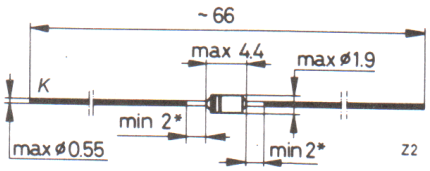
1N 4151 (BAY 95), 1N 4154 (BAY 94)

Silicon Epitaxial Planar Low-Capacitance Diodes

for very fast switching applications.

Dimensions in mm

Band: cathode



* not tinned

Case: DO-35

Mass: approx. 0.15 g

Absolute maximum ratings

		1N 4151	1N 4154	
Reverse voltage	V_R	50	25	V
Peak reverse voltage	V_{RM}	75	35	V
Rectified current[1]	I_o	150		mA
Forward current	I_F	200		mA
Peak forward current	I_{FM}	450		mA
Surge peak forward current[2]	I_{FSM}	2		A
Junction temperature	T_j	200		°C
Storage temperature	T_s	–65 . . . + 200		°C
Total power dissipation	P_{tot}[4]	440		mW
	P_{tot}[5]	500		mW

Thermal resistance[3]

junction to ambient	R_{thja}	= 350		K/W

Static characteristics

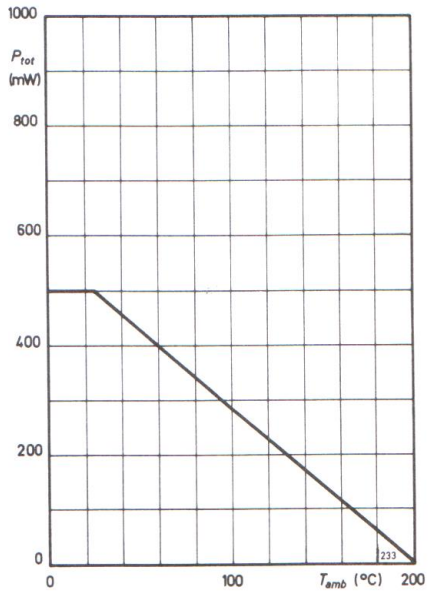
T_{amb} = 25°C

Forward voltage				
I_F = 30 mA	V_F[6]	–	0.88 (≤1)	V
I_F = 50 mA	V_F[6]	0.88 (≤1)	–	V
Reverse current				
V_R = 25 V	I_R[6]	–	9 (≤100)	nA
V_R = 50 V	I_R[6]	14 (≤50)	–	nA
V_R = 25 V, T_{amb} = 150°C	I_R	–	≤100	µA
V_R = 50 V, T_{amb} = 150°C	I_R	≤50	–	µA
Breakdown voltage[6]				
I_R = 5 µA	$V_{(BR)}$	≥75	≥35	V

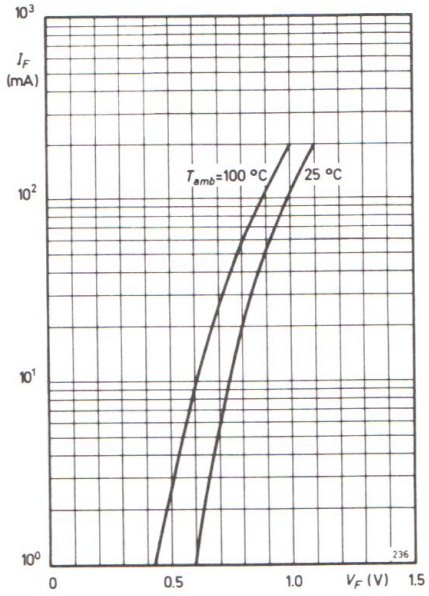
[1] V_R = 0 V
[2] t_i = 1 µs, δ = 0.2
[3] T_L = const., L = 4 mm
[4] T_{amb} ≤45°C
[5] T_{amb} ≤25°C
[6] AQL = 1%

Dynamic characteristics		**1N 4151**	**1N 4154**	
T_{amb} = 25°C				
Diode capacitance V_R = 0 V, f = 1 MHz, V_{HF} = 50 mV	C_D	1.7 (≤2)	≤4	pF
Reverse recovery time	t_{rr}[1] t_{rr}[2]	≤4 ≤2	≤4 ≤2	ns ns
Rectification efficiency[3] f = 100 MHz, V_{HF} = 2 V, R_L = 5 kΩ, C_L = 2 nF	η	≥45	≥45	%

Permissible total power dissipation versus ambient temperature $P_{tot} = f(T_{amb})$

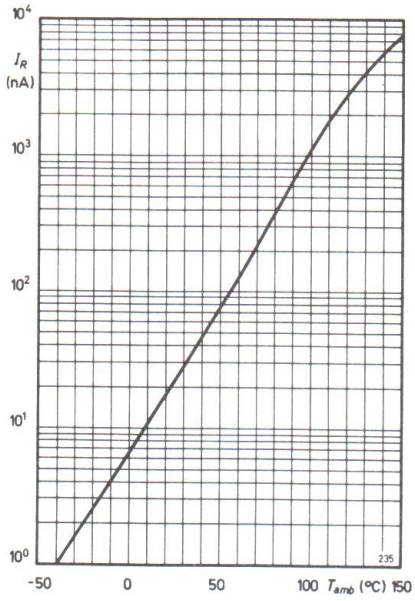


Forward characteristics $I_F = f(V_F)$

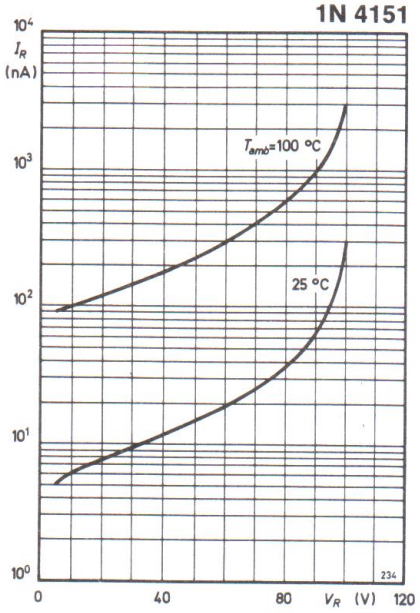


[1] measured at switching from I_F = 10 mA through I_R = 10 mA to I_R = 1 mA
[2] measured at switching from I_F = 10 mA through V_R = 6 V to I_R = 1 mA, R_L = 100 Ω
[3] ratio of the peak input voltage and the average rectified output voltage

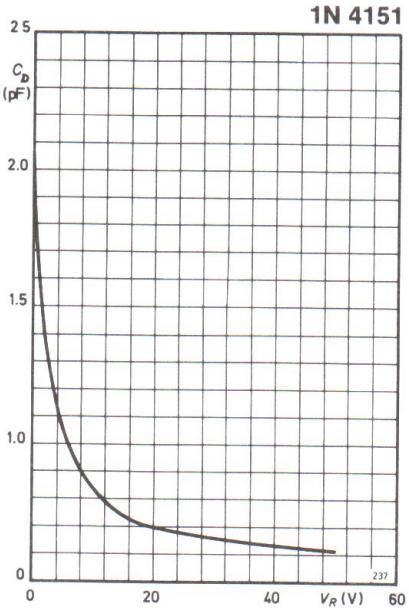
Reverse current versus ambient temperature
$I_R = f(T_{amb})$
V_R = 50 V: **1N 4151**
V_R = 25 V: **1N 4154**



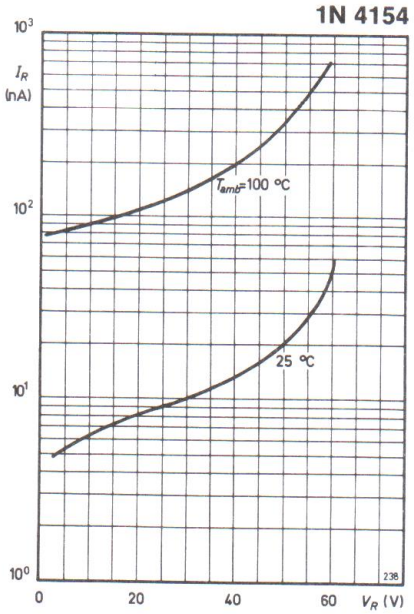
Reverse characteristics



Diode capacitance versus reverse voltage
$C_D = f(V_R)$, f = 1 MHz



Reverse characteristics $I_R = f(V_R)$



Diode capacitance versus reverse voltage

$C_D = f(V_R)$, f = 1 MHz