

Silicon Diode

1N4153

50V/300mA

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

1N4151 • 1N4152 • 1N4153 • 1N4154**HIGH SPEED DIODES**

SILICON PLANAR EPITAXIAL

- C ... 4 pF (MAX)
- t_{rr} ... 2 nS (MAX) @ 10 mA, -6 V, 100 Ω .

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

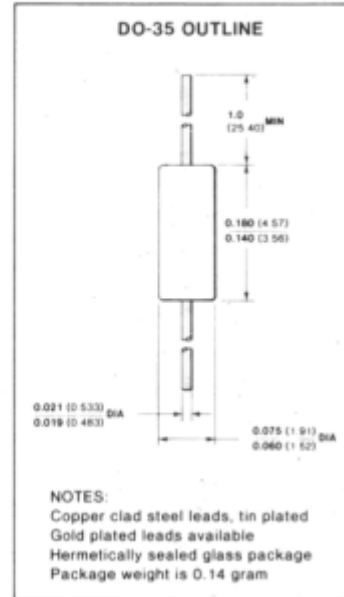
Storage Temperature Range	-65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

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 Currents

WIV	Working Inverse Voltage	1N4151 50 V	1N4153 50 V
		1N4152 30 V	1N4154 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		
	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	1N4154	1.0	V	$I_F = 30$ mA		
		1N4151	1.0	V		$I_F = 50$ mA	
		1N4152 & 1N4153	0.49	0.55		V	$I_F = 0.1$ mA
			0.53	0.59		V	$I_F = 0.25$ mA
			0.59	0.67		V	$I_F = 1.0$ mA
			0.62	0.70		V	$I_F = 2.0$ mA
			0.70	0.81		V	$I_F = 10$ mA
			0.74	0.88		V	$I_F = 20$ mA
I_R	Reverse Current	1N4154	0.1	μ A	$V_R = 25$ V		
			100	μ A	$V_R = 25$ V, $T_A = 150^\circ$ C		
		1N4153 } 1N4151 }	0.05	μ A	$V_R = 50$ V		
			50	μ A	$V_R = 50$ V, $T_A = 150^\circ$ C		
		1N4152	0.05	μ A	$V_R = 30$ V		
	50	μ A	$V_R = 30$ V, $T_A = 150^\circ$ C				
BV	Breakdown Voltage	1N4154	35	V	$I_R = 5.0$ μ A		
		1N4153 } 1N4151 }	75	V	$I_R = 5.0$ μ A		
		1N4152	40	V	$I_R = 5.0$ μ A		
t_{rr}	Reverse Recovery Time		4.0	ns	$I_f = 10$ mA,		
			2.0	ns	$I_f = 10$ mA (Note 3) $I_f = 10$ mA $V_f = -6.0$ V, $R_L = 100$ Ω		
C	Capacitance		4.0	pF	$V_R = 0$, $f = 1.0$ MHz		

NOTES

- The maximum ratings are limiting values above which satisfactory performance may be impaired.
- These are steady state limits. The factory should be consulted in 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

