



2N5336
2N5337
2N5338
2N5339*

*also available as
JAN, JANTX,
JANTXV

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

Characteristic	Fig. No.	Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage* ($I_C = 50\text{ mA}$, $I_B = 0$)	—	$BV_{CEO(sus)}$	80 100	—	Vdc
Collector Cutoff Current ($V_{CE} = 75\text{ Vdc}$, $I_B = 0$) ($V_{CE} = 90\text{ Vdc}$, $I_B = 0$)	—	I_{CEO}	— —	100 100	μA
Collector Cutoff Current ($V_{CE} = 75\text{ Vdc}$, $V_{EB(off)} = 1.5\text{ Vdc}$) ($V_{CE} = 90\text{ Vdc}$, $V_{EB(off)} = 1.5\text{ Vdc}$) ($V_{CE} = 75\text{ Vdc}$, $V_{EB(off)} = 1.5\text{ Vdc}$, $T_C = 150^\circ\text{C}$) ($V_{CE} = 90\text{ Vdc}$, $V_{EB(off)} = 1.5\text{ Vdc}$, $T_C = 150^\circ\text{C}$)	12	I_{CEX}	— — —	10 10 1.0	μA mA
Collector Cutoff Current ($V_{CB} = 80\text{ Vdc}$, $I_E = 0$) ($V_{CB} = 100\text{ Vdc}$, $I_E = 0$)	—	I_{CBO}	— —	10 10	μA
Emitter Cutoff Current ($V_{BE} = 6.0\text{ Vdc}$, $I_C = 0$)	—	I_{EBO}	—	100	μA
ON CHARACTERISTICS					
DC Current Gain* ($I_C = 500\text{ mA}$, $V_{CE} = 2.0\text{ Vdc}$) ($I_C = 2.0\text{ A}$, $V_{CE} = 2.0\text{ Vdc}$) ($I_C = 5.0\text{ A}$, $V_{CE} = 2.0\text{ Vdc}$)	8	h_{FE}	30 60 30 60 20 40	— — 120 240 — —	—
Collector-Emitter Saturation Voltage* ($I_C = 2.0\text{ A}$, $I_B = 0.2\text{ A}$) ($I_C = 5.0\text{ A}$, $I_B = 0.5\text{ A}$)	9, 11, 13	$V_{CE(sat)}$	— —	0.7 1.2	Vdc
Base-Emitter Saturation Voltage* ($I_C = 2.0\text{ A}$, $I_B = 0.2\text{ A}$) ($I_C = 5.0\text{ A}$, $I_B = 0.5\text{ A}$)	11, 13	$V_{BE(sat)}$	— —	1.2 1.8	Vdc
DYNAMIC CHARACTERISTICS					
Current-Gain-Bandwidth Product ($I_C = 0.5\text{ A}$, $V_{CE} = 10\text{ Vdc}$, $f = 10\text{ MHz}$)	—	f_T	30	—	MHz
Output Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 100\text{ kHz}$)	7	C_{ob}	—	250	pF
Input Capacitance ($V_{BE} = 2.0\text{ Vdc}$, $I_C = 0$, $f = 100\text{ kHz}$)	7	C_{ib}	—	1,000	pF
SWITCHING CHARACTERISTICS					
Delay Time ($V_{CC} = 40\text{ Vdc}$, $V_{EB(off)} = 3.0\text{ Vdc}$, $I_C = 2.0\text{ A}$, $I_{B1} = 0.2\text{ A}$)	2, 3	t_d	—	100	ns
Rise Time ($I_C = 2.0\text{ A}$, $I_{B1} = 0.2\text{ A}$)	—	t_r	—	100	ns
Storage Time ($V_{CC} = 40\text{ Vdc}$, $I_C = 2.0\text{ A}$, $I_{B1} = I_{B2} = 0.2\text{ A}$)	2, 6	t_s	—	2.0	μs
Fall Time ($I_{B1} = I_{B2} = 0.2\text{ A}$)	—	t_f	—	200	ns

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

FIGURE 2 — SWITCHING TIME TEST CIRCUIT

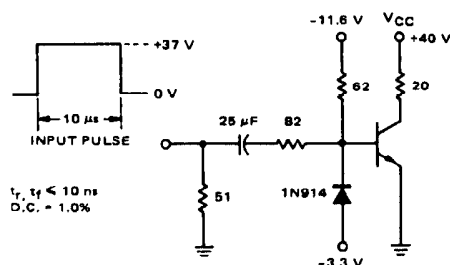
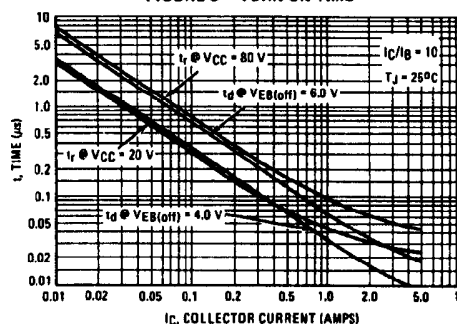


FIGURE 3 — TURN-ON TIME



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