

SILICON TRANSISTORS

2SA1376, 1376A

PNP SILICON EPITAXIAL TRANSISTOR FOR HIGH VOLTAGE AMPLIFIERS

FEATURES

- High voltage
 V_{CEO} : -180 V / -200 V
(2SA1376/2SA1376A)
- Excellent h_{FE} linearity
- High total power dissipation in small dimension:
 P_T : 0.75 W
- Complementary transistor with 2SC3478 and 2SC3478A

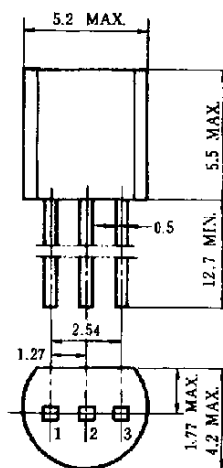
ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

2SA1376/2SA1376A

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	-200	V
Collector to emitter voltage	V_{CEO}	-180/-200	V
Emitter to base voltage	V_{EBO}	-5	V
Collector current (DC)	$I_{C(DC)}$	-100	mA
Collector current (pulse)	$I_{C(pulse)^*}$	-200	mA
Total power dissipation	P_T	0.75	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10$ ms, duty cycle $\leq 50\%$

PACKAGE DRAWING (UNIT: mm)



Electrode Connection

1. Emitter FIAJ : SC-43B
2. Collector JEDEC : TO-92
3. Base IEC : PA33

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

2SA1376/2SA1376A

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -200$ V, $I_E = 0$			-100	nA
Emitter cutoff current	I_{EBO}	$V_{EB} = -5$ V, $I_C = 0$			-100	nA
DC current gain	h_{FE1}^{**}	$V_{CE} = -10$ V, $I_C = -10$ mA	135	300/200	600/400	-
DC current gain	h_{FE2}^{**}	$V_{CE} = -10$ V, $I_C = -100$ mA	81			-
DC base voltage	V_{BE}^{**}	$V_{CE} = -10$ V, $I_C = -10$ mA	-600	-650	-700	mV
Collector saturation voltage	$V_{CE(sat)}^{**}$	$I_C = -50$ mA, $I_B = -5$ mA		-0.2	-0.3	V
Base saturation voltage	$V_{BE(sat)}^{**}$	$I_C = -50$ mA, $I_B = -5$ mA		-0.8	-1.2	V
Output capacitance	C_{ob}	$V_{CB} = -30$ V, $I_E = 0$, $f = 1.0$ MHz		3.5	4.0	pF
Gain bandwidth product	f_T	$V_{CE} = -10$ V, $I_E = 10$ mA	80	120		MHz
Turn-on time	t_{on}	$I_C = -10$ mA, $I_{B1} = -I_{B2} = -1$ mA,		0.16		μs
Turn-off time	t_{off}	$V_{CC} = -10$ V		1.5		μs

** Pulse test $PW \leq 350$ μs , duty cycle $\leq 2\%$ per pulsed

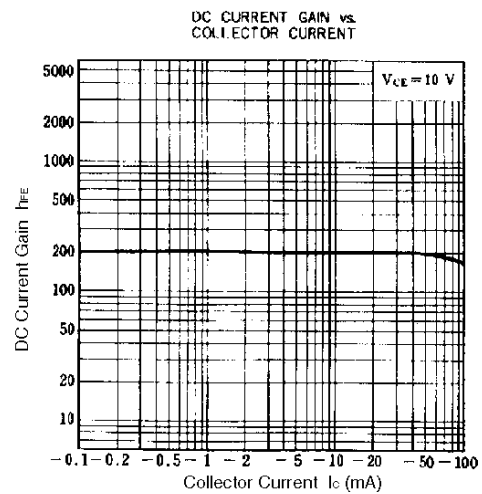
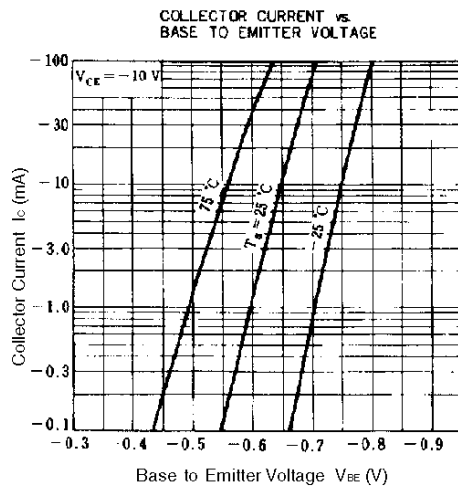
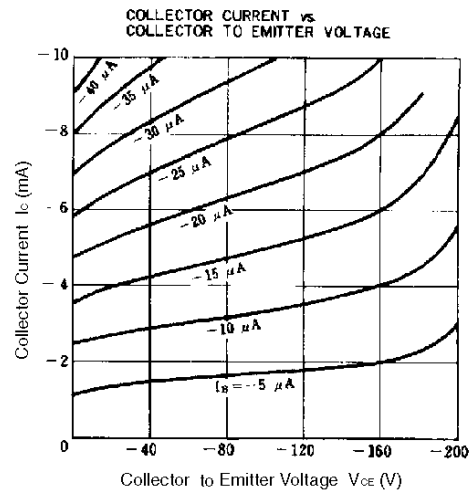
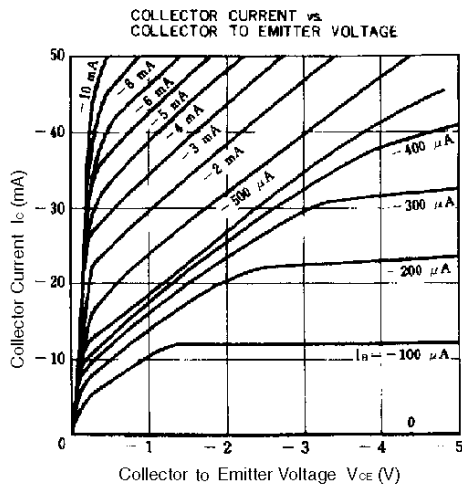
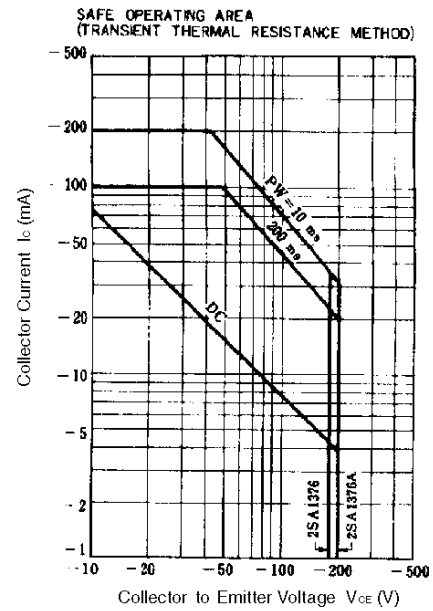
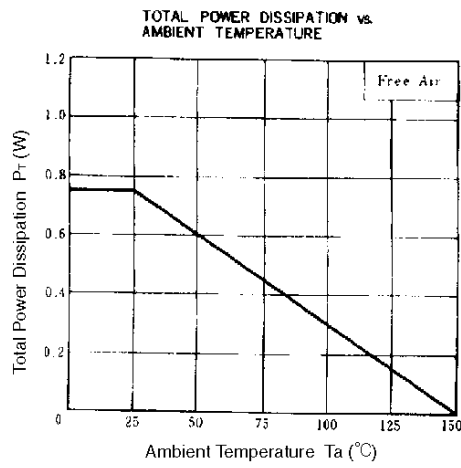
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h_{FE} CLASSIFICATION

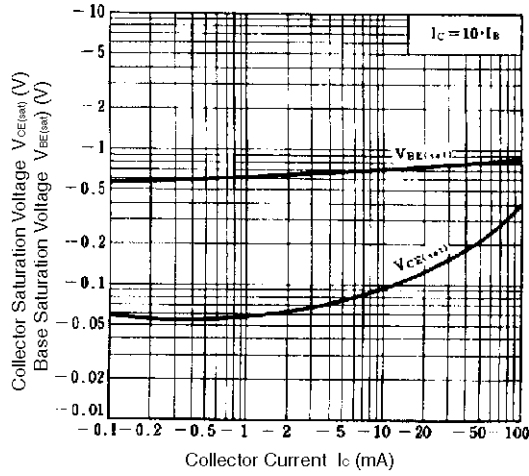
Marking	L	K	U
h _{FE1}	135 to 270	200 to 400	300 to 600

(The U rank is not available for the 2SA1376A.)

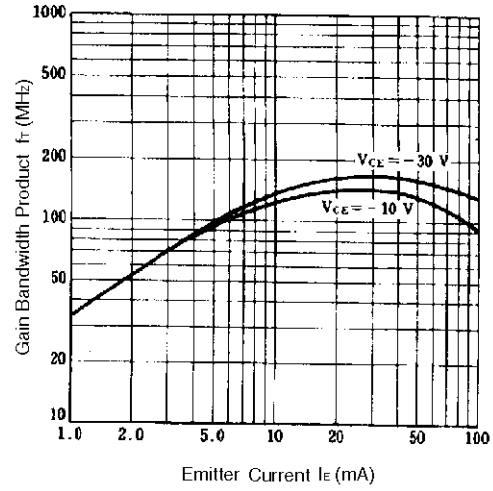
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



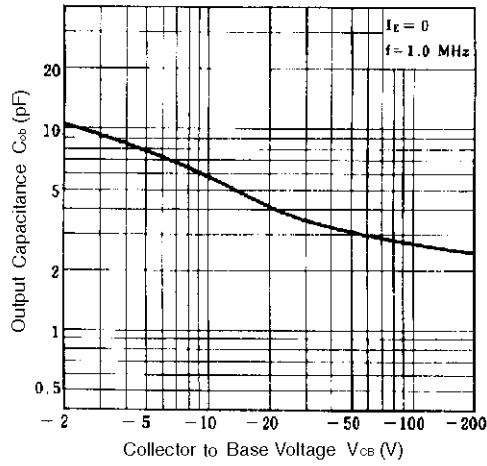
BASE AND COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT



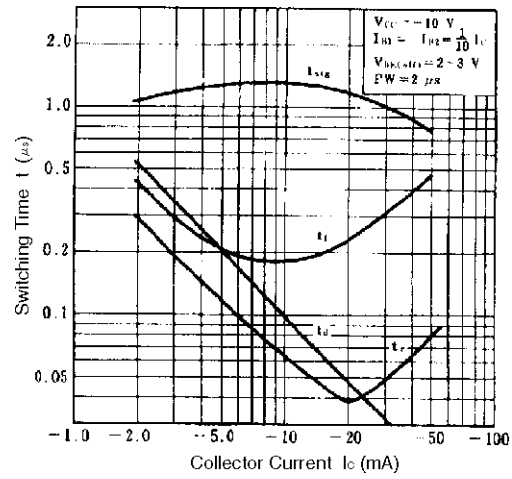
GAIN BANDWIDTH PRODUCT vs
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE



SWITCHING TIME vs
COLLECTOR CURRENT



[MEMO]

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