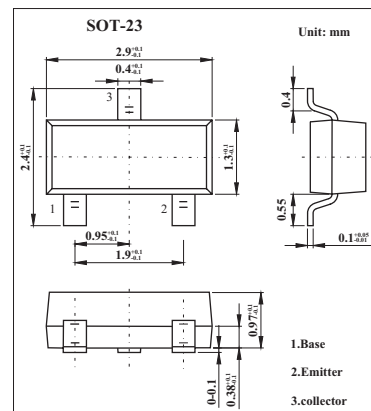


Power Transistor

2SC3837K

■ Features

- High transition frequency. (Typ. $f_T = 1.5\text{GHz}$)
- Small $r_{bb'}$. C_c and high gain. (Typ. 6ps)



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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	30	V
Collector-emitter voltage	V_{CE0}	18	V
Emitter-base voltage	V_{EB0}	3	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	0.2	W
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* Single pulse $P_w=100\text{ms}$.

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CB0}	$I_C=10\mu\text{A}$	30			V
Collector-emitter breakdown voltage	V_{CE0}	$I_C=1\text{mA}$	18			V
Emitter-base breakdown voltage	V_{EB0}	$I_E=10\mu\text{A}$	3			V
Collector cutoff current	I_{CBO}	$V_{CB}=20\text{V}$			0.5	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=10\text{V}$			0.5	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C/I_B=20\text{mA}/4\text{mA}$			0.5	V
DC current gain	h_{FE}	$V_{CE}=10\text{V}, I_C=10\text{mA}$	56		180	
Collector-base time constant	$r_{bb'}.C_c$	$V_{CB}=10\text{V}, I_C=10\text{mA}, f=31.8\text{MHz}$		6	13	ps
Noise factor	NF	$V_{CE}=12\text{V}, I_C=2\text{mA}, f=200\text{MHz}, R_g=50\Omega$		4.5		dB
Output capacitance *	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		0.9	1.5	pF
Transition frequency	f_T	$V_{CE}=10\text{V}, I_E=10\text{mA}, f=200\text{MHz}$	600	1500		MHz

* Measured using pulse current.

■ h_{FE} Classification

Marking	ACN	ACP
Rank	N	P
h_{FE}	56~120	82~180