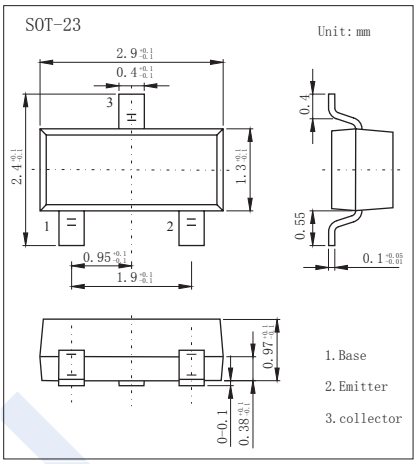
NPN Transistors

2SC3838



■ Features

- High transition frequency.
- Small rbb'·Cc and high gain.
- Small NF.

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	20	V
Collector - Emitter Voltage	V_{CEO}	11	
Emitter - Base Voltage	V_{EBO}	3	
Collector Current - Continuous	I_C	50	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	20			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B =0	11			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	3			
Collector-base cut-off current	I_{CBO}	V_{CB}= 20 V , I_E= 0			0.5	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 3V , I_C=0			0.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10 mA, I_B=5mA			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=10 mA, I_B=5mA			1.2	
DC current gain	h_{FE}	V_{CE}= 10V, I_C= 5mA	82		240	
Collector-base time constant	rbb'· Cc	V_{CB} = 10 V, I_C = 10 mA, f=31.8 MHz,		4	12	PS
Noise figure	NF	V_{CE} = 6 V, I_C = 2 mA, f=500 MHz, Rg=50Ω		3.5		dB
Collector output capacitance	C_{ob}	V_{CB}= 10V, I_E= 0,f=1MHz			1.5	pF
Transition frequency	f_T	V_{CE}= 10V, I_C= 10mA,f=500Mhz	1.4	3.2		GHz

■ Classification of h_{fe}

Type	2SC3838-P	2SC3838-Q	2SC3838-Y
Range	82-180	100-200	120-240
Marking	ADP	ADQ	ADY