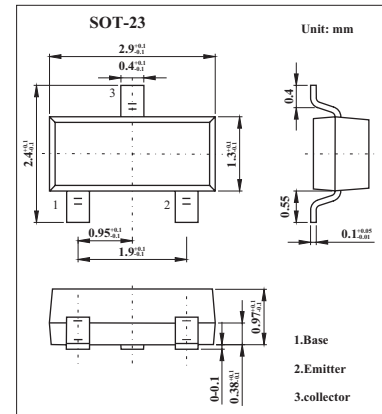


## NPN Silicon Epitaxial Transistor

### 2SC1654

#### ■ Features

- High DC current gain.  $h_{FE}=130$  typ. ( $V_{CE}=3.0V, I_C=15mA$ )
- High voltage  $V_{CEO}$ : 160V



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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	180	V
Collector-emitter voltage	$V_{CEO}$	160	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	50	mA
power dissipation	$P_D$	150	mW
Junction temperature	$T_j$	125	$^\circ C$
Storage temperature	$T_{stg}$	-55 to +125	$^\circ C$

#### ■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 130V, I_E=0$			0.1	$\mu A$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 5V, I_C=0$			0.1	$\mu A$
DC current gain *	$h_{FE}$	$V_{CE} = 3V, I_C = 15mA$	90	200	400	
		$V_{CE} = 3V, I_C = 1mA$	70	180		
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 50mA, I_B = 5mA$		0.1	0.3	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 50mA, I_B = 5mA$		0.73	1.0	V
Output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1.0MHz$		2.3		pF
Transistor frequency	$f_T$	$V_{CE} = 10V, I_E = -10mA$		120		MHz

\* Pulse test:  $t_p \leq 350 \mu s; d \leq 0.02$ .

#### ■ $h_{FE}$ Classification

Marking	N5	N6	N7
$h_{FE}$	90~180	135~270	200~400

# 2SC1654

■ Typical Characteristics

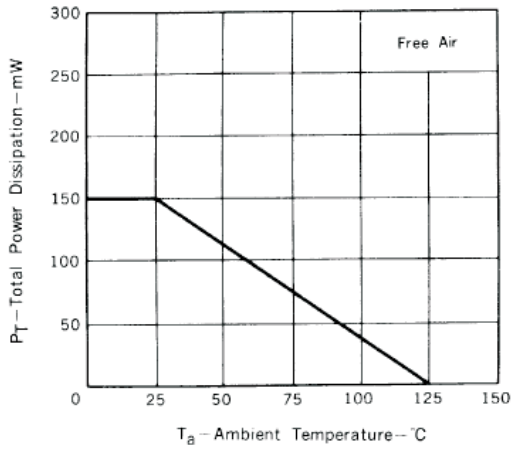


Fig.1 Total Power Dissipation vs. Ambient Temperature

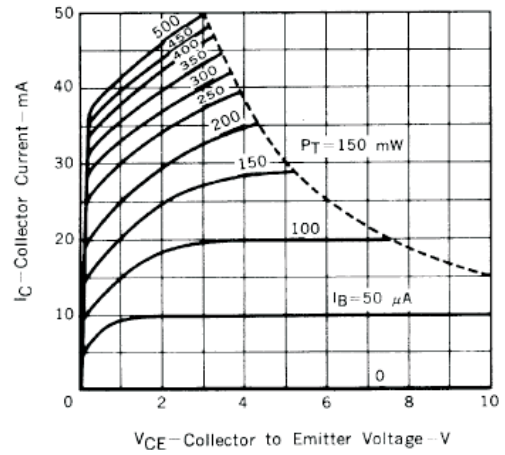


Fig.2 Collector Current vs. Collector to Emitter Voltage

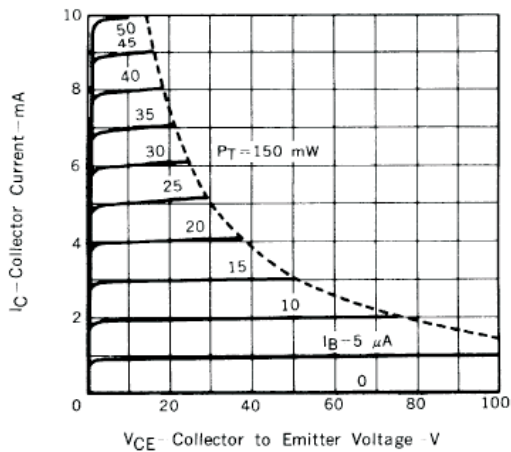


Fig.3 Collector Current vs. Base to Emitter Voltage

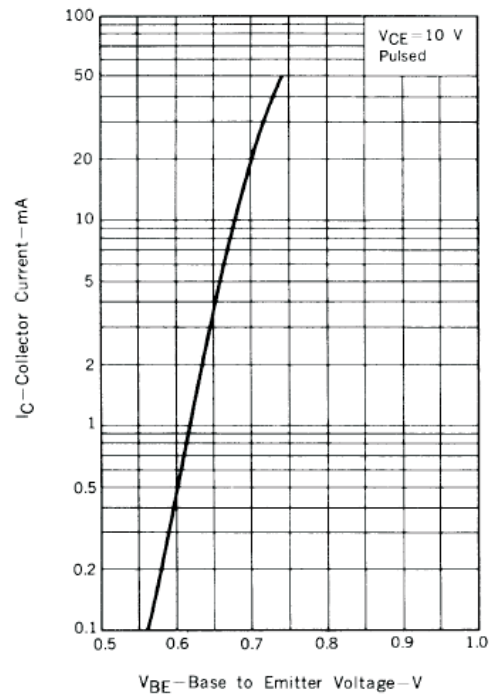


Fig.4 Collector Current vs. Collector to Emitter Voltage

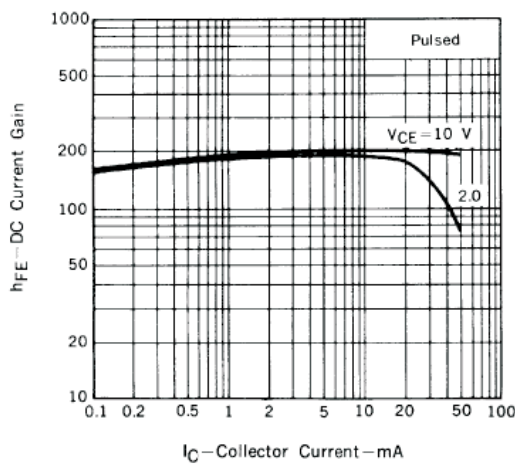


Fig.5 DC Current Gain vs. Collector Current

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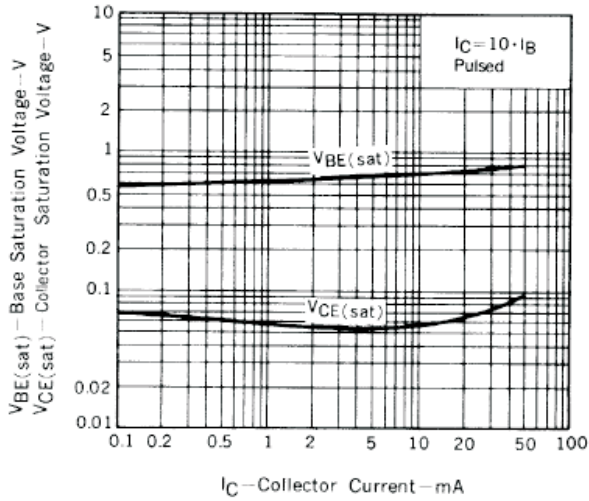


Fig.6 Base And Collector Saturation Voltage vs. Collector Current

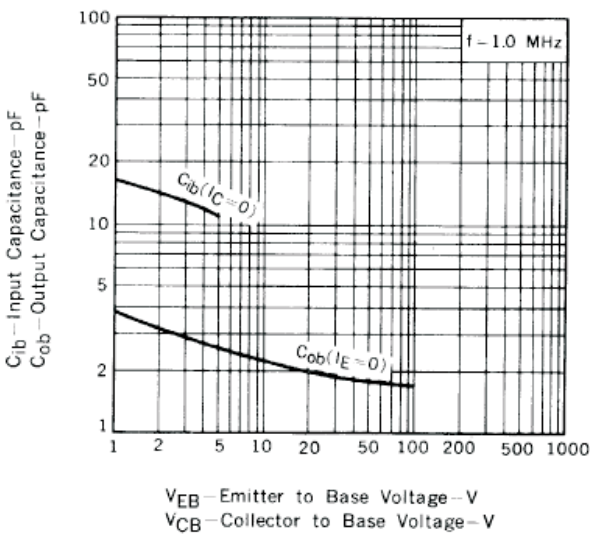
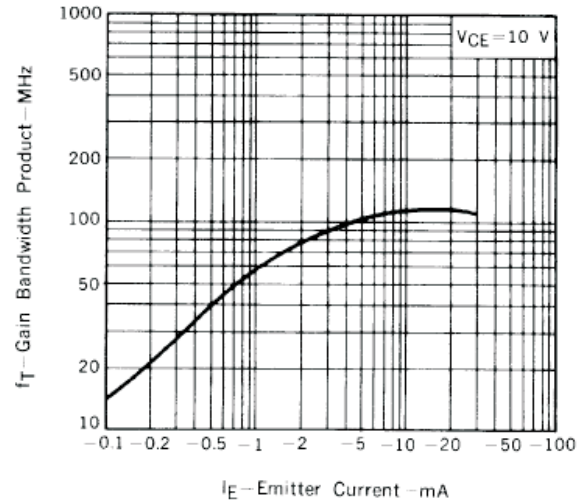


Fig.8 Input And Output Capacitance vs. Reverse Voltage