



TO-92 Plastic-Encapsulate Transistors

2SA821 TRANSISTOR (PNP)

FEATURES

Power dissipation

$$P_{CM} : 0.25 \text{ W (} T_{amb}=25 \text{)}$$

Collector current

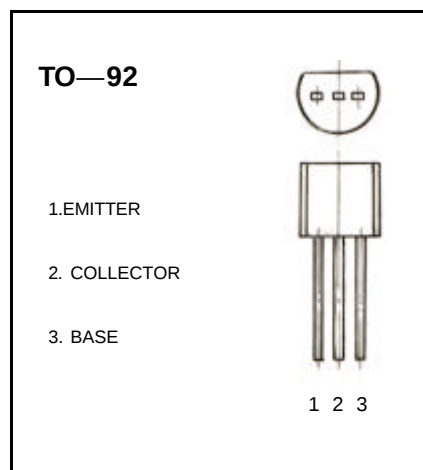
$$I_{CM} : -0.03 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : -210 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg} : -55 \text{ to } +150$$



ELECTRICAL CHARACTERISTICS ($T_{amb}=25$ unless otherwise specified)

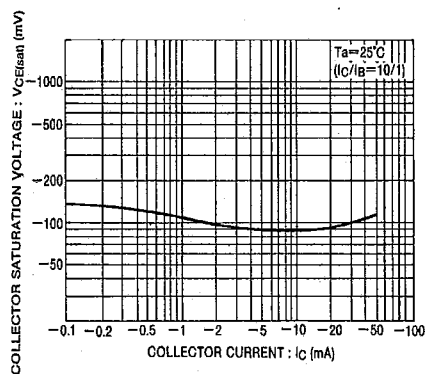
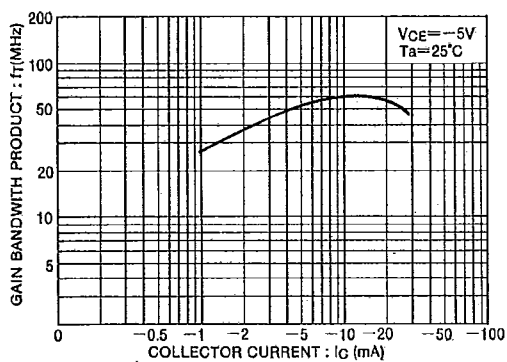
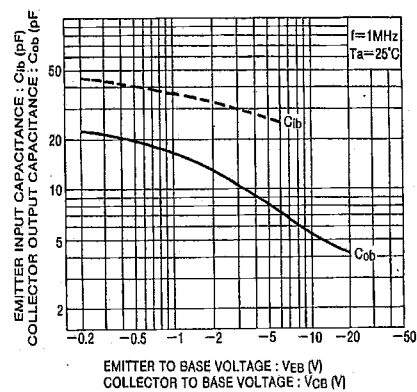
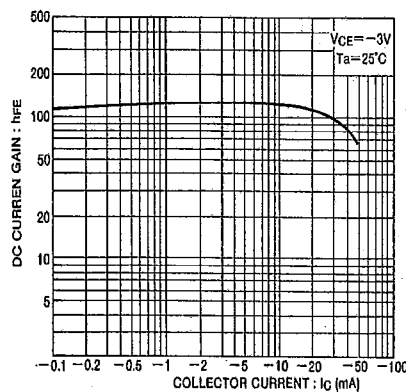
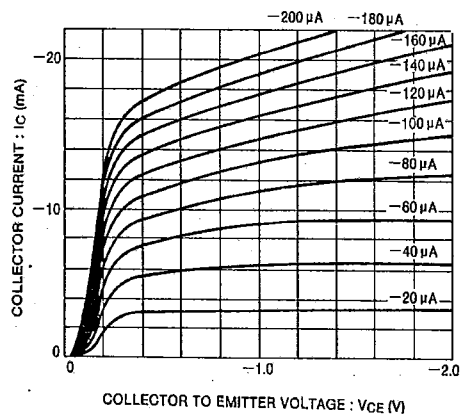
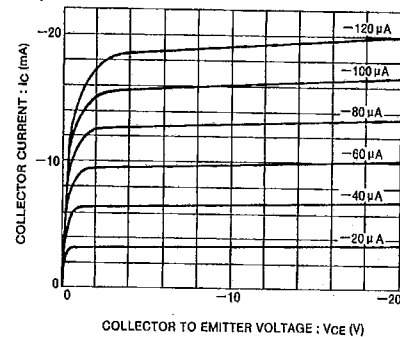
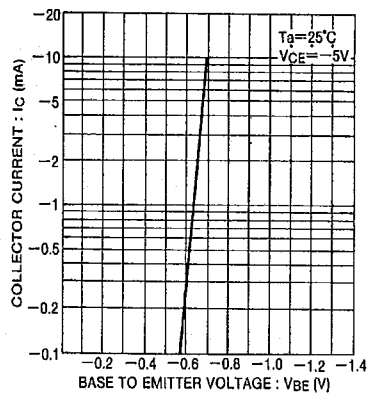
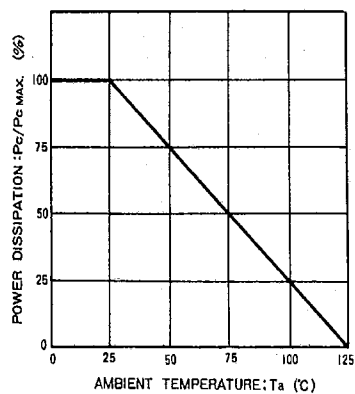
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -50 \mu A, I_E = 0$	-210			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -0.1 \text{ mA}, I_B = 0$	-210			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -50 \mu A, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -150V, I_E = 0$			-1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -4.5 \text{ V}, I_C = 0$			-1	μA
DC current gain	h_{FE}	$V_{CE} = -3 \text{ V}, I_C = -5 \text{ mA}$	56		270	
Collector-emitter saturation voltage	V_{CEsat}	$I_C = -2 \text{ mA}, I_B = -0.2 \text{ mA}$			-0.6	V
Transition frequency	f_T	$V_{CE} = -5 \text{ V}, I_C = -2 \text{ mA}$	30			MHz
Output capacitance	C_{ob}	$V_{CE} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$			12	pF

CLASSIFICATION OF h_{FE}

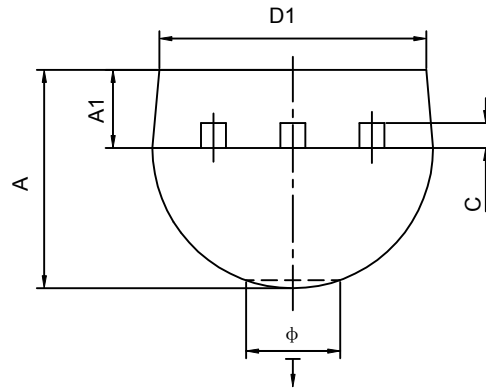
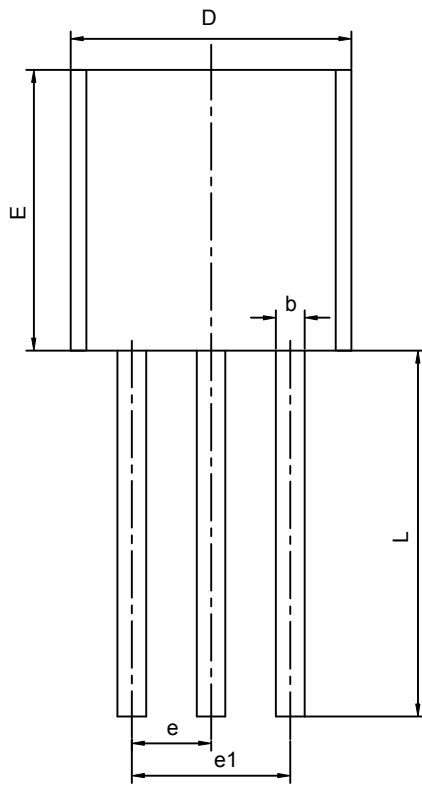
Rank	N	P	Q
Range	56-120	82-180	120-270

Typical Characteristics

2SA821



TO-92 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270TYP		0.050TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Ö		1.600		0.063
↓	0.000	0.380	0.000	0.015