

High-voltage Amplifier Transistor (−210V, −30mA)

2SA821S

●Features

- 1) High breakdown voltage, ($V_{CEr} = -210V$)
- 2) Complements the 2SC1651S.

●Packaging specifications and h_{FE}

Type	2SA821
Package	SPT
h_{FE}	PQ
Code	TP
Basic ordering unit (pieces)	5000

●Absolute maximum ratings ($T_a = 25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−210	V
Collector-emitter voltage	V_{CEr}	−210	V *
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_c	−30	mA
Collector power dissipation	P_c	250	mW
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	−55~+150	$^\circ C$

* $R_{\theta E} = 10k\Omega$

●Electrical characteristics ($T_a = 25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−210	—	—	V	$I_c = -50\mu A$
Collector-emitter breakdown voltage	BV_{CEr}	−210	—	—	V	$I_c = -100\mu A, R_{\theta E} = 10k\Omega$
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	$I_E = -50\mu A$
Collector cutoff current	I_{CBO}	—	—	−1	μA	$V_{CB} = -150V$
Emitter cutoff current	I_{EBO}	—	—	−1	μA	$V_{EB} = -4.5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1	V	$I_c/I_B = -2mA/-0.2mA$
DC current transfer ratio	h_{FE}	56	—	270	—	$V_{CE} = -3V, I_c = -5mA$
Transition frequency	f_t	—	50	—	MHz	$V_{CE} = -5V, I_E = 2mA, f = 30MHz$
Output capacitance	C_{ob}	—	8	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

(94L-183-A35)

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- 2) Complements the 2SA821S.

●Packaging specifications and h_{FE}

Type	2SC1651S
Package	SPT
h_{FE}	PQ
Code	TP
Basic ordering unit (pieces)	5000

●Absolute maximum ratings ($T_a = 25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	210	V
Collector-emitter voltage	V_{CEr}	210	V *
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_c	30	mA
Collector power dissipation	P_c	250	mW
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	−55~+150	$^\circ C$

* $R_{\theta E} = 10k\Omega$

●Electrical characteristics ($T_a = 25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	210	—	—	V	$I_c = 50\mu A$
Collector-emitter breakdown voltage	BV_{CEr}	210	—	—	V	$I_c = 100\mu A, R_{\theta E} = 10k\Omega$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E = 50\mu A$
Collector cutoff current	I_{CBO}	—	—	1	μA	$V_{CB} = 150V$
Emitter cutoff current	I_{EBO}	—	—	1	μA	$V_{EB} = 4.5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1	V	$I_c/I_B = 2mA/0.2mA, f = 30MHz$
DC current transfer ratio	h_{FE}	82	—	270	—	$V_{CE} = 3V, I_c = 5mA$
Transition frequency	f_t	—	60	—	MHz	$V_{CE} = 5V, I_E = -2mA$
Output capacitance	C_{ob}	—	6	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

(94L-519-C35)