

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector-emitter breakdown voltage	BV_{CEO}	-60	-	-	V	$I_C = -1\text{mA}$
Collector-base breakdown voltage	BV_{CBO}	-60	-	-	V	$I_C = -100\mu\text{A}$
Emitter-base breakdown voltage	BV_{EBO}	-6	-	-	V	$I_E = -100\mu\text{A}$
Collector cut-off current	I_{CBO}	-	-	-1.0	μA	$V_{CB} = -20\text{V}$
Emitter cut-off current	I_{EBO}	-	-	-1.0	μA	$V_{EB} = -4\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-200	-500	mV	$I_C = -2\text{A}$ $I_B = -0.2\text{A}$ *1
DC current gain	h_{FE}	120	-	270	-	$V_{CE} = -2\text{V}$ $I_C = -100\text{mA}$
Transistor frequency	f_r	-	180	-	MHz	$V_{CE} = -10\text{V}$ *1 $I_E = 100\text{mA}$ $f = 10\text{MHz}$
Collector output capacitance	C_{ob}	-	50	-	pF	$V_{CB} = -10\text{V}$ $I_E = 0\text{mA}$ $f = 1\text{MHz}$
Turn-on time	t_{on}	-	20	-	ns	$I_C = -3\text{A}$ *2 $I_{B1} = -300\text{mA}$ $I_{B2} = 300\text{mA}$ $V_{CC} \approx -25\text{V}$
Storage time	t_{stg}	-	150	-	ns	
Fall time	t_f	-	20	-	ns	

*1 Non repetitive pulse

*2 See switching characteristics measurement circuits

● h_{FE} RANK

Q
120-270

Transistors

●Electrical characteristics curves

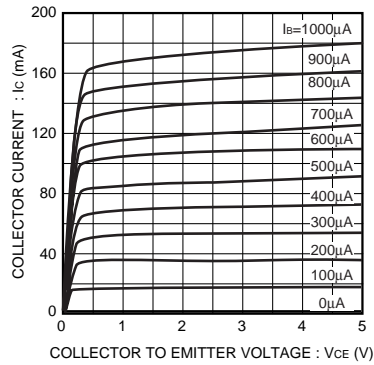


Fig.1 Typical output characteristics

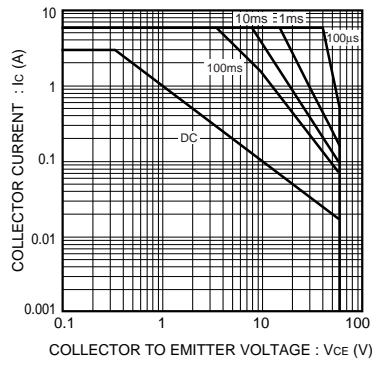


Fig.2 Safe operating area

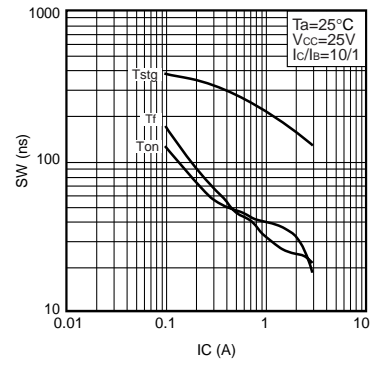


Fig.3 Switching Time

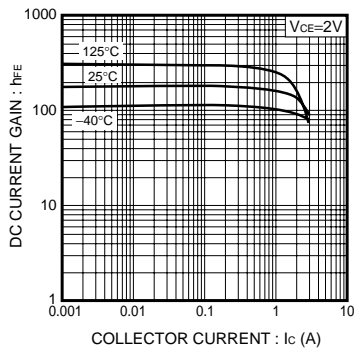


Fig.4 DC current gain vs. collector current (I)

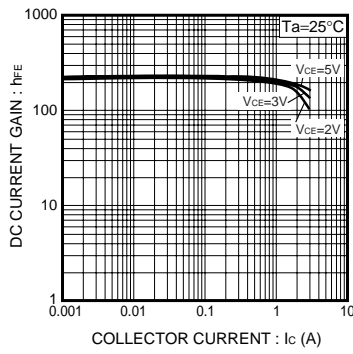


Fig.5 DC current gain vs. collector current (II)

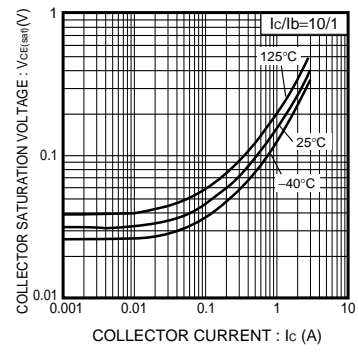


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

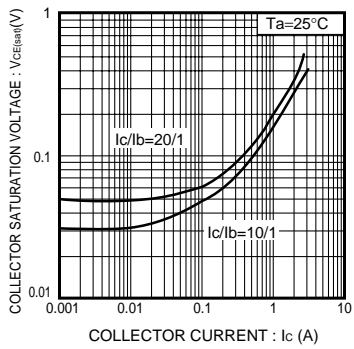


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

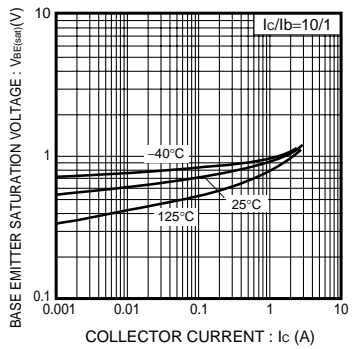


Fig.8 Base-emitter saturation voltage vs. collector current

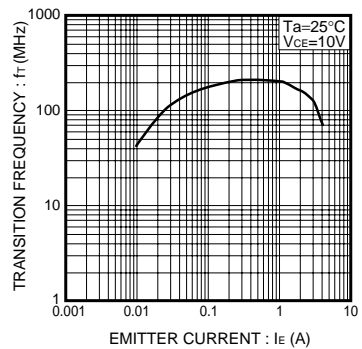


Fig.9 Transition frequency

Transistors

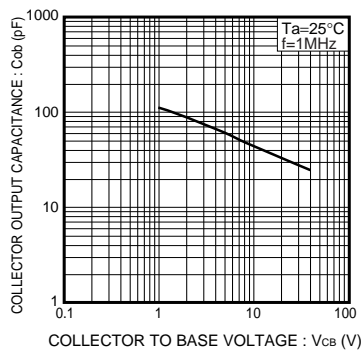


Fig.10 Collector output capacitance

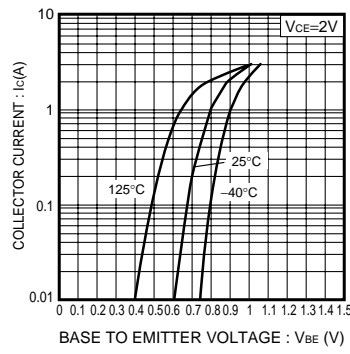
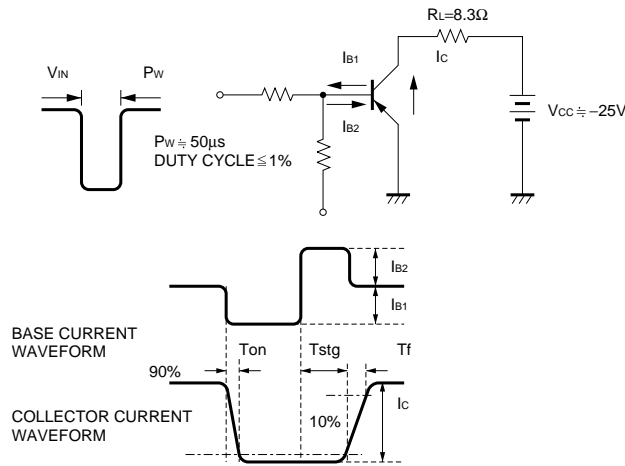


Fig.11 Grounded emitter propagation characteristics

●Switching characteristics measurement circuits



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