

Electrical characteristics (unless otherwise noted, $T_a = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Collector-to-base breakdown voltage	BV_{CBO}	-400			V	$I_C = -50 \mu\text{A}$
Collector-to-emitter breakdown voltage	BV_{CEO}	-400			V	$I_C = -1 \text{ mA}$
Emitter-to-base breakdown voltage	BV_{EBO}	-7			V	$I_E = -50 \mu\text{A}$
Collector cutoff current	I_{CBO}			-10	μA	$V_{CB} = -400 \text{ V}$
Emitter cutoff current	I_{EBO}			-10	μA	$V_{EB} = -6 \text{ V}$
DC current gain	h_{FE}	56	120	270		$V_{CE} = -10 \text{ V}, I_C = -10 \text{ mA}$
Collector-to-emitter saturation voltage	$V_{CE(sat)}$			-0.5	V	$I_C/I_B = -20 \text{ mA}/-2 \text{ mA}$
Base-to-emitter saturation voltage	$V_{BE(sat)}$			-1.2	V	$I_C/I_B = -20 \text{ mA}/-2 \text{ mA}$
Transition frequency	f_T		12		MHz	$V_{CE} = -10 \text{ V}, I_E = 10 \text{ mA}, f = 5 \text{ MHz}$
Output capacitance	C_{ob}		13		pF	$V_{CB} = -10 \text{ V}, I_E = 0 \text{ mA}, f = 1 \text{ MHz}$
Turn on time	t_{on}		0.7		μs	$I_C = -100 \text{ mA}, R_L = 1.5 \text{ k}\Omega,$ $I_{B1} = -I_{B2} = -10 \text{ mA}, V_{CC} \cong 150 \text{ V}$
Storage time	T_{stg}		1.8		μs	
Fall time	t_f		1.0		μs	

h_{FE} rankings

Item	N	P	Q
h_{FE}	56 ~ 120	82 ~ 180	120 ~ 270

Test circuits

Figure 1 Switching time test circuit

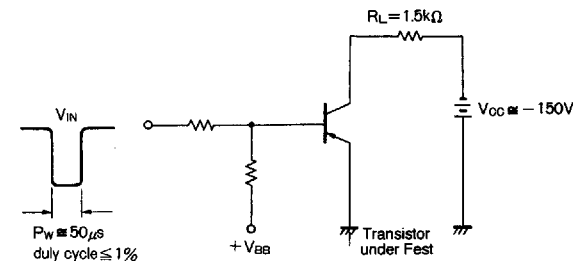
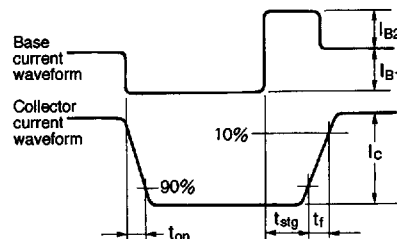


Figure 2 Switching time waveforms



Electrical characteristic curves

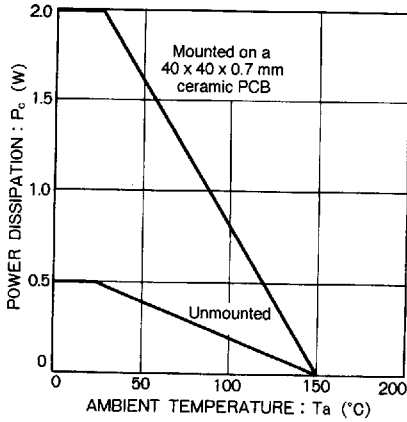


Figure 3

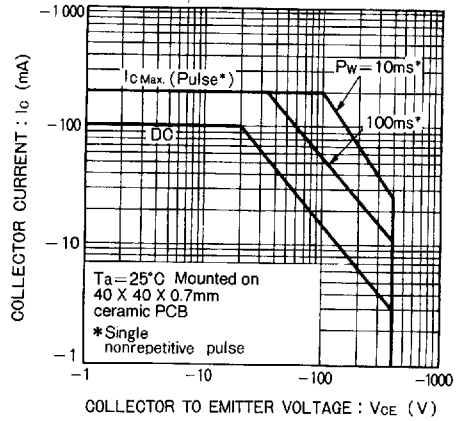


Figure 4

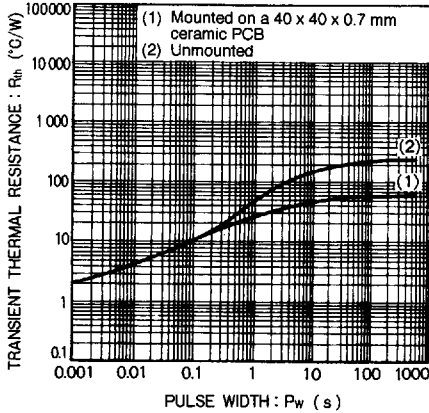


Figure 5

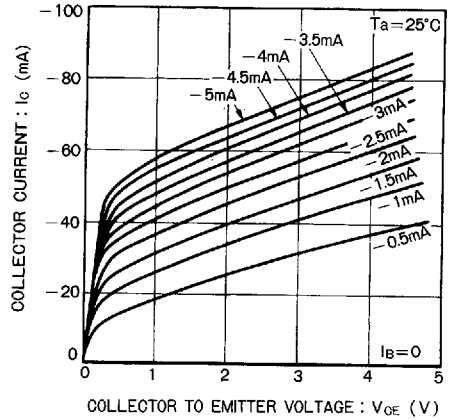


Figure 6

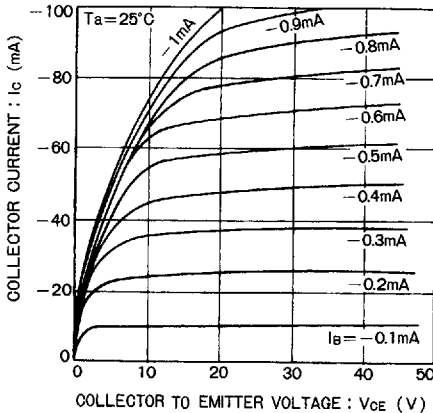


Figure 7

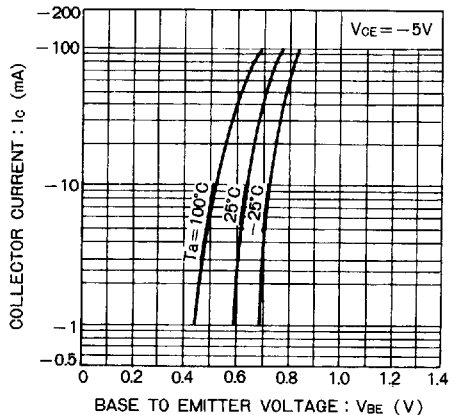


Figure 8

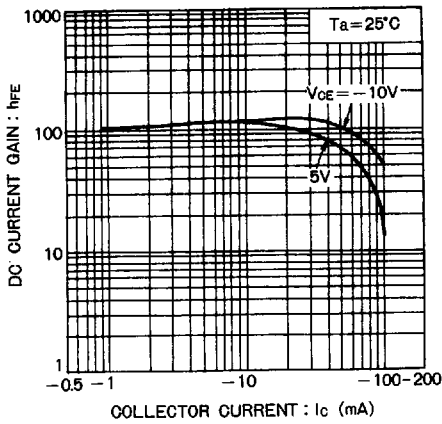


Figure 9

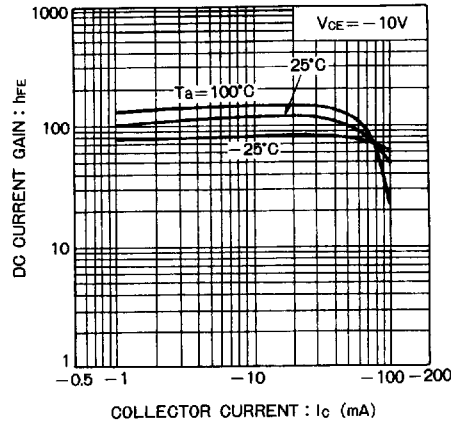


Figure 10

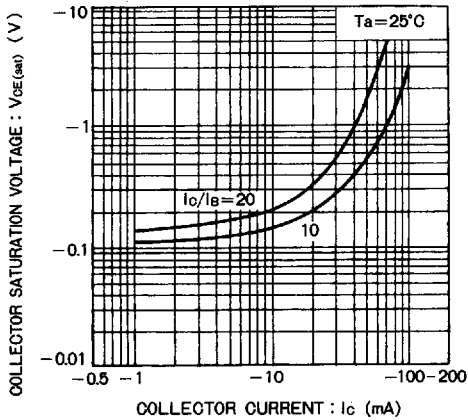


Figure 11

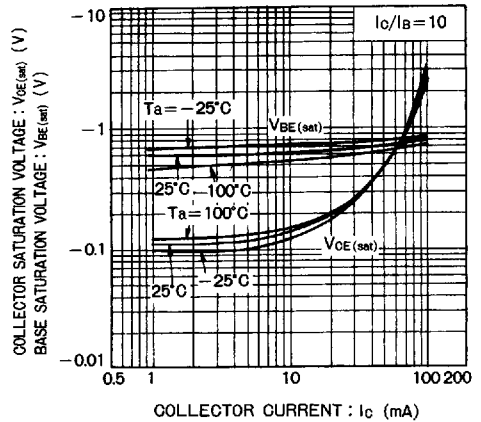


Figure 12

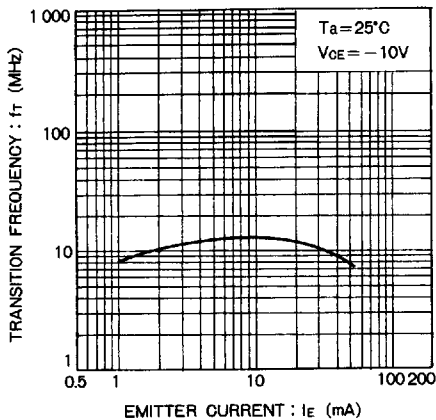


Figure 13

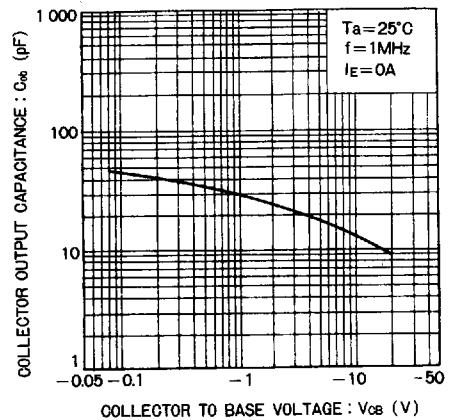


Figure 14