

# 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.



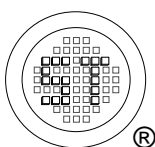
1. Emitter 2. Collector 3. Base  
TO-92 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

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	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE} = 1\text{ V}$ , $-I_C = 100\text{ mA}$ Current Gain Group M L K at $-V_{CE} = 1\text{ V}$ , $-I_C = 1\text{ mA}$	$h_{FE}$	75	-	150	-
	$h_{FE}$	100	-	200	-
	$h_{FE}$	150	-	300	-
	$h_{FE}$	25	100	-	-
Collector Base Cutoff Current at $-V_{CB} = 30\text{ V}$	$-I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter Base Cutoff Current at $-V_{EB} = 3\text{ V}$	$-I_{EBO}$	-	-	0.1	$\mu\text{A}$
Collector Emitter Saturation Voltage at $-I_C = 50\text{ mA}$ , $-I_B = 5\text{ mA}$	$-V_{CE(sat)}$	-	0.1	0.4	V
Base Emitter Saturation Voltage at $-I_C = 50\text{ mA}$ , $-I_B = 5\text{ mA}$	$-V_{BE(sat)}$	-	0.8	0.95	V
Gain Bandwidth Product at $-V_{CE} = 20\text{ V}$ , $I_E = 10\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	200	510	-	MHz
Output Capacitance at $-V_{CB} = 5\text{ V}$ , $f = 1\text{ MHz}$	$C_{OB}$	-	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



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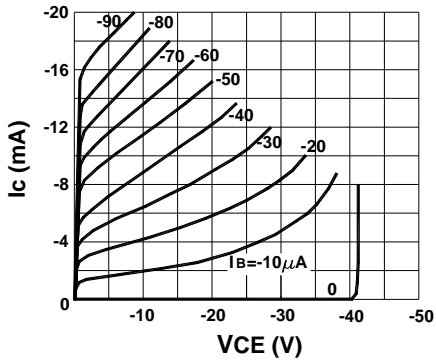


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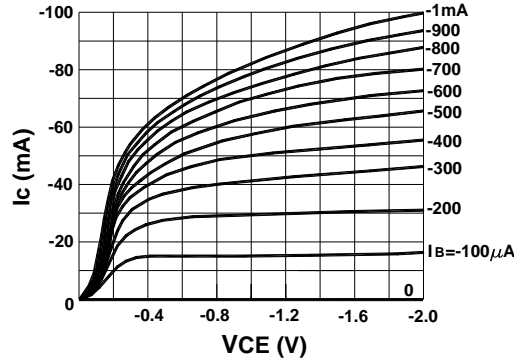


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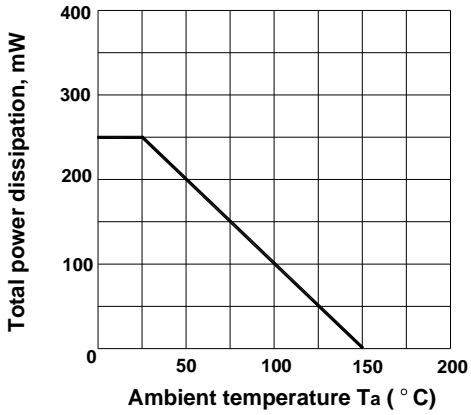
Collector current vs. collector emitter voltage



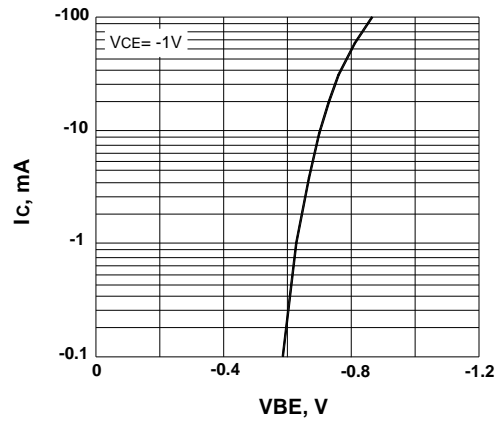
Collector current vs. collector emitter voltage



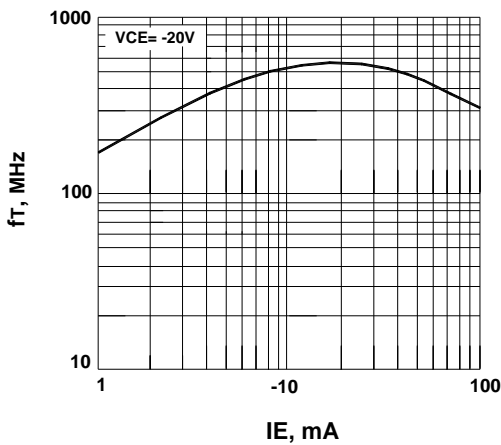
Total power dissipation vs. ambient temperature



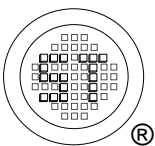
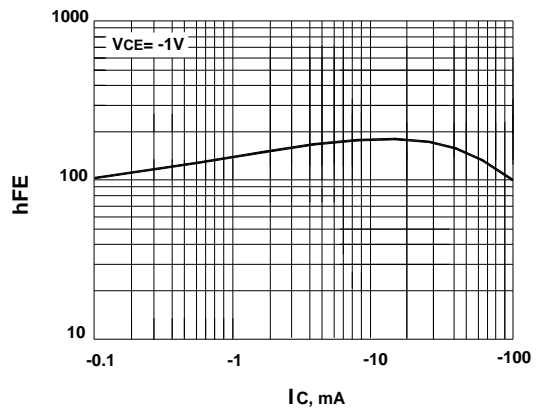
Collector current vs. base emitter voltage



Gain bandwidth product vs. emitter current



DC current gain vs. collector current



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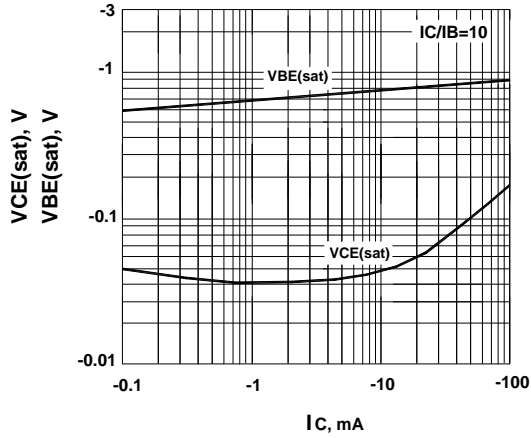
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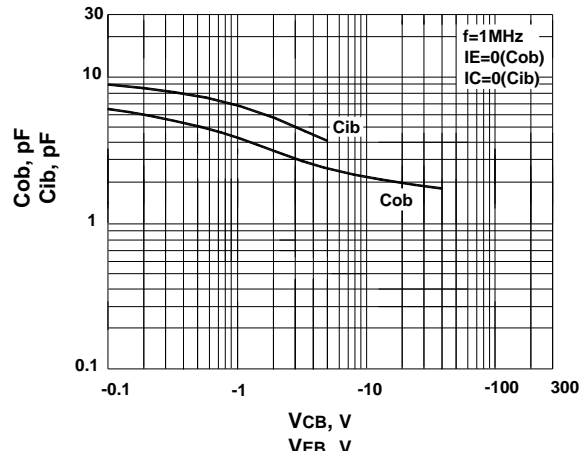
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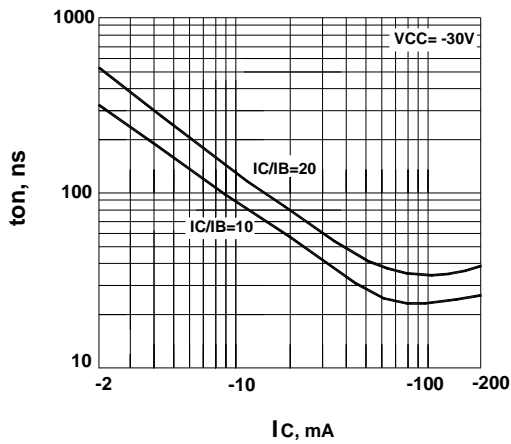
Base and collector saturation voltage vs. collector current



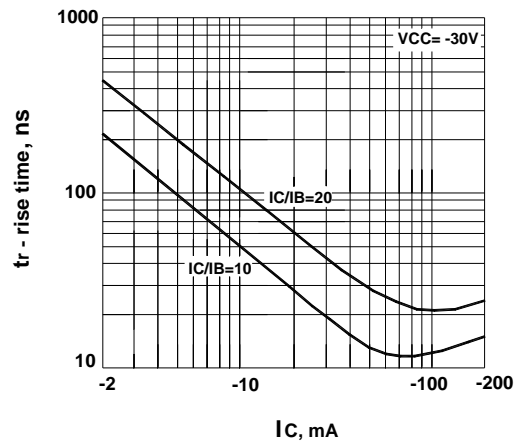
Input and output capacitance vs. reverse voltage



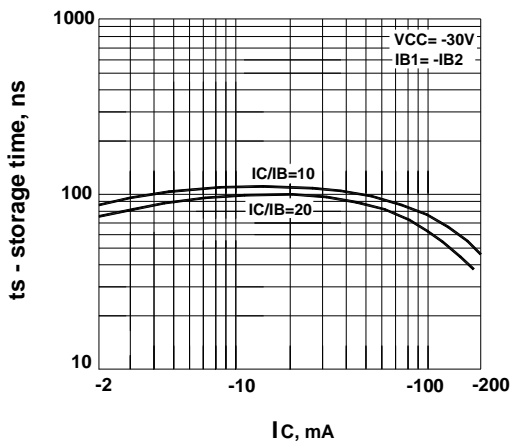
Turn on time vs. collector current



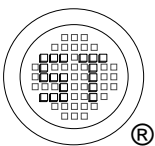
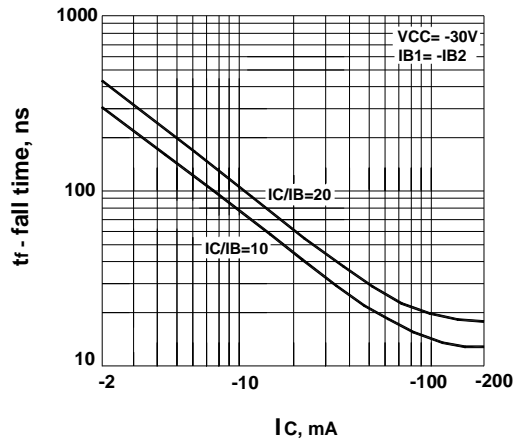
Rise time vs. collector current



Storage time vs. collector current

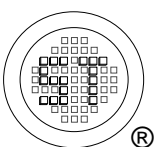
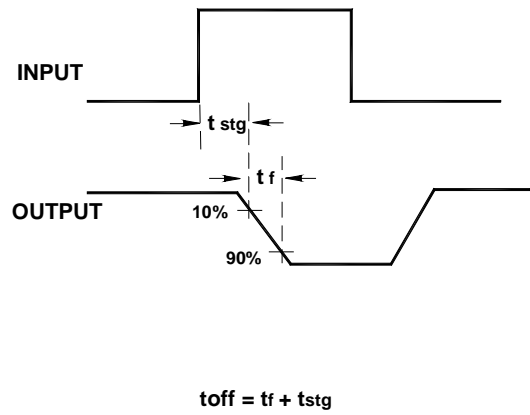
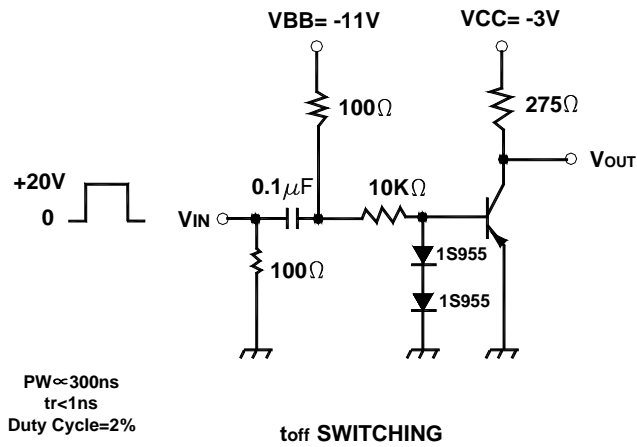
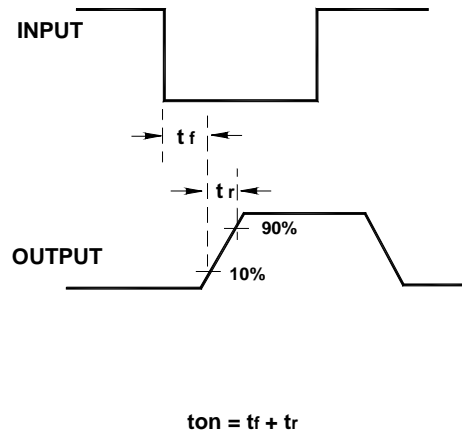
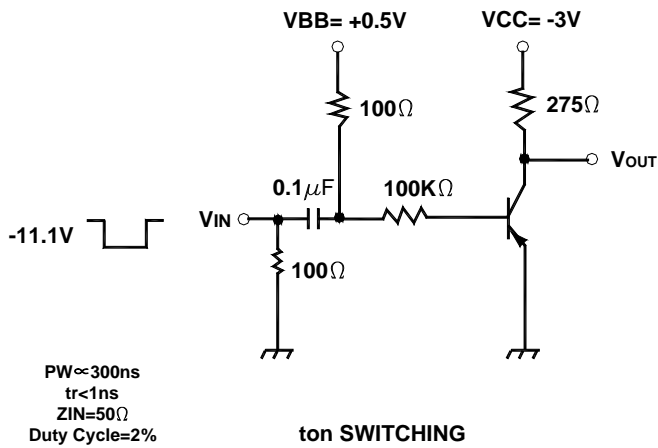


Fall time vs. collector current



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