

December 1993

3A, 200V - 800V Diodes

Features

- High Temperature Metallurgically Bonded, No Compression Contacts as Found in Diode-Constructed Rectifiers
- Glass Passivated Junction
- 3A Operation at $T_A +70^\circ\text{C}$ with No Thermal Runaway
- Low Reverse Leakage Current
- Exceeds Environmental Standard of MIL-STD-19500
- Hermetically Sealed Package
- High Temperature Soldering: $350^\circ\text{C}/10\text{s}/0.375\text{ in.}$ (9.5mm) Lead Length

Description

The 1N5624, 1N5625, 1N5626, and 1N5627 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 AL-3 package.

Package

AL-3
TOP VIEW



Symbol



4
GENERAL
PURPOSE DIODES

Absolute Maximum Ratings For Single Phase, 60Hz, Half-Wave Resistive or Inductive Loads (Note 1)

	1N5624	1N5625	1N5626	1N5627	UNITS
Maximum Peak (Repetitive) Reverse Voltage (Note 2) 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 2) $V_{R(DC)}$	200	400	600	800	V
Maximum Average Forward Current (Note 2) For Resistive or Inductive Loads, $T_A = +75^\circ\text{C}$ I_O	3	3	3	3	A
Maximum Peak Surge Forward Current (Note 2) For 8.3ms Half Sine Wave, Superimposed on Rated Load I_{FSM}	125	125	125	125	A
Operating Junction Temperature (Note 2) T_J	-65 to +175	-65 to +175	-65 to +175	-65 to +175	$^\circ\text{C}$
Storage Temperature (Note 2) T_{STG}	-65 to +200	-65 to +200	-65 to +200	-65 to +200	$^\circ\text{C}$

NOTES:

1. For capacitive load derate current by 20%.
2. In accordance with JEDEC registration format.

Specifications 1N5624, 1N5625, 1N5626, 1N5627

Electrical Specifications $T_A = +25^\circ\text{C}$, Unless Otherwise Specified

PARAMETERS	SYMBOL	LIMITS FOR ALL TYPES			UNITS
		MIN	TYP	MAX	
Maximum Instantaneous Forward-Voltage Drop (Note 1)					
At 3A, $T_A = +25^\circ\text{C}$	V_F	-	-	1.0	V
At 3A, $T_A = +70^\circ\text{C}$	V_F	-	-	0.95	V
Maximum Full-Load Reverse Current (Note 1)					
At Average Full-Cycle, Lead Length = 0.375 in. (9.5mm) $T_A = +70^\circ\text{C}$	I_R	-	-	150 (Note 2)	μA
Maximum Reverse Current (Note 1)					
At Maximum DC Reverse (Blocking) Voltage, $T_A = +25^\circ\text{C}$	I_R	-	-	5	μA
At Maximum DC Reverse (Blocking) Voltage, $T_A = +175^\circ\text{C}$	I_R	-	-	300 (Note 3)	μA
Typical Junction Capacitance At Frequency = 1MHz and Applied Reverse Voltage = 4V	C_J	-	40	-	pF

NOTES:

1. In accordance with JEDEC registration format.
2. $100\mu\text{A}$ for 1N5626 and 1N5627.
3. $200\mu\text{A}$ for 1N5624 and 1N5625.

Typical Performance Curves

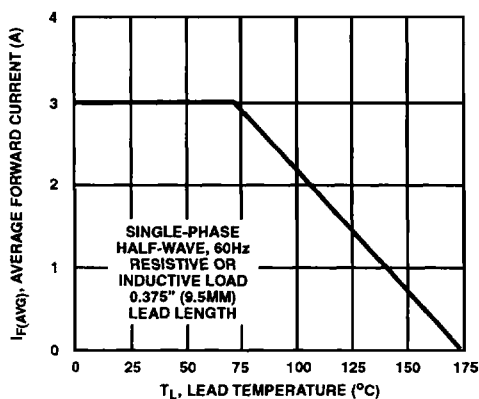


FIGURE 1. MAXIMUM AVERAGE FORWARD OUTPUT CURRENT CHARACTERISTIC

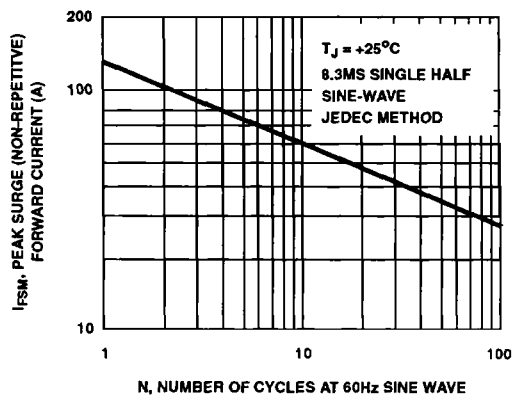


FIGURE 2. MAXIMUM PEAK SURGE (NON-REPETITIVE) FORWARD CURRENT CHARACTERISTIC

Typical Performance Curves (Continued)

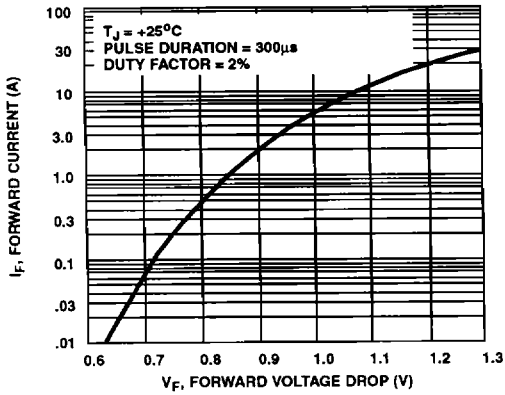


FIGURE 3. TYPICAL INSTANTANEOUS FORWARD CURRENT CHARACTERISTIC

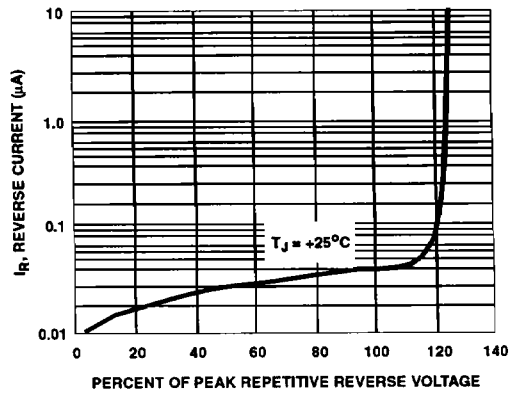


FIGURE 4. TYPICAL REVERSE LEAKAGE CURRENT CHARACTERISTICS

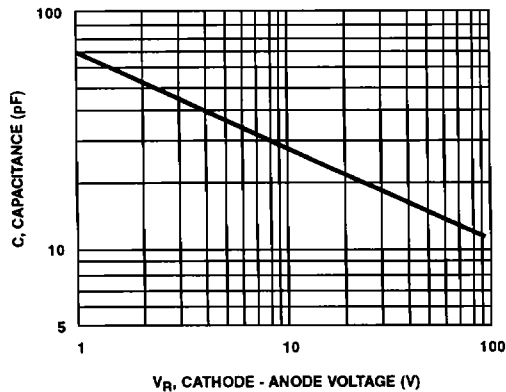


FIGURE 5. TYPICAL JUNCTION CAPACITANCE CHARACTERISTIC