Ordering number:EN1049D

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1253/2SC3135

High-h_{FE}, AF Amp Applications

Features

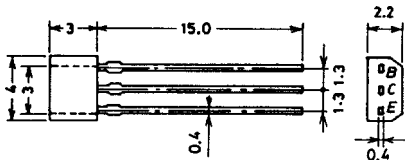
· High V_{EBO}.
· Wide ASO and high durability against breakdown.

Package Dimensions

unit:mm

2033

[2SA1253/2SC3135]



B : Base
C : Collector
E : Emitter

SANYO : SPA

( ) : 2SA1253

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)60	V
Collector-to-Emitter Voltage	V_{CEO}		(–)50	V
Emitter-to-Base Voltage	V_{EBO}		(–)15	V
Collector Current	I_C		(–)200	mA
Collector Current (Pulse)	I_{CP}		(–)400	mA
Collector Dissipation	P_C		250	mW
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

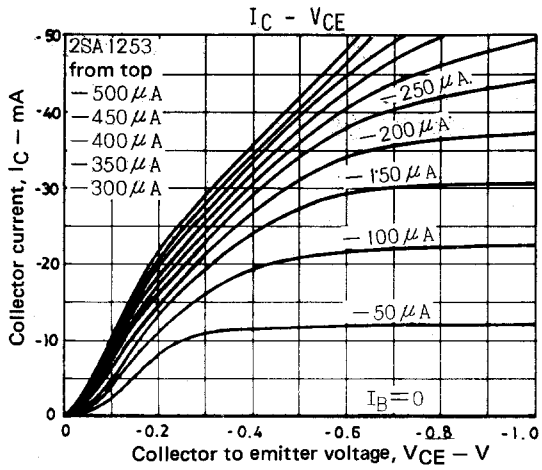
Electrical Characteristics at Ta = 25˚C

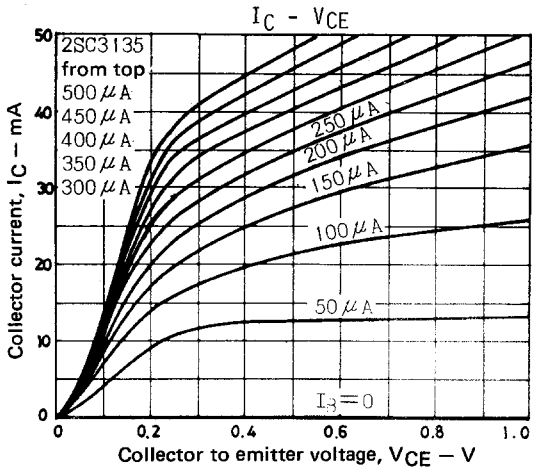
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)40V, I_E=0			(–)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)10V, I_C=0			(–)0.1	μA
DC Current Gain	h_{FE}	V_{CE}=(–)6V, I_C=(–)1mA	100*		560*	
Gain-Bandwidth Product	f_T	V_{CE}=(–)6V, I_C=(–)1mA		100		MHz
Common Base Output Capacitance	Cob	V_{CB}=(–)6V, f=1MHz		(3.8) 2.5		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)50mA, I_B=(–)5mA		(–0.2) 0.15	(–)0.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10μA, I_C=0	(–)15			V

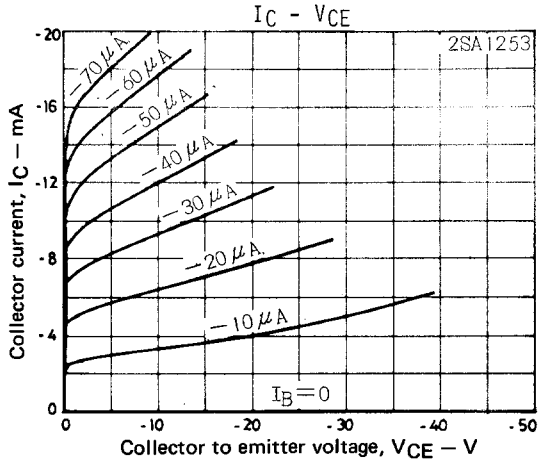
* : The 2SA1253/2SC3135 are classified by 1mA h_{FE} as follows :

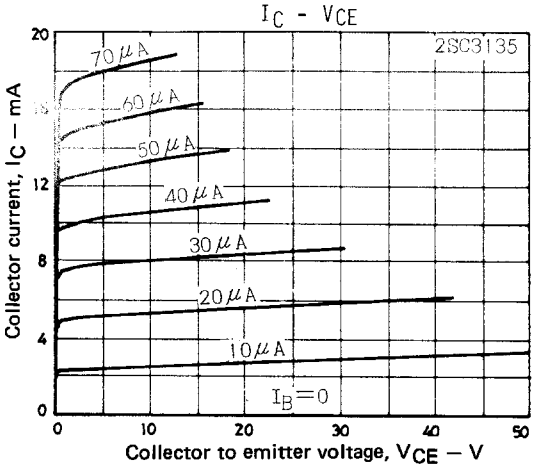
100	R	200	140	S	280	200	T	400	280	U	560

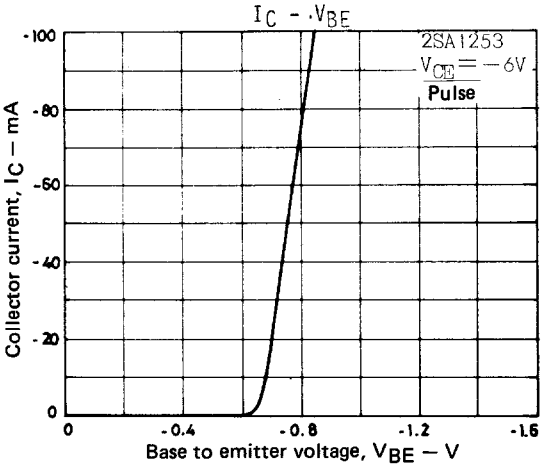
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

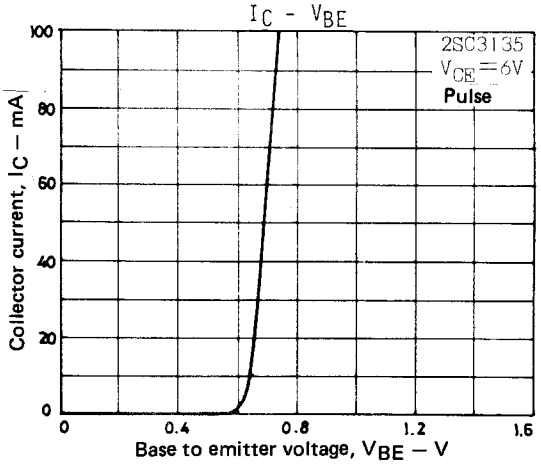

I_C - V_{CE}
2SA1253
from top
−500μA
−450μA
−400μA
−350μA
−300μA
−250μA
−200μA
−150μA
−100μA
−50μA
I_B=0
Collector current, I_C — mA
Collector to emitter voltage, V_{CE} — V

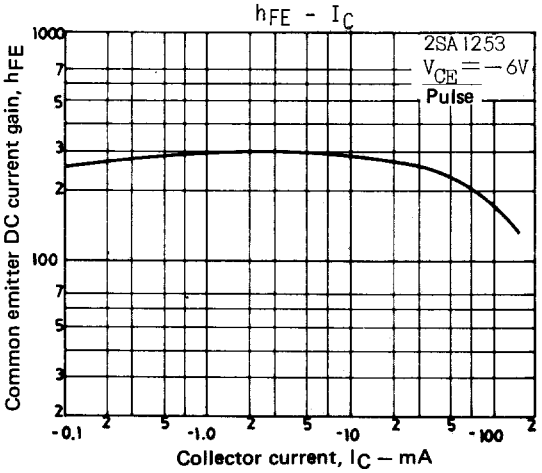

I_C - V_{CE}
2SC3135
from top
500μA
450μA
400μA
350μA
300μA
250μA
200μA
150μA
100μA
50μA
I_B=0
Collector current, I_C — mA
Collector to emitter voltage, V_{CE} — V

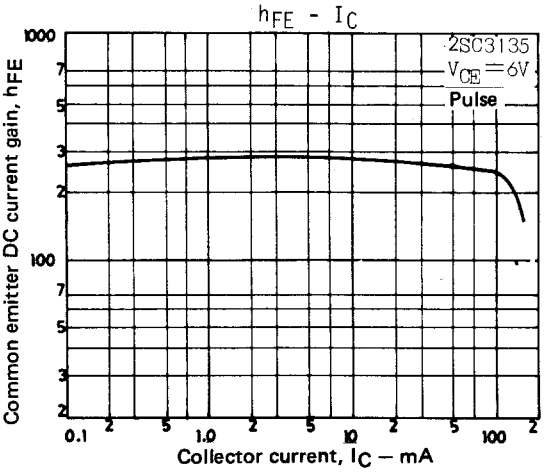

I_C - V_{CE}
2SA1253
−70μA
−60μA
−50μA
−40μA
−30μA
−20μA
−10μA
I_B=0
Collector current, I_C — mA
Collector to emitter voltage, V_{CE} — V

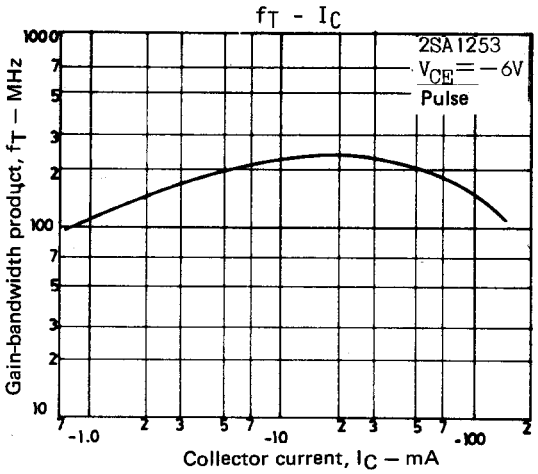

I_C - V_{CE}
2SC3135
70μA
60μA
50μA
40μA
30μA
20μA
10μA
I_B=0
Collector current, I_C — mA
Collector to emitter voltage, V_{CE} — V

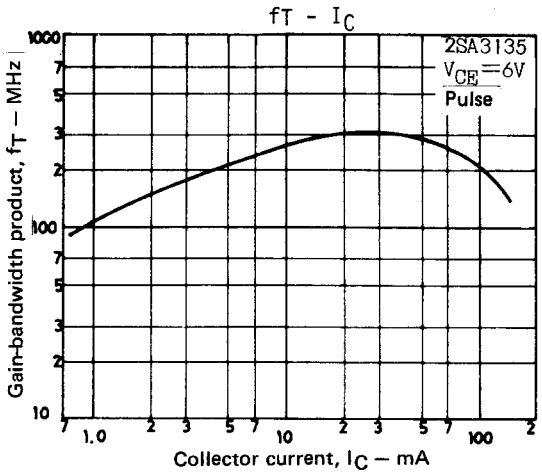

I_C - V_{BE}
2SA1253
V_{CE} = −6V
Pulse
Collector current, I_C — mA
Base to emitter voltage, V_{BE} — V

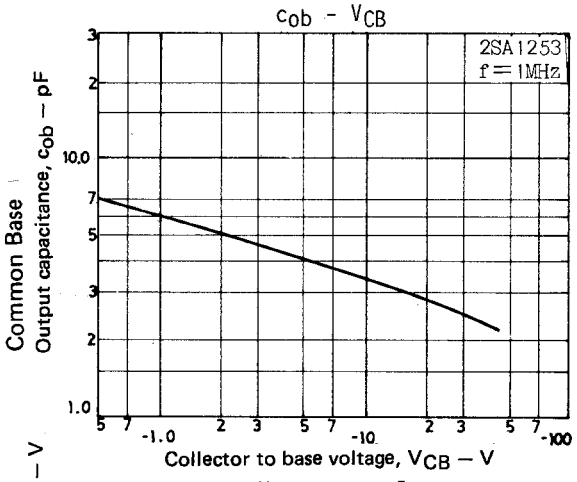

I_C - V_{BE}
2SC3135
V_{CE} = 6V
Pulse
Collector current, I_C — mA
Base to emitter voltage, V_{BE} — V

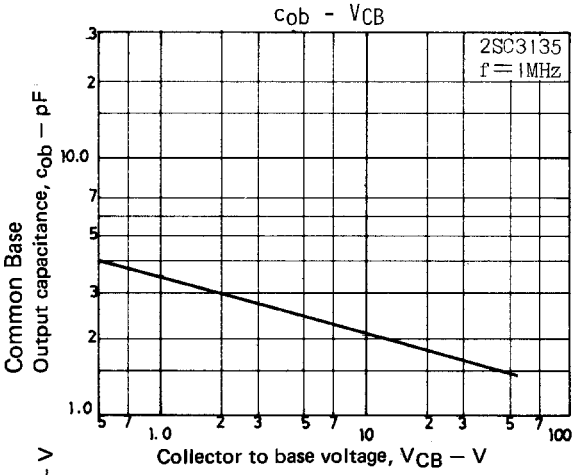

h_{FE} - I_C
2SA1253
V_{CE} = −6V
Pulse
Common emitter DC current gain, h_{FE}
Collector current, I_C — mA

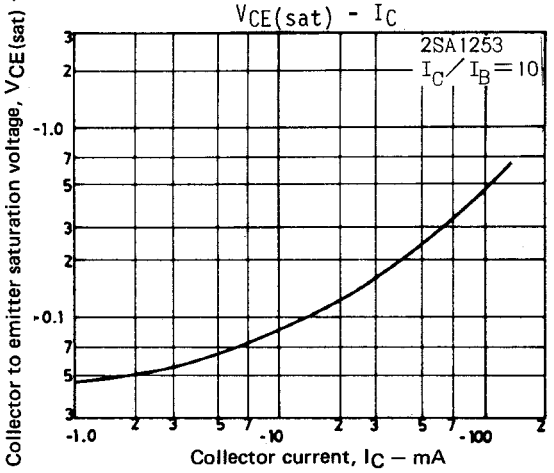

h_{FE} - I_C
2SC3135
V_{CE} = 6V
Pulse
Common emitter DC current gain, h_{FE}
Collector current, I_C — mA

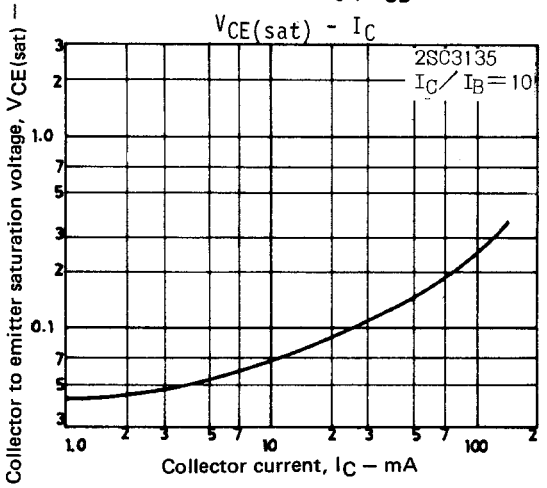

fT - IC
2SA1253
VCE=−6V
Pulse
Gain-bandwidth product, fT — MHz
Collector current, IC — mA

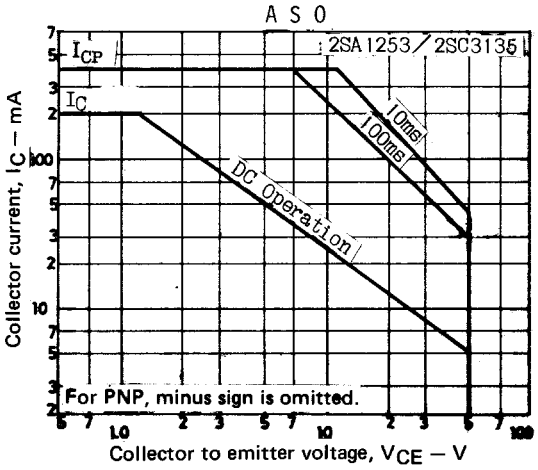

fT - IC
2SA3135
VCE=6V
Pulse
Gain-bandwidth product, fT — MHz
Collector current, IC — mA

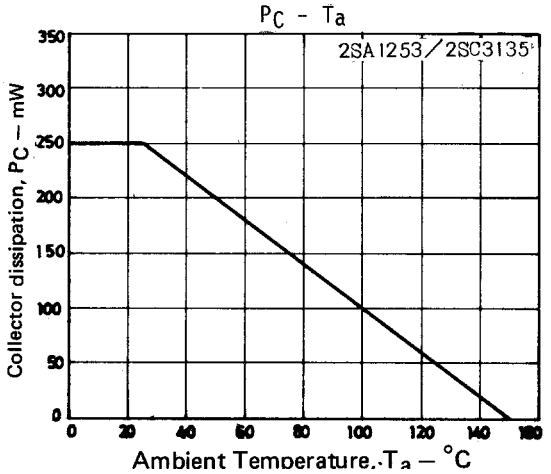

Cob - VCB
2SA1253
f=1MHz
Common Base
Output capacitance, Cob — pF
Collector to base voltage, VCB — V


Cob - VCB
2SC3135
f=1MHz
Common Base
Output capacitance, Cob — pF
Collector to base voltage, VCB — V


VCE(sat) - IC
2SA1253
IC/IB=10
Collector to emitter saturation voltage, VCE(sat) — V
Collector current, IC — mA


VCE(sat) - IC
2SC3135
IC/IB=10
Collector to emitter saturation voltage, VCE(sat) — V
Collector current, IC — mA


A S O
: 2SA1253 / 2SC3135
ICP
IC
10ms
100ms
DC Operation
For PNP, minus sign is omitted.
Collector current, IC — mA
Collector to emitter voltage, VCE — V


PC - Ta
2SA1253 / 2SC3135
Collector dissipation, PC — mW
Ambient Temperature, Ta — °C

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