



NES

NEW ENGLAND SEMICONDUCTOR

2N3054

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) $I_C = 100\text{ mAdc}$, $I_B = 0$	$V_{CE(SUS)}$	55		Vdc
Collector-Emitter Sustaining Voltage (1) $I_C = 100\text{ mAdc}$, $R_{BE} = 100\Omega$	$V_{CER(SUS)}$	60		
Collector Cutoff Current $V_{CE} = 30\text{ Vdc}$, $I_B = 0$	I_{CEO}		500	μAdc
Collector Cutoff Current $V_{CE} = 90\text{ Vdc}$, $V_{BE(off)} = 1.5\text{ Vdc}$ $V_{CE} = 90\text{ Vdc}$, $V_{BE(off)} = 1.5\text{ Vdc}$, $T_C = 150^\circ\text{C}$	I_{CEX}		1.0 6.0	μAdc
Emitter Cutoff Current $V_{BE} = 7.0\text{ Vdc}$, $I_C = 0$	I_{EBO}		1.0	nAdc
ON CHARACTERISTICS (1)				
DC Current Gain $I_C = 0.5\text{ Adc}$, $V_{CE} = 4.0\text{ Vdc}$ $I_C = 3.0\text{ Adc}$, $V_{CE} = 4.0\text{ Vdc}$	h_{FE}	25 5.0	100 -	
Collector-Emitter Saturation Voltage $I_C = 500\text{ mAdc}$, $I_B = 50\text{ mAdc}$ $I_C = 3.0\text{ Adc}$, $I_B = 1.0\text{ Adc}$	$V_{CE(sat)}$		1.0 6.0	Vdc
Base-Emitter On Voltage $I_C = 500\text{ mAdc}$, $V_{CE} = 4.0\text{ Vdc}$	$V_{BE(on)}$		1.7	Vdc
DYNAMIC CHARACTERISTICS				
Current-Gain-Bandwidth Product $I_C = 200\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$	f_T	.8		MHz
Small-Signal Current Gain $I_C = 100\text{ mAdc}$, $V_{CE} = 4.0\text{ Vdc}$, $f = 1.0\text{ kHz}$	h_{fe}	25		-
Common-Emitter Cutoff Frequency $I_C = 100\text{ mAdc}$, $V_{CE} = 4.0\text{ Vdc}$	f_{hfe}	30		kHz

(1) Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

FIGURE 2 - SWITCHING TIME EQUIVALENT TEST CIRCUIT

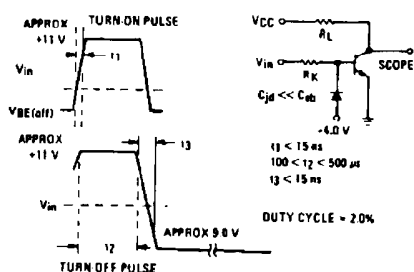
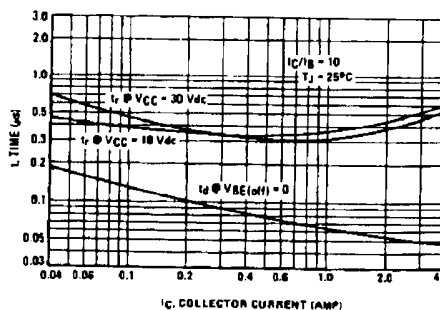


FIGURE 3 - TURN-ON TIME



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