NPN Silicon Epitaxial Planar Transistor

for switching and amplifier applications. Especially suitable for AF-driver stages and low power output stages.

The transistor is subdivided into three groups, G, H and I, according to its DC current gain. As complementary type the PNP transistor 9012 is recommended.



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

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V _{CEO}	30	V
Emitter Base Voltage	V _{EBO}	5	V
Collector Current	I _C	500	mA
Power Dissipation	P _{tot}	625	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.	Max.	Unit
DC Current Gain at $V_{CE} = 1 \text{ V}$, $I_C = 50 \text{ mA}$ Current Gain Group at $V_{CE} = 1 \text{ V}$, $I_C = 500 \text{ mA}$	G H I	h _{FE} h _{FE} h _{FE}	110 177 250 40	183 250 380	- - - -
Collector Base Cutoff Current at V _{CB} = 35 V		I _{CBO}	-	100	nA
Emitter Base Cutoff Current at $V_{EB} = 5 \text{ V}$		I _{EBO}	-	100	nA
Collector Bae Breakdown Voltage at $I_C = 100 \mu A$		$V_{(BR)CBO}$	40	-	V
Collector Emitter Breakdown Voltage at I _C = 1 mA		$V_{(BR)CEO}$	30	-	V
Emitter Base Breakdown Voltage at I _E = 100 μA		$V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage at $I_C = 500$ mA, $I_B = 50$ mA		V _{CE(sat)}	-	0.6	V
Base Emitter Saturation Voltage at $I_C = 500 \text{ mA}$		$V_{BE(sat)}$	-	1.2	V
Base Emitter Voltage at $V_{CE} = 1 \text{ V}$, $I_C = 100 \text{ mA}$		V_{BE}	-	1	V
Gain Bandwidth Product at $V_{CE} = 6 \text{ V}$, $I_C = 20 \text{ mA}$		f _T	100	-	MHz



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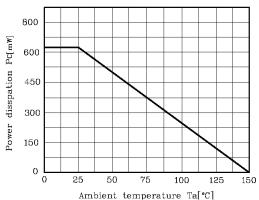


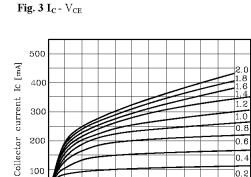






Fig. 1 Ptot- Ta





2

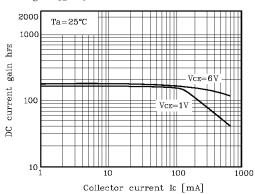
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 ${\tt Collector-Emitter\ voltage\ VCE\ [V]}$

Fig. 5 h_{FE} - $I_{\rm C}$

100

0



IB=0mA

5

Fig. 2 $I_{\rm C}$ - V_{BE}

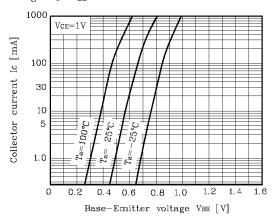
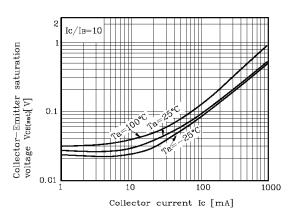


Fig. 4 $V_{\text{CE(SAT)}}$ - I_{C}





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