

2SC3757

Silicon NPN epitaxial planer type

For high speed switching

■ Features

- High-speed switching
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.
- Allowing pair use with 2SA1738

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

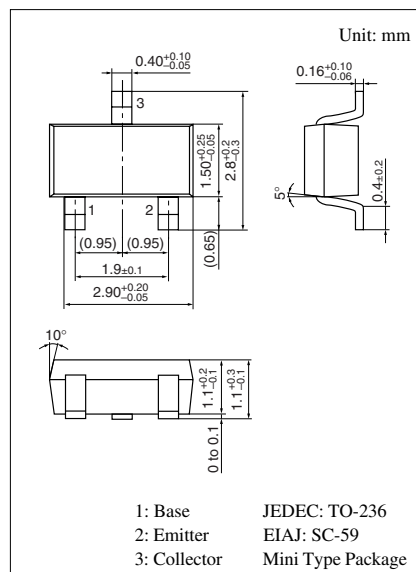
Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	40	V
Collector to emitter voltage	V_{CES}	40	V
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	300	mA
Collector current	I_C	100	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 15\text{ V}, I_E = 0$			0.1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 4\text{ V}, I_C = 0$			0.1	μA
Forward current transfer ratio *	h_{FE}	$V_{CE} = 1\text{ V}, I_C = 10\text{ mA}$	60		200	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$		0.17	0.25	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$			1.0	V
Transition frequency	f_T	$V_{CB} = 10\text{ V}, I_E = -10\text{ mA}, f = 200\text{ MHz}$		450		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		2	6	pF
Turn-on time	t_{on}	Refere to the measurement circuit		17		ns
Turn-off time	t_{off}			17		ns
Storage time	t_{stg}			10		ns

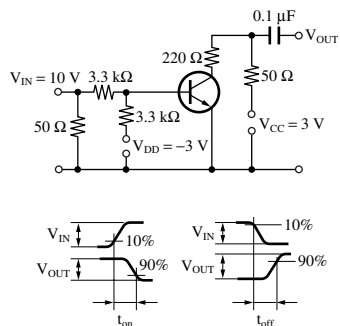
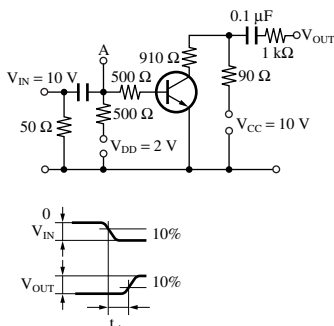
Note) *: Rank classification

Rank	Q	R
h_{FE}	60 to 120	90 to 200
Marking symbol	2YQ	2YR

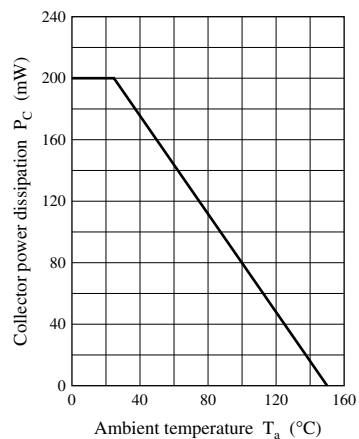
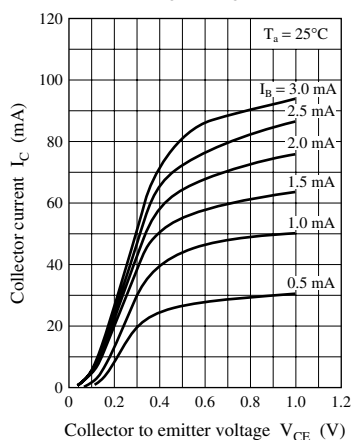
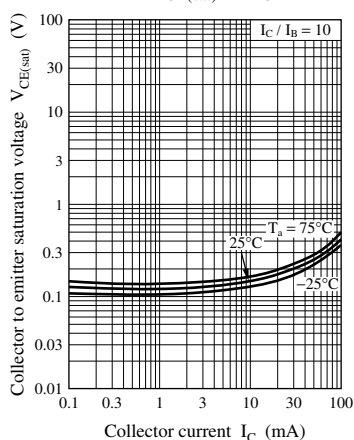
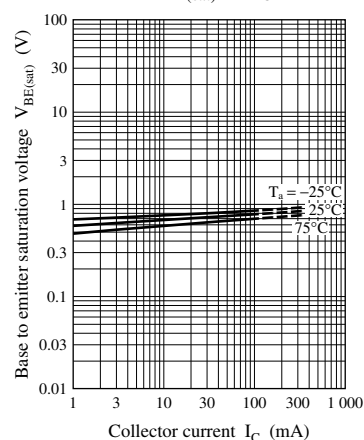
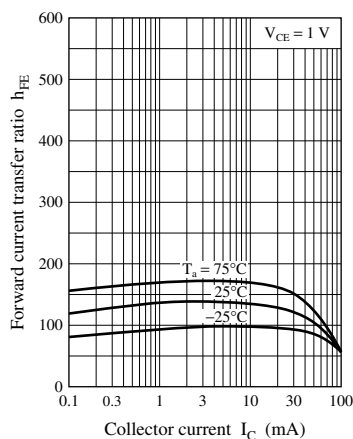
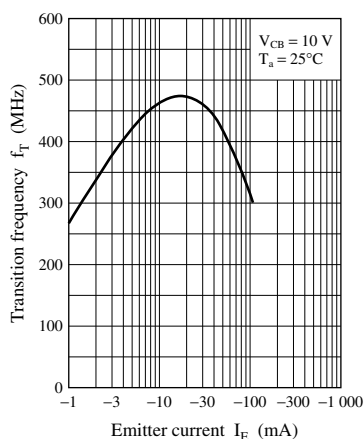


Marking Symbol: 2Y

Switching time measurement circuit

 t_{on} , t_{off} Test circuit t_{stg} Test circuit

(Waveform at A)

 $P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$ 