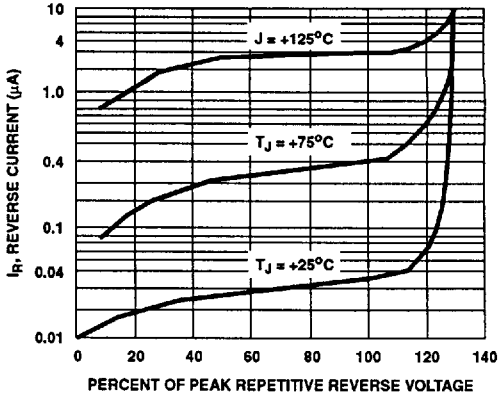

FIGURE 4. TYPICAL REVERSE LEAKAGE CURRENT CHARACTERISTICS

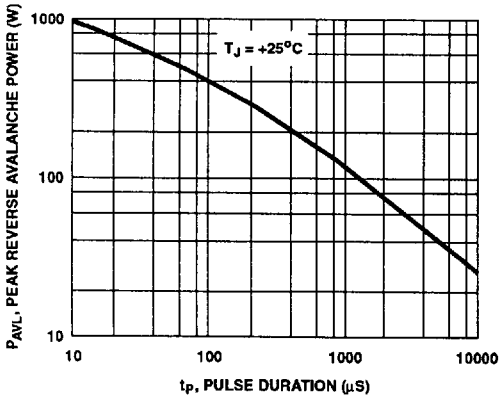

FIGURE 5. MAXIMUM NON-REPETITIVE REVERSE AVALANCHE POWER

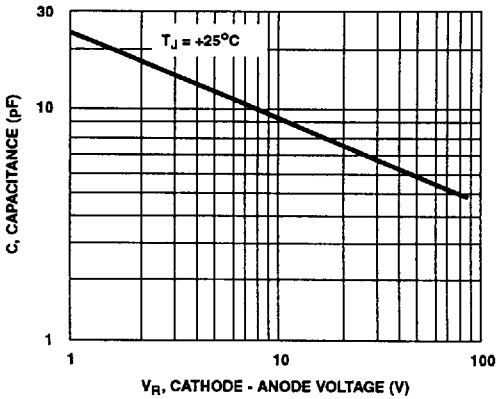

FIGURE 6. TYPICAL JUNCTION CAPACITANCE CHARACTERISTIC