Power Transistor (−20V, −2A)

2SB1427

●**Features**

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

●**Packaging specifications and h_{FE}**

Type	2SB1427
Package	MPT3
h_{FE}	E
Marking	BJ*
Code	T100
Basic ordering unit (pieces)	1000

* Denotes h_{FE}

●**Absolute maximum ratings (Ta=25℃)**

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

*1 Single pulse, Pw=10ms
*2 When mounted on a 40 x 40 x 0.7 mm ceramic board.

●**Electrical characteristics (Ta=25℃)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−20	—	—	V	I_C=−50 μA
Collector-emitter breakdown voltage	BV_{CEO}	−20	—	—	V	I_C=−1mA
Emitter-base breakdown voltage	BV_{EBO}	−6	—	—	V	I_E=−50 μA
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_B=−1A/−50mA *
DC current transfer ratio	h_{FE}	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	Cob	—	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_B=1A / 20mA
2) Excellent DC current gain characteristics.

●**Packaging specifications and h_{FE}**

Type	2SD2153
Package	MPT3
h_{FE}	UVW
Marking	DN*
Code	T100
Basic ordering unit (pieces)	1000

* Denotes h_{FE}

●**Absolute maximum ratings (Ta=25℃)**

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

* Single pulse, Pw=10ms

●**Electrical characteristics (Ta=25℃)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	25	—	—	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	6	—	—	V	I_E=50 μA
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_B=1A/20mA *
DC current transfer ratio	h_{FE}	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	Cob	—	22	—	pF	V_{CB}=10V , I_E=0A , f=1MHz

* Measured using pulse current.

(96-239-D24TJR)