

ELECTRICAL CHARACTERISTICS ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CEO(sus)}}^*$ Collector – Emitter Sustaining Voltage ($I_{\text{B}} = 0$)	$I_{\text{C}} = 50\text{mA}$ 2N3439	350			V
	$I_{\text{C}} = 50\text{mA}$ 2N3440	250			
I_{CEO} Collector Cut-off Current ($I_{\text{B}} = 0$)	$V_{\text{CE}} = 300\text{V}$ 2N3439			20	μA
	$V_{\text{CE}} = 200\text{V}$ 2N3440			50	
I_{CEX} Collector Cut-off Current ($V_{\text{BE}} = -1.5\text{V}$)	$V_{\text{CE}} = 450\text{V}$ 2N3439			500	μA
	$V_{\text{CE}} = 300\text{V}$ 2N3440			500	
I_{CBO} Collector – Base Cut-off Current ($I_{\text{E}} = 0$)	$V_{\text{CB}} = 350\text{V}$ 2N3439			20	μA
	$V_{\text{CB}} = 250\text{V}$ 2N3440			20	
I_{EBO} Emitter Cut-off Current ($I_{\text{C}} = 0$)	$V_{\text{EB}} = 6\text{V}$			20	μA
$V_{\text{CE(sat)}}^*$ Collector – Emitter Saturation Voltage	$I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 4\text{mA}$			0.5	V
$V_{\text{BE(sat)}}^*$ Base – Emitter Saturation Voltage	$I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 4\text{mA}$			1.3	V
h_{FE}^* DC Current Gain	$I_{\text{C}} = 20\text{mA}$ $V_{\text{CE}} = 10\text{V}$	40		160	—
	$I_{\text{C}} = 2\text{mA}$ $V_{\text{CE}} = 10\text{V}$ 2N3439 only	30			—

* Pulse test $t_{\text{p}} = 300\mu\text{s}$, $\delta \leq 2\%$

DYNAMIC CHARACTERISTICS ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
f_{T} Transition Frequency	$I_{\text{C}} = 10\text{mA}$ $V_{\text{CE}} = 10\text{V}$ $f = 5\text{MHz}$	15			MHz
C_{ob} Output Capacitance	$V_{\text{CB}} = 10\text{V}$ $f = 1\text{MHz}$			10	pF
h_{fe} Small Signal Current Gain	$I_{\text{C}} = 5\text{mA}$ $V_{\text{CE}} = 10\text{V}$ $f = 1\text{kHz}$	25			—

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Document Number 2703

Issue 1