

## NPN Epitaxial Planar Silicon Transistor

## 2SC4695

## ■ Features

- Adoption of FBET process.
- High DC current gain.
- High  $V_{EBO}$  ( $V_{EBO} \geq 25V$ ).
- High reverse  $h_{FE}$  (150 typ).
- Small ON resistance [ $R_{on}=1W$  ( $I_B=5mA$ )].

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	50	V
Collector-emitter voltage	$V_{CEO}$	20	V
Emitter-base voltage	$V_{EBO}$	25	V
Collector current	$I_C$	500	mA
Collector current (pulse)	$I_{CP}$	800	mA
Base current	$I_B$	100	mA
Collector dissipation	$P_C$	250	mW
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ C$

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## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit	
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 40V, I <sub>E</sub> =0			0.1	μA	
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = 20V, I <sub>C</sub> =0			0.1	μA	
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA	300		1200		
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA		250		MHz	
Output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, f = 1.0MHz		3.6		pF	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 100mA, I <sub>B</sub> = 2mA		0.12	0.5	V	
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 100mA, I <sub>B</sub> = 2mA		0.85	1.2	V	
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	50			V	
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞	20			V	
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	25			V	
Turn-on time	t <sub>on</sub>	<p>PW = 1μs duty ≤ 2.5% tr, tf = 1ns</p> <p>10V INPUT</p> <p>4k</p> <p>3k</p> <p>1k OUTPUT</p> <p>50</p> <p>V<sub>BB</sub> = -3V</p> <p>V<sub>CC</sub> = 12V</p> <p>Unit (resistance : Ω)</p>		135		ns	
Storage time	t <sub>stg</sub>				450		ns
Fall time	t <sub>f</sub>				100		ns

## ■ Marking

Marking	WT
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