

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
$V_{CEO(sus)}$ * Collector – Emitter Sustaining Voltage	$I_C = 10\text{mA}$	40			V	
$V_{(BR)CBO}$ * Collector – Base Breakdown Voltage	$I_C = 10\mu\text{A}$	75			V	
$V_{(BR)EBO}$ * Emitter – Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	6			V	
I_{CEX} * Collector Cut-off Current ($I_C = 0$)	$I_B = 0$ $V_{CE} = 60\text{V}$			10	nA	
I_{CBO} * Collector – Base Cut-off Current	$I_E = 0$ $V_{CB} = 60\text{V}$			10	nA	
	$T_C = 125^\circ\text{C}$			10	μA	
I_{EBO} * Emitter Cut-off Current ($I_C = 0$)	$I_C = 0$ $V_{EB} = 3\text{V (off)}$			10	nA	
I_{BL} * Base Current	$V_{CE} = 60\text{V}$ $V_{EB} = 3\text{V (off)}$			20	nA	
$V_{CE(sat)}$ * Collector – Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$ $I_C = 500\text{mA}$ $I_B = 50\text{mA}$			0.3 1	V	
$V_{BE(sat)}$ * Base – Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$ $I_C = 500\text{mA}$ $I_C = 50\text{mA}$	0.6		1.2 2	V	
h_{FE} * DC Current Gain	$T_A = -55^\circ\text{C}$ $I_C = 0.1\text{mA}$ $V_{CE} = 10\text{V}$ $I_C = 1\text{mA}$ $V_{CE} = 10\text{V}$ $I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$ $I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$ $I_C = 150\text{mA}$ $V_{CE} = 10\text{V}$ $I_C = 150\text{mA}$ $V_{CE} = 1\text{V}$ $I_C = 500\text{mA}$ $V_{CE} = 10\text{V}$	35 50 75 35 100 50 40			300	—

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

DYNAMIC CHARACTERISTICS PER SIDE ($T_C = 25^\circ\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
f_T Transition Frequency	$I_C = 20\text{mA}$ $V_{CE} = 20\text{V}$ $f = 100\text{MHz}$	300			MHz
C_{ob} Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			8	pF
C_{ib} Input Capacitance	$V_{BE} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			30	pF
h_{fe} Small Signal Current Gain	$I_C = 1\text{mA}$ $V_{CE} = 10\text{V}$ $f = 1\text{kHz}$ $I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$ $f = 1\text{kHz}$	50 75		300 375	

SWITCHING CHARACTERISTICS PER SIDE (RESISTIVE LOAD)

($T_C = 25^\circ\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t_d Delay Time	$V_{CC} = 30\text{V}$ $V_{BE} = 0.5\text{V (off)}$			10	ns
t_r Rise Time	$I_{C1} = 150\text{mA}$ $I_{B1} = 15\text{mA}$			25	ns
t_s Storage Time	$V_{CC} = 30\text{V}$ $I_C = 150\text{mA}$			225	ns
t_f Fall Time	$I_{B1} = I_{B2} = 15\text{mA}$			60	ns

f_T is defined as the frequency at which h_{FE} extrapolates to unity.