

ELECTRICAL CHARACTERISTICS

characteristics specified at $T_A = 25^\circ\text{C}$

Off Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\ \mu\text{A}$	40			Volts
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5\ \text{mA}$	20			Volts
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	$I_C = 5\ \text{mA}$, $R_{BE} = 10\ \Omega$	40			Volts
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\ \mu\text{A}$	3			Volts
Collector-Emitter Cutoff Current	I_{CEO1} I_{CEO2}	$V_{CE} = 15\ \text{Volts}$ $V_{CE} = 15\ \text{Volts}$, $T_A = 175^\circ\text{C}$			20 5	μA mA

On Characteristics

Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
DC Current Gain	h_{FE1} h_{FE2}	$I_C = 50\ \text{mA}$, $V_{CE} = 15\ \text{Volts}$ $I_C = 50\ \text{mA}$, $V_{CE} = 5\ \text{Volts}$ $T_A = -55^\circ\text{C}$	40 15		150	
Collector-Emitter Saturation Voltage	V_{CEsat}	$I_C = 100\ \text{mA}$, $I_B = 10\ \text{mA}$			0.5	Volts

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE1} $ $ h_{FE2} $ $ h_{FE3} $	$V_{CE} = 15\ \text{Volts}$, $f = 200\ \text{MHz}$, $I_C = 25\ \text{mA}$ $I_C = 50\ \text{mA}$ $I_C = 100\ \text{mA}$	5 6 5		10.0 11.0 10.5	
Open Circuit Output Capacitance	C_{OBO}	$V_{CB} = 5\ \text{Volts}$, $I_E = 0\ \text{mA}$, $100\ \text{kHz} < f < 1\ \text{MHz}$			3.5	pF
Power Gain (narrow band) current	G_{PE}	$V_{CC} = 15\ \text{Volts}$, $I_C = 50\ \text{mA}$, $f = 200\ \text{MHz}$, $P_{in} = -10\ \text{dB}$	11			dB
Cross Modulation	cm	$V_{CC} = 15\ \text{Volts}$, $I_C = 50\ \text{mA}$, 54 dB output			-57	dB
Noise Figure	NF	$V_{CC} = 15\ \text{Volts}$, $I_C = 10\ \text{mA}$, $f = 200\ \text{MHz}$, $P_{in} = -10\ \text{dB}$			3.5	dB
Voltage Gain (wideband)	G	$V_{CC} = 15\ \text{Volts}$, $I_C = 50\ \text{mA}$, $50\ \text{MHz} < f < 216\ \text{MHz}$, $P_{in} = -10\text{dB}$	11			dB