

ELECTRICAL CHARACTERISTICS (25°C free air temperature unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
BV _{CBO}	Collector to Base Breakdown Voltage $I_C = 10\mu A$ $I_E = 0$	2N3503 / 2N3505	-60			V
		2N3502 / 2N3504	-45			
BV _{EBO}	Emitter to Base Breakdown Voltage $I_E = 10\mu A$ $I_C = 0$		-5			V
V _{CEO}	Collector-Emitter Sustaining Voltage $I_C = 10mA$ $I_B = 0$	2N3503 / 2N3505	-60			V
		2N3502 / 2N3504	-45			
I _{CES}	Collector Cutoff Current $V_{CE} = -50V$ $V_{BE} = 0$	2N3503 / 2N3505		0.07	10	nA
		2N3502 / 2N3504		0.05	10	
I _{CBO} (150)	Collector Reverse Current $I_E = 0$ $t = 150^\circ C$	$V_{CB} = -50V$ 2N3503 / 2N3505			10	μA
		$V_{CB} = -30V$ 2N3502 / 2N3504			10	
h _{FE}	DC Current Gain $I_C = 10mA$ $V_{CE} = -10V$	$I_C = 50mA$ $V_{CE} = -1.0V$	115	160	300	—
		$I_C = 1.0mA$ $V_{CE} = -10V$	135	200		
		$I_C = 150mA$ $V_{CE} = -10V$	100	150	300	
		$I_C = 10\mu A$ $V_{CE} = -10V$	80	120		
		$I_C = 500mA$ $V_{CE} = -10V$ $t = -55^\circ C$	50	70		
		$I_C = 50mA$ $V_{CE} = -1.0V$	50	100		
V _{CE(sat)}	Collector Saturation Voltage $I_C = 50mA$ $I_B = 2.5mA$	$I_C = 150mA$ $I_B = 15mA$		-0.08	-0.25	V
		$I_C = 500mA$ $I_B = 50mA$		-0.18	-0.4	
				-0.5	-1.6	
V _{BE(sat)}	Base Saturation Voltage $I_C = 50mA$ $I_B = 2.5mA$	$I_C = 150mA$ $I_B = 15mA$		-0.9	-1.0	V
		$I_C = 500mA$ $I_B = 50mA$		-1.0	-1.3	
					-2.0	
F _T	Transition Frequency $I_C = 50mA$ $V_{CE} = -20V$ $f = 100MHz$	2	2.50		—	
C _{ob}	Output Capacitance $V_{CB} = -10V$ $I_E = 0$		4.5	8.0	pf	
t _{on}	Turn On Time $I_C = 300mA$ $I_{B1} = 30mA$ $I_{B2} = -30mA$		30	40	ns	
t _{off}	Turn Off Time		65	100		