DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

1N4305, 1N4454

SWITCHING RECTFIERS

FEATURES

- Available as “HR” (high reliability) screened per MIL-PRF-19500, JANTX level. Add “HR” suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding “-PBF” suffix.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Maximum working inverse voltage	WIV	50	V
Average rectified current	I_O	100	mA
Forward current steady state	I_F	300	mA
Recurrent peak forward current	i_f	400	mA
Peak forward surge current Pulse width = 1.0s Pulse width = 1.0µs	$i_{f(surge)}$	 1.0 4.0	A
Power dissipation Maximum total dissipation Linear derating factor (from 25°C)	P_D	 500 3.33	 mW mW/°C
Storage temperature range	T_{stg}	-65 to +200	°C
Maximum junction temperature	T_J	+175	°C
Lead temperature	T_L	+260	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Forward voltage					
	V_F	0.610	0.710	V	I_F = 2.0mA
		0.550	0.650		I_F = 1.0mA
		0.505	0.575		I_F = 250µA
1N4454		-	1.000		I_F = 10mA
1N4305		0.700	0.850		I_F = 10mA
Reverse current	I_R	-	0.1	µA	V_R = 50V
			100		V_R = 50V, T_A = 150°C
Breakdown voltage	BV	75	-	V	I_R = 5.0µA
Reverse recovery time[1]					
1N4305	t_{rr}	-	2.0	ns	I_F = 10mA, V_R = 6.0V, R_L = 100Ω
1N4305		-	4.0		I_F = I_R = 10mA, V_R = 1.0V R_L = 100Ω
1N4454		-	4.0		I_F = I_R = 10mA, V_R = 1.0V R_L = 100Ω
Capacitance	C	-	2.0	pF	V_R = 0, f = 1.0MHz
Rectification efficiency[2]	RE	45	-	%	f = 1.0MHz
Typical forward voltage temperature coefficient	ΔV_F/°C	3.0		mV/°C	

Note 1: Recovery to 1.0mA

Note 2: Rectification efficiency is defined as the ratio of dc load voltage to peak rf input voltage to the detector circuit, measured with 2.0V rms input to the circuit. Load resistance 5.0Ω, load capacitance 20pF.

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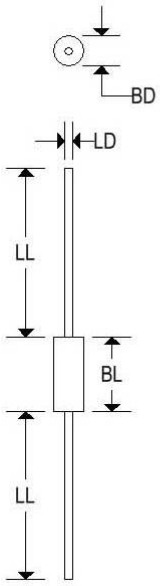
MECHANICAL CHARACTERISTICS

Case	DO-35
Marking	Body painted, alpha numeric
Normal polarity	Cathode band



	DO-35			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.055	0.090	1.400	2.290
BL	0.120	0.200	3.050	5.080
LD	0.018	0.022	0.460	0.560
LL	1.000	1.500	25.400	38.100