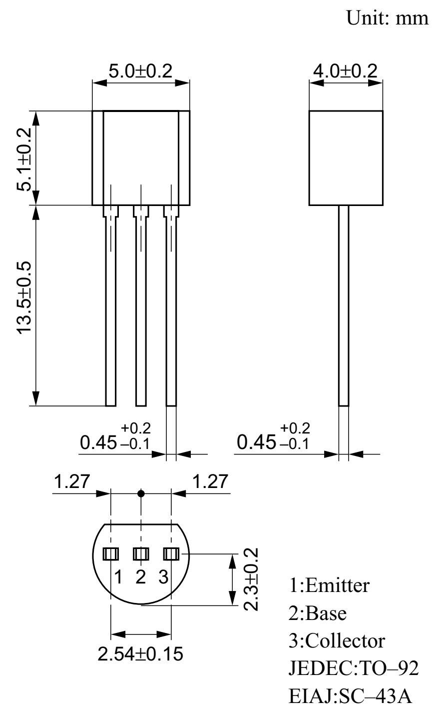
2SC3811

Silicon NPN epitaxial planer type

For high speed switching



■ Features

- High-speed switching.
- Low collector to emitter saturation voltage $V_{CE(sat)}$.

■ Absolute Maximum Ratings (Ta=25˚C)

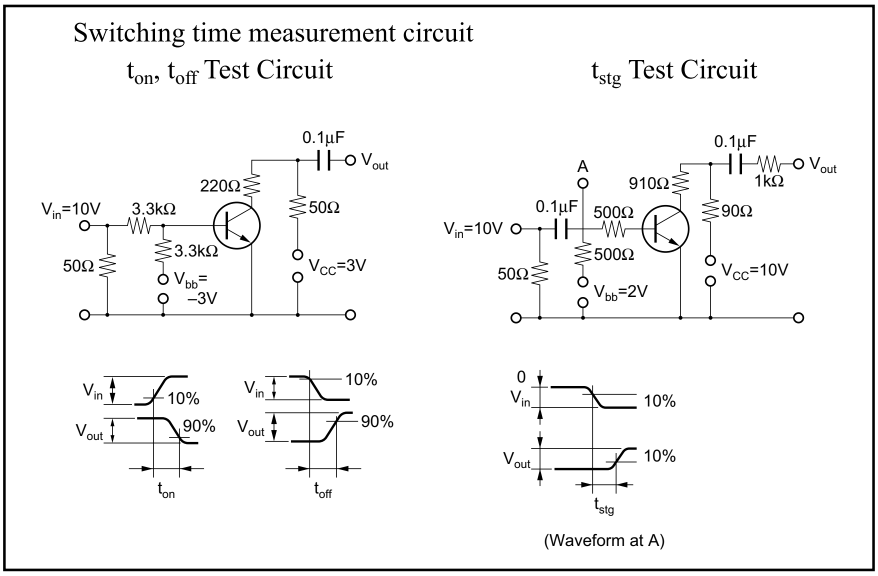
Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	40	V
Collector to emitter voltage	V_{CES}	40	V
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	300	mA
Collector current	I_C	100	mA
Collector power dissipation	P_C	400	mW
Junction temperature	T_j	150	˚C
Storage temperature	T_{stg}	–55 ~ +150	˚C

■ Electrical Characteristics (Ta=25˚C)

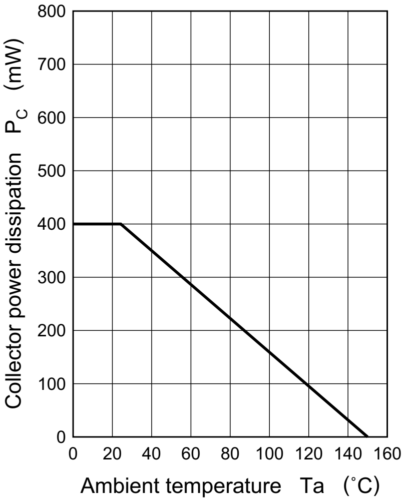
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 40V, I_E = 0			0.1	µA
Emitter cutoff current	I_{EBO}	V_{EB} = 4V, I_C = 0			0.1	µA
Forward current transfer ratio	h_{FE}^*	V_{CE} = 1V, I_C = 10mA	60		200	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 10mA, I_B = 1mA		0.17	0.25	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 10mA, I_B = 1mA			1.0	V
Transition frequency	f_T	V_{CB} = 10V, I_E = –10mA, f = 200MHz		450		MHz
Collector output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz		2	6	pF
Turn-on time	t_{on}	Refer to the measurment circuit		17		ns
Turn-off time	t_{off}			17		ns
Storage time	t_{stg}			10		ns

$^*h_{FE}$ Rank classification

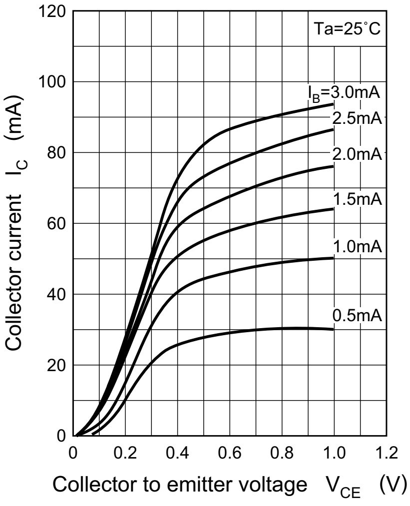
Rank	Q	R
h_{FE}	60 ~ 120	90 ~ 200


Switching time measurement circuit

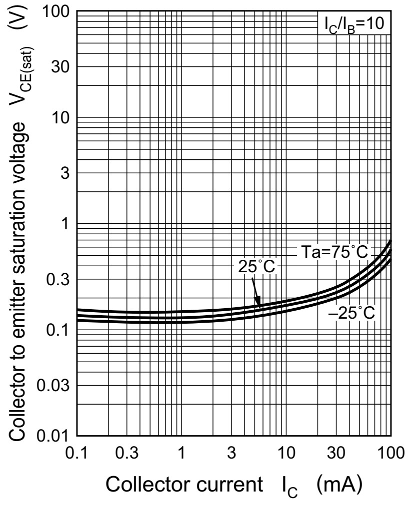
P_C — Ta



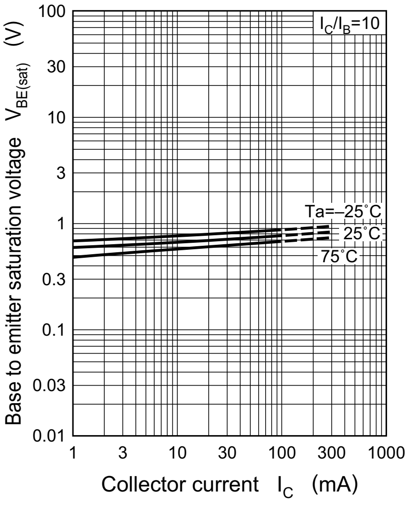
I_C — V_{CE}



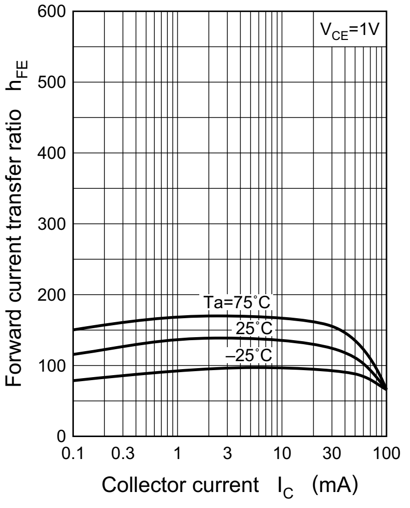
$V_{CE(sat)}$ — I_C



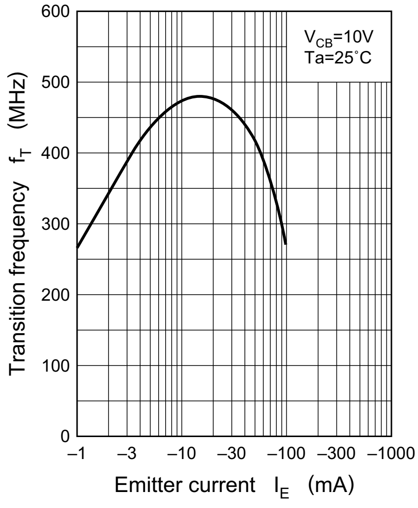
$V_{BE(sat)}$ — I_C



h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}