

Power Transistor (−20V, −2A)

2SB1427

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = -0.5V$ at $I_C / I_E = -1A / -50mA$.
- 2) Excellent DC current gain characteristics.

●Packaging specifications and hFE

Type	2SB1427
Package	MPT3
hFE	E
Marking	BJ*
Code	T100
Basic ordering unit (pieces)	1000

* Denotes hFE

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−20	V
Collector-emitter voltage	V_{CEO}	−20	V
Emitter-base voltage	V_{EB0}	−6	V
Collector current	I_C	−2	A (DC)
		−3	A (Pulse) *1
Collector power dissipation	P_C	0.5	W *2
		2	
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55~+150	°C

*1 Single pulse, $P_w = 10ms$

*2 When mounted on a 40 x 40 x 0.7 mm ceramic board.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−20	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	−20	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EB0}	−6	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	−0.5	μA	$V_{CB} = -16V$
Emitter cutoff current	I_{EBO}	—	—	−0.5	μA	$V_{EB} = -5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−0.5	V	$I_C/I_E = -1A/-50mA$ *
DC current transfer ratio	hFE	390	—	820	—	$V_{CE}/I_C = -6V/-0.5A$
Transition frequency	f_T	—	90	—	MHz	$V_{CE} = -10V$, $I_E = 10mA$, $f = 30MHz$
Output capacitance	C_{ob}	—	30	—	pF	$V_{CB} = -10V$, $I_E = 0A$, $f = 1MHz$

* Measured using pulse current.

(96-148-B24TJR)

High-gain Amplifier Transistor (25V, 2A)

2SD2153

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = 0.12V$ at $I_C / I_E = 1A / 20mA$
- 2) Excellent DC current gain characteristics.

●Packaging specifications and hFE

Type	2SD2153
Package	MPT3
hFE	UVW
Marking	DN*
Code	T100
Basic ordering unit (pieces)	1000

* Denotes hFE

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	25	V
Emitter-base voltage	V_{EB0}	6	V
Collector current	I_C	2	A (DC)
		3	A (Pulse) *
Collector power dissipation	P_C	0.5	W
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55~+150	°C

* Single pulse, $P_w = 10ms$

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	—	—	V	$I_C = 50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	25	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EB0}	6	—	—	V	$I_E = 50 \mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 20V$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB} = 5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.12	0.5	V	$I_C/I_E = 1A/20mA$ *
DC current transfer ratio	hFE	56	—	2700	—	$V_{CE}/I_C = 6V/0.5A$
Transition frequency	f_T	—	110	—	MHz	$V_{CE} = 10V$, $I_E = -10mA$, $f = 100MHz$
Output capacitance	C_{ob}	—	22	—	pF	$V_{CB} = 10V$, $I_E = 0A$, $f = 1MHz$

* Measured using pulse current.

(96-239-D24TJR)