

Silicon Diode

1N5282

55V/300mA

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

1N5282**HIGH CONDUCTANCE ULTRA FAST DIODE**
DIFFUSED SILICON PLANAR EPITAXIAL

- BV...80 V (MIN) @ 5.0 μ A
- C...2.5 pF @ $V_R = 0$ V, $f = 1.0$ MHz
- t_{rr} ...4.0 ns @ $I_f = I_r = 10$ mA to 200 mA

ABSOLUTE MAXIMUM RATINGS (Note 1)**Temperatures**

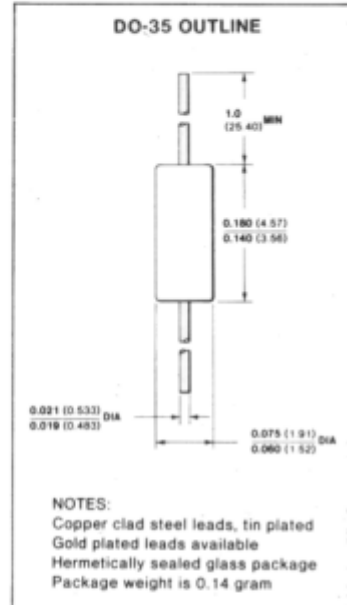
Storage Temperature Range	-65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Dissipation at 25° Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	55 V
I_O	Average Rectified Current	200 mA
I_F	Continuous Forward Current	300 mA
$I_f(\text{surge})$	Peak Forward Surge Current	1.0 A
	Pulse Width = 1.0 s	4.0 A
	Pulse Width = 1.0 μ s	

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

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	1.05	1.30	V	$I_F = 500$ mA
		0.92	1.10	V	$I_F = 300$ mA
		0.80	0.90	V	$I_F = 100$ mA
		0.67	0.725	V	$I_F = 10$ mA
		0.55	0.60	V	$I_F = 1.0$ mA
		0.45	0.49	V	$I_F = 0.1$ mA
I_R	Reverse Current		100	nA	$V_R = 55$ V
			100	μ A	$V_R = 55$ V, $T_A = 150^\circ$ C
BV	Breakdown Voltage	80		V	$I_R = 5.0$ μ A
t_{rr}	Reverse Recovery Time (Note 3)		4.0	ns	$I_f = I_r = 10$ mA to 200 mA $R_L = 100 \Omega$
t_{rr}	Reverse Recovery Time		2.0	ns	$I_f = 10$ mA, $V_r = 6.0$ V
t_{fr}	Forward Recovery Time		10	ns	$I_f = 200$ mA (Note 4)
V_{pk}	Peak Forward Voltage	-	2.0	V	$I_f = 500$ mA (Note 5)
C	Capacitance		2.5	pF	$V_R = 0, f = 1.0$ MHz

NOTES:

- The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
- These are steady-state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
- Recovery to 0.1 I_f .
- $t_r = 0.4$ ns, $V_{f1} = 1.0$ V, pulse width = 100 ns; duty cycle $\leq 1\%$.
- $t_r = 8.0$ ns, pulse width = 1.0 μ s; duty cycle $\leq 1\%$.
- For product family characteristics 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

