

NPN SILICON EPITAXIAL TRANSISTOR
FOR LOW-FREQUENCY POWER AMPLIFIERS AND SWITCHING

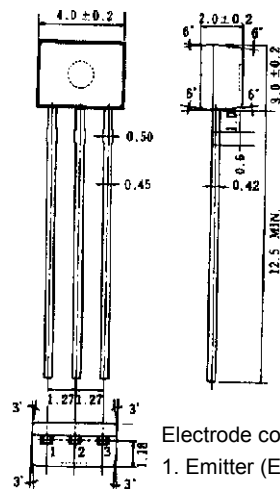
FEATURES

- High h_{FE} :
 $h_{FE} = 1000$ to 3200 @ $V_{CE} = 5.0$ V, $I_C = 1.0$ mA
- Low $V_{CE(sat)}$:
 $V_{CE(sat)} = 0.07$ V TYP. @ $I_C/I_B = 50$ mA/5.0 mA
- High V_{EBO} :
 $V_{EBO} = 12$ V (2SC3623)
 $V_{EBO} = 15$ V (2SC3623A)

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Ratings		Unit
		2SC3623	2SC3623A	
Collector to base voltage	V_{CBO}	60		V
Collector to emitter voltage	V_{CEO}	50		V
Emitter to base voltage	V_{EBO}	12	15	V
Collector current (DC)	$I_{C(DC)}$	150		mA
Total power dissipation	P_T	250		mW
Junction temperature	T_j	150		$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150		$^\circ\text{C}$

PACKAGE DRAWING (UNIT: mm)



Electrode connection

1. Emitter (E)
2. Collector (C)
3. Base (B)

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

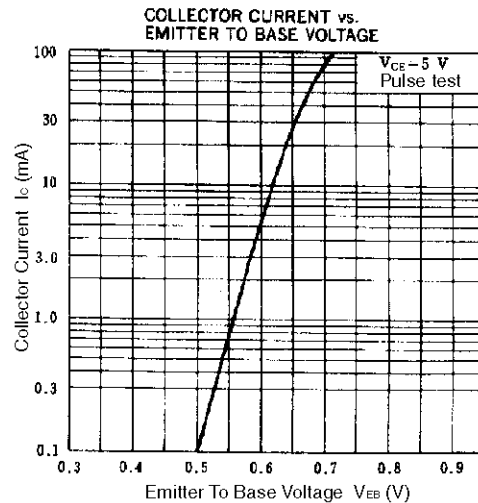
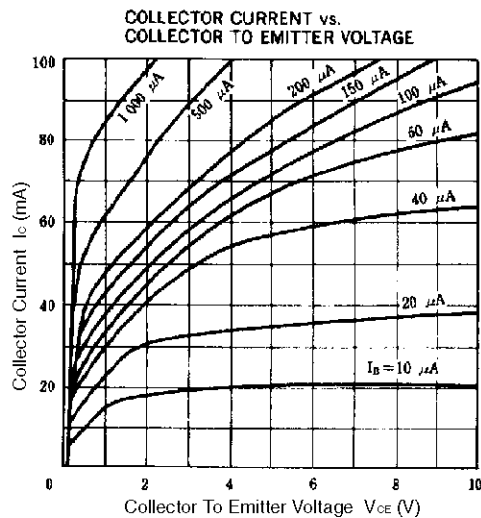
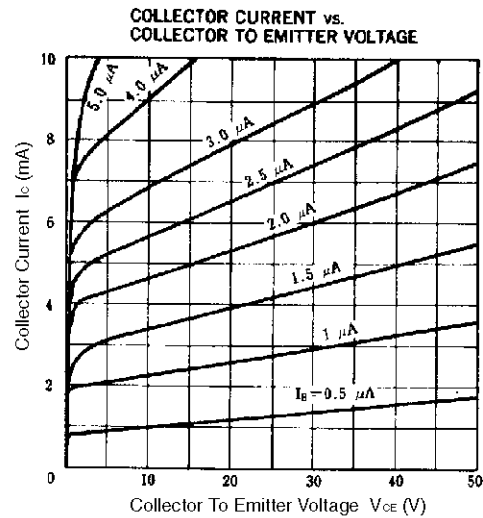
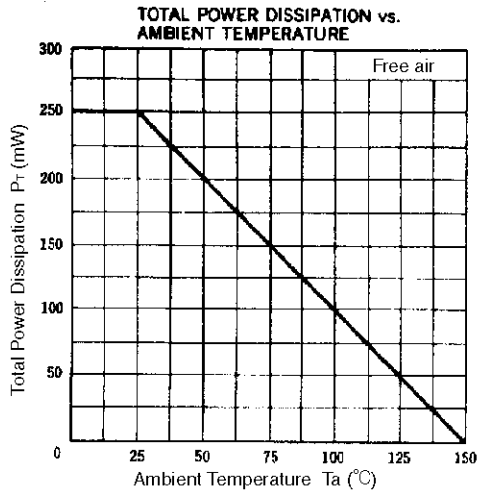
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 50\text{ V}, I_E = 0$			100	nA
Emitter cutoff current	I_{EBO}	$V_{EB} = 10\text{ V}, I_C = 0$			100	nA
DC current gain	h_{FE1}	$V_{CE} = 5.0\text{ V}, I_C = 1.0\text{ mA}^*$	1000	1800	3200	—
DC current gain	h_{FE2}	$V_{CE} = 5.0\text{ V}, I_C = 100\text{ mA}^*$	200	350		
DC base voltage	V_{BE}	$V_{CE} = 5.0\text{ V}, I_C = 1.0\text{ mA}^*$		560		mV
Collector saturation voltage	$V_{CE(sat)}$	$I_C = 50\text{ mA}, I_B = 5.0\text{ mA}^*$		0.07	0.30	V
Base saturation voltage	$V_{BE(sat)}$	$I_C = 50\text{ mA}, I_B = 5.0\text{ mA}^*$		0.8	1.2	V
Gain bandwidth product	f_T	$V_{CE} = 5.0\text{ V}, I_E = -10\text{ mA}$		250		MHz
Output capacitance	C_{ob}	$V_{CB} = 5\text{ V}, I_E = 0, f = 1.0\text{ MHz}$		3.0		pF
Turn-on time	t_{on}	$V_{CC} = 10\text{ V}, V_{BE(off)} = -2.7\text{ V}$ $I_C = 50\text{ mA}$ $I_{B1} = -I_{B2} = 1\text{ mA}$		0.13		μs
Storage time	t_{stg}			0.72		μs
Turn-off time	t_{off}			1.22		μs

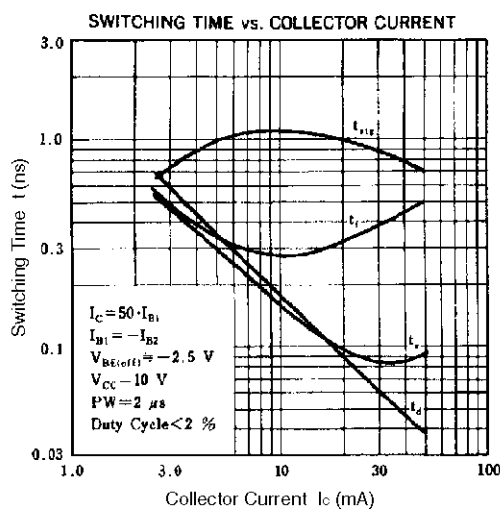
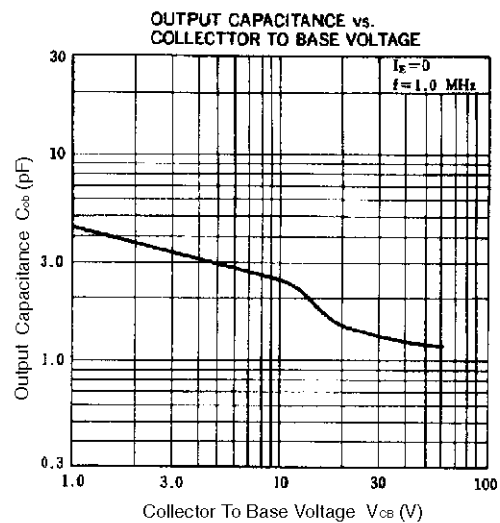
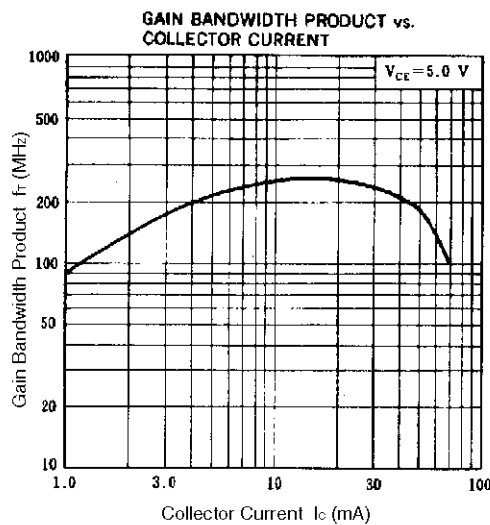
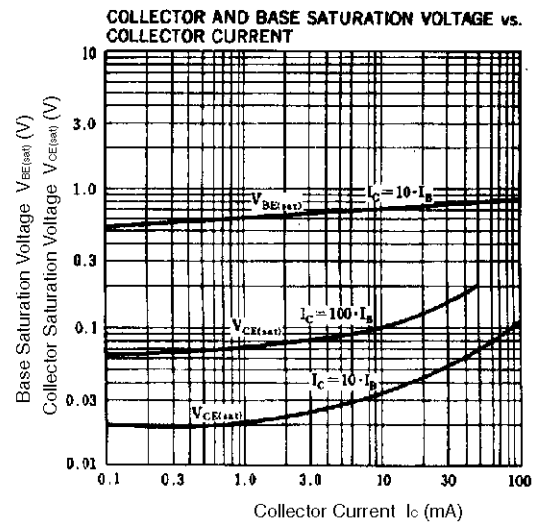
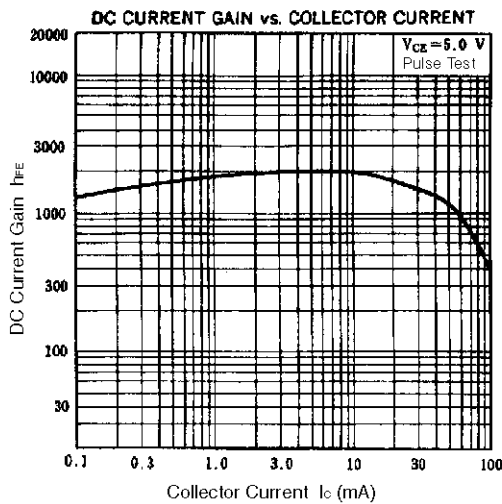
* Pulse test $PW \leq 350\ \mu\text{s}$, duty cycle $\leq 2\%$

h_{FE} CLASSIFICATION

Marking	L	K
h_{FE1}	1000 to 2000	1600 to 3200

TYPICAL CHARACTERISTICS (Ta = 25°C)





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