

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

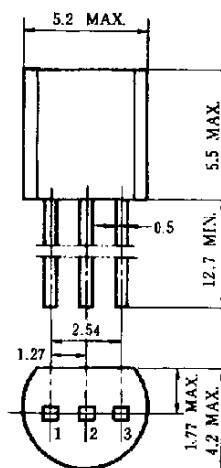
ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

2SA1376/2SA1376A

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V _{CB0}	-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	°C
Storage temperature	T _{stg}	-55 to +150	°C

* PW ≤ 10 ms, duty cycle ≤ 50%

PACKAGE DRAWING (UNIT: mm)



Electrode Connection

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

ELECTRICAL CHARACTERISTICS (Ta = 25°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 _r	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 ≤ 350 μs, duty cycle ≤ 2% per pulsed

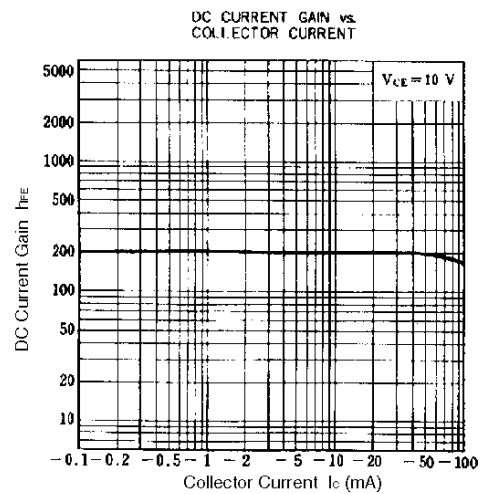
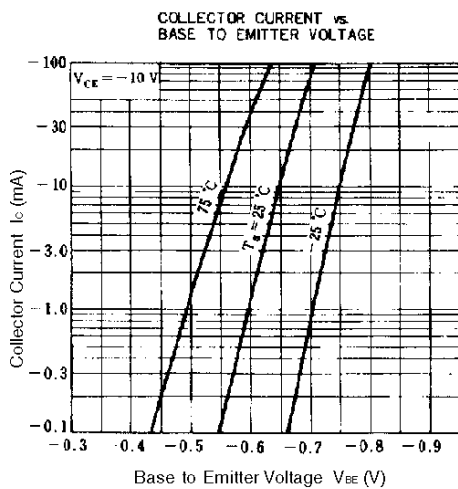
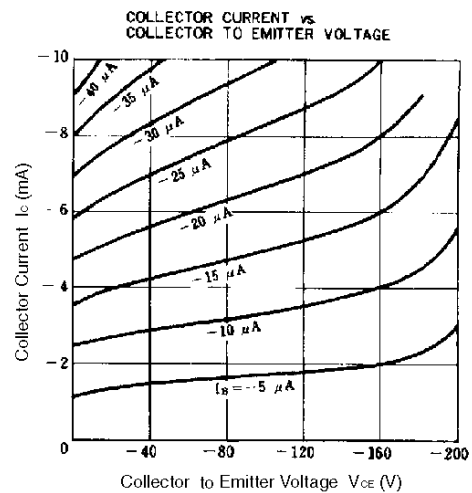
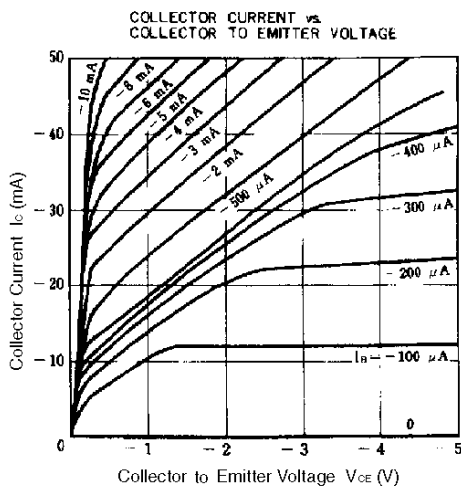
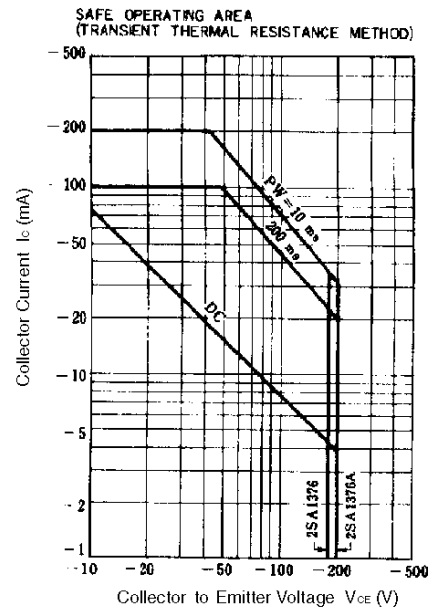
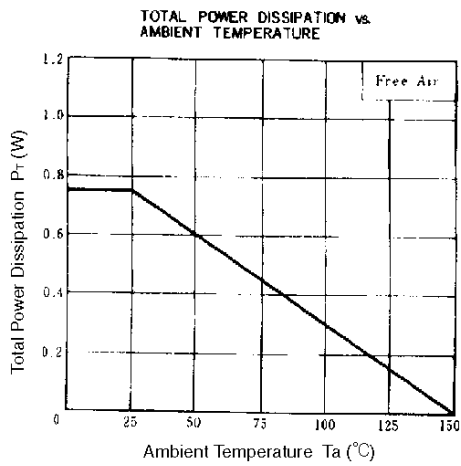
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hFE CLASSIFICATION

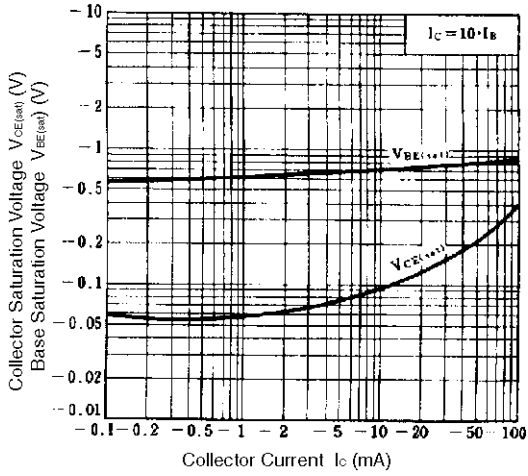
Marking	L	K	U
h _{FE1}	135 to 270	200 to 400	300 to 600

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

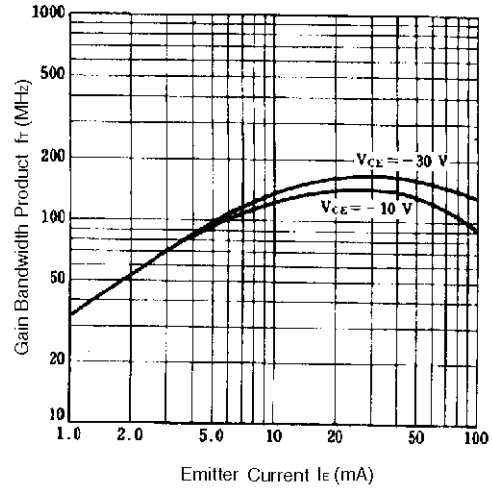
TYPICAL CHARACTERISTICS (Ta = 25°C)



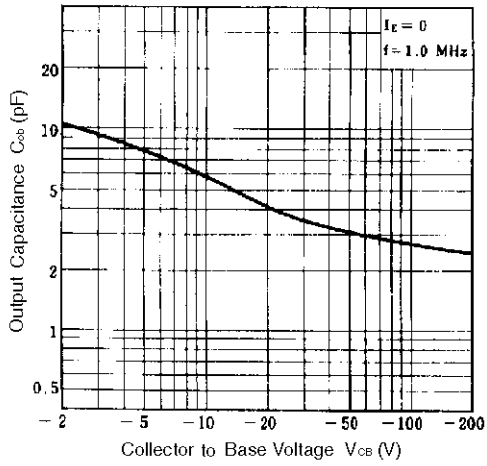
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



SWITCHING TIME vs. COLLECTOR CURRENT

