

Silicon Diode

1N4009

25V/300mA

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

1N4009

ULTRA HIGH SPEED DIODE

DIFFUSED SILICON PLANAR

- t_{rr} ... 2 ns (MAX)
- BV... 35 V (MIN) @ 5 μ A

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

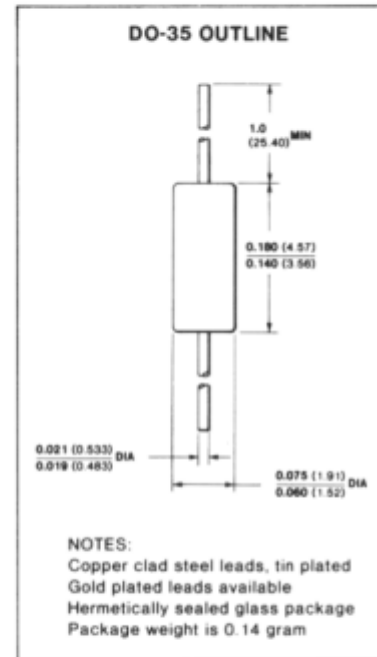
Storage Temperature Range	-65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	500 mW
Linear Power Derating Factor	3.33 mW/°C

Maximum Voltage and Current

WIV	Working Inverse Voltage	25 V
I_O	Average Rectified Current	100 mA
I_F	Continuous Forward Current	300 mA
i_f	Peak Repetitive Forward Current	400 mA
i_f (surge)	Peak Forward Surge Current	4.0 A
	Pulse Width = 1 s	1.0 A
	Pulse Width = 1 μ s	4.0 A



ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage		1.0	V	$I_F = 30$ mA
I_R	Reverse Current		0.1 100	μ A μ A	$V_R = 25$ V $V_R = 25$ V, $T_A = 150^\circ$ C
BV	Breakdown Voltage	35		V	$I_R = 5.0$ μ A
t_{rr}	Reverse Recovery Time		4.0 2.0	ns ns	$I_f = I_r = 10$ mA (Note 3) $I_f = 10$ mA, $V_r = 6.0$ V, $R_L = 100$ Ω
C	Capacitance		4.0	pF	$V_R = 0, f = 1.0$ MHz

NOTES:

- These ratings are limiting values above which the serviceability of the diode may be impaired.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
- Recovery to 1.0 mA.
- For product family characteristic curves, refer to Chapter 4, D4

CURVE SET NUMBER D4

HIGH SPEED GENERAL PURPOSE SMALL SIGNAL DIODE

TYPICAL ELECTRICAL CHARACTERISTIC CURVES
AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

