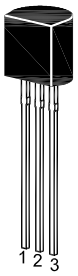
2SA1458

PNP Silicon Epitaxial Planar Transistor

for general purpose amplifier and high speed switching applications.

The transistor is subdivided into three groups M, L and K, according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.



1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

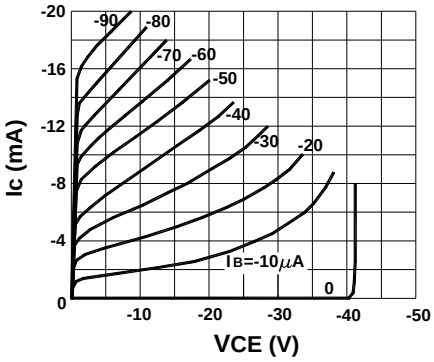
Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	40	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	200	mA
Power Dissipation	P_{tot}	250	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

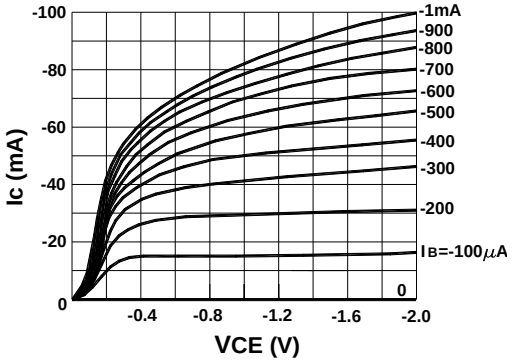
Characteristics at T_a = 25 °C

Parameter			Symbol	Min.	Typ.	Max.	Unit
DC Current Gain							
at $-V_{CE}$ = 1 V, $-I_C$ = 100 mA	Current Gain Group	M	h_{FE}	75	-	150	-
		L	h_{FE}	100	-	200	-
		K	h_{FE}	150	-	300	-
at $-V_{CE}$ = 1 V, $-I_C$ = 1 mA			h_{FE}	25	100	-	-
Collector Base Cutoff Current at $-V_{CB}$ = 30 V			$-I_{CBO}$	-	-	0.1	µA
Emitter Base Cutoff Current at $-V_{EB}$ = 3 V			$-I_{EBO}$	-	-	0.1	µA
Collector Emitter Saturation Voltage at $-I_C$ = 50 mA, $-I_B$ = 5 mA			$-V_{CE(sat)}$	-	0.1	0.4	V
Base Emitter Saturation Voltage at $-I_C$ = 50 mA, $-I_B$ = 5 mA			$-V_{BE(sat)}$	-	0.8	0.95	V
Gain Bandwidth Product at $-V_{CE}$ = 20 V, I_E = 10 mA, f = 100 MHz			f_T	200	510	-	MHz
Output Capacitance at $-V_{CB}$ = 5 V, f = 1 MHz			C_{OB}	-	2.5	4.5	pF
Turn-on Time See test circuit			t_{on}	-	-	70	ns
Storage Time See test circuit			t_{stg}	-	110	225	ns
Turn-off Time See test circuit			t_{off}	-	-	300	ns

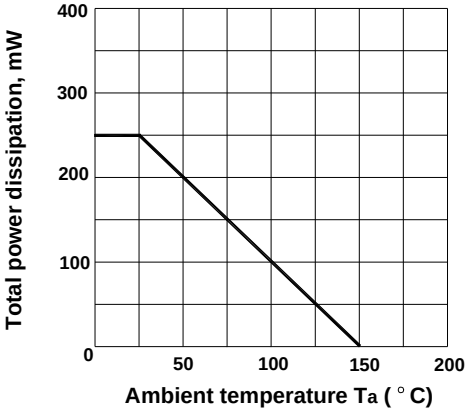
Collector current vs. collector emitter voltage



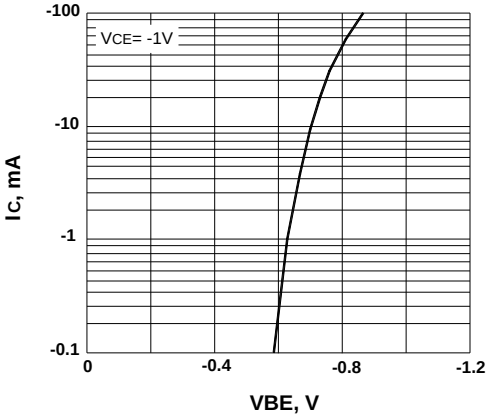
Collector current vs. collector emitter voltage



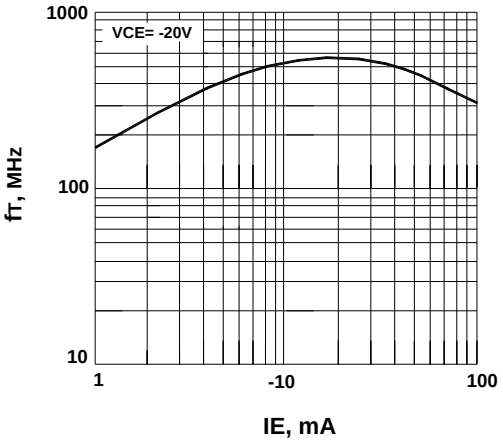
Total power dissipation vs. ambient temperature



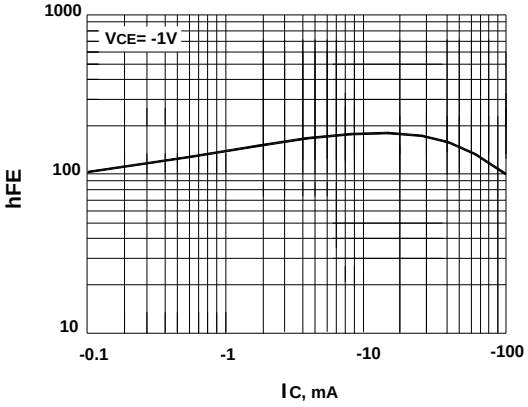
Collector current vs. base emitter voltage



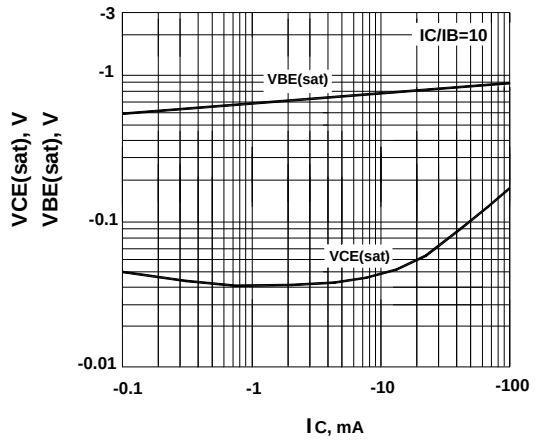
Gain bandwidth product vs. emitter current



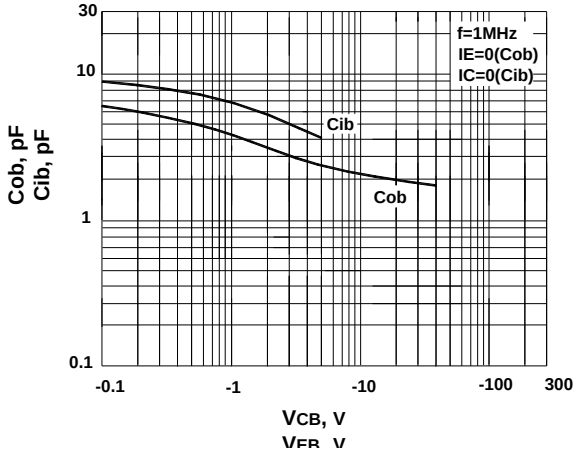
DC current gain vs. collector current



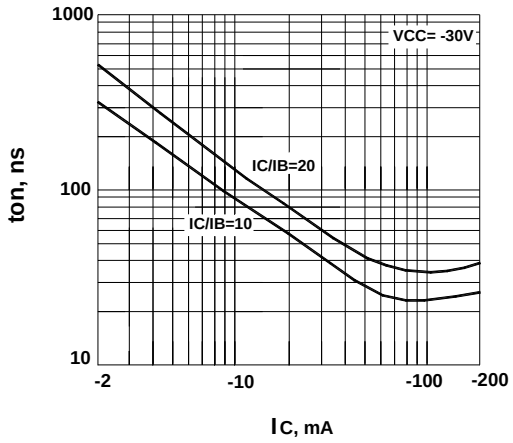
Base and collector saturation voltage vs. collector current



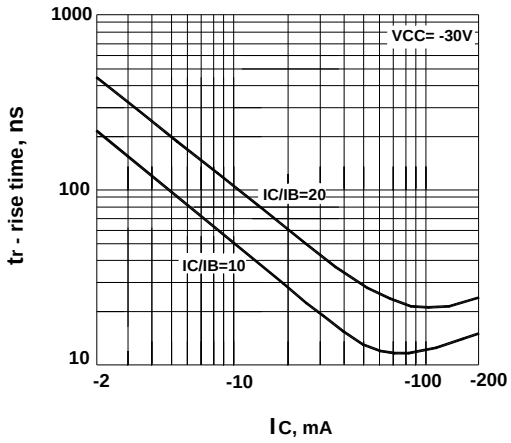
Input and output capacitance vs. reverse voltage



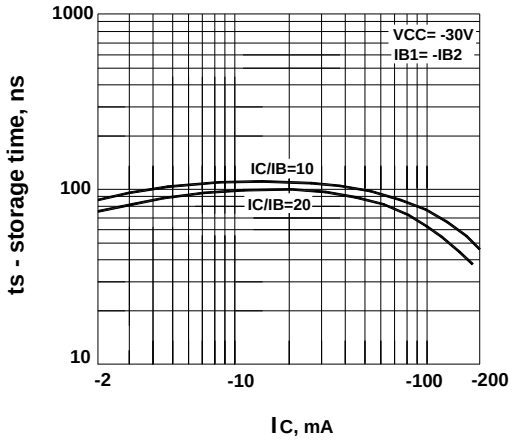
Turn on time vs. collector current



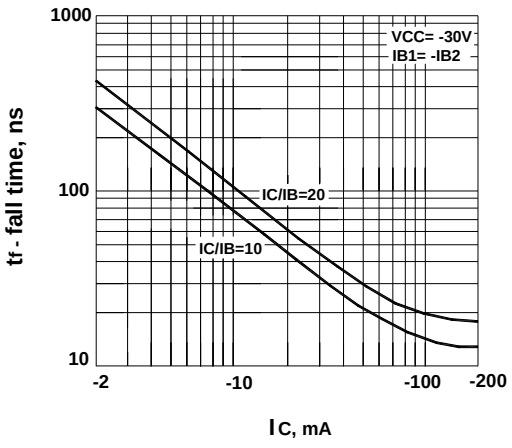
Rise time vs. collector current

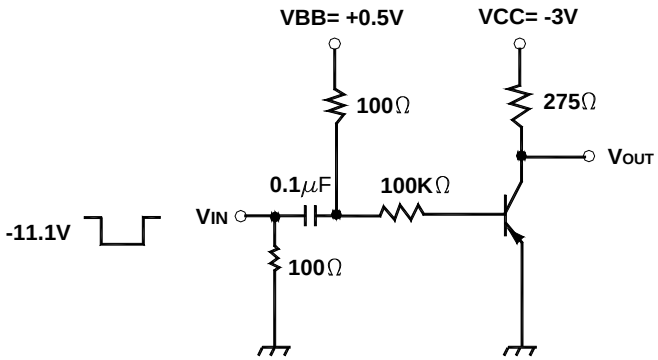


Storage time vs. collector current



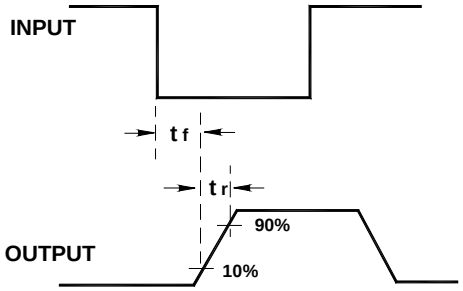
Fall time vs. collector current



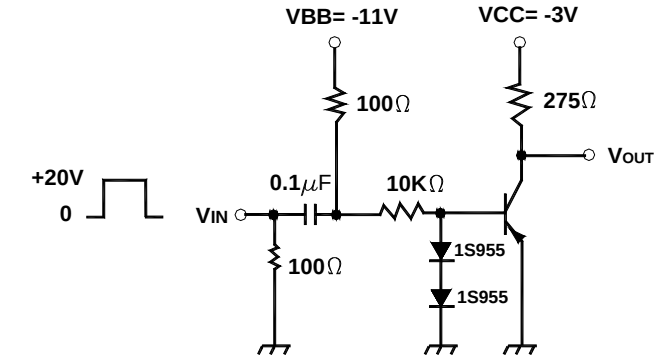


PW∝300ns
tr<1ns
ZIN=50Ω
Duty Cycle=2%

ton SWITCHING

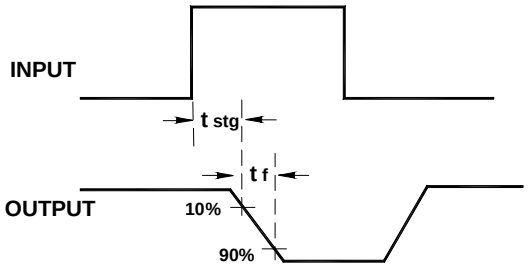


ton = t_f + t_r



PW∝300ns
tr<1ns
Duty Cycle=2%

t_{off} SWITCHING



toff = t_f + t_{stg}