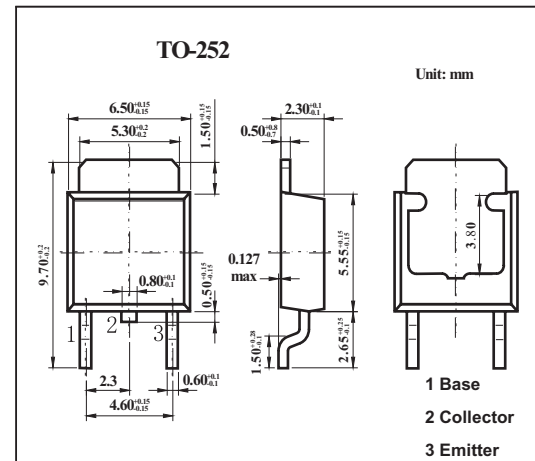


High-Current Switching Applications

2SC4306

■ Features

- Low saturation voltage.
- Fast switching speed.
- Large current capacity.

■ 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}	20	V
Emitter-base voltage	V_{EB0}	5	V
Collector current	I_C	8	A
Collector current (pulse)	I_{CP}	12	A
Base current	I_B	1.5	A
Collector dissipation $T_c=25^\circ\text{C}$	P_C	1	W
	P_C	15	W
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

2SC4306

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	I_{CBO}	$V_{CB} = 20V, I_E = 0$			1	μA	
Emitter cutoff current	I_{EBO}	$V_{EB} = 4V, I_C = 0$			1	μA	
DC current gain	h_{FE}	$V_{CE} = 2V, I_C = 500mA$	100		400		
		$V_{CE} = 2V, I_C = 6A$	70				
Gain bandwidth product	f_T	$V_{CE} = 2V, I_C = 500mA$		250		MHz	
Output capacitance	C_{ob}	$V_{CB} = 10V, f = 1.0MHz$		60		pF	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 5A, I_B = 250mA$		220	400	mV	
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 5A, I_B = 250mA$		1	1.3	V	
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	30			V	
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	20			V	
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	5			V	
Turn-on time	t_{on}			30	300	ns	
Storage time	t_{stg}				250	1000	ns
Fall time	t_f				15	150	ns

■ hFE Classification

Rank	R	S	T
hFE	100~200	140~280	200~400