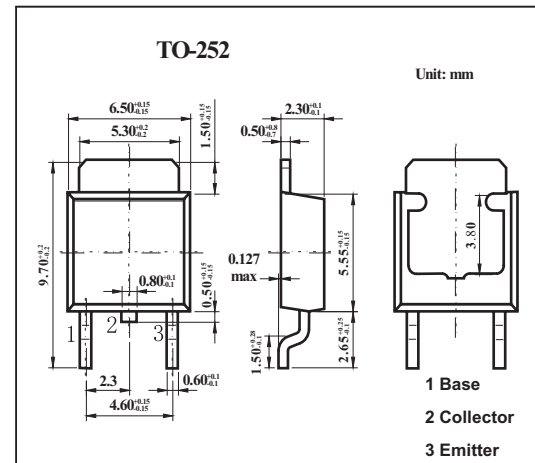


## High-Current Switching Applications

## 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	$\mu A$	
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 4V, I_C = 0$			1	$\mu A$	
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