

Power Transistor (100V, 5A)

2SD1897

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = 0.3V$ at $I_C / I_B = 3A / 0.3A$.
- 2) Excellent h_{FE} current characteristics.
- 3) $P_C = 30W$. ($T_C = 25^\circ C$)

●Packaging specifications and h_{FE}

Type	2SD1897
Package	TO-220FP
h_{FE}	E
Code	—
Basic ordering unit (pieces)	500

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	100	V
Collector-emitter voltage	V_{CEO}	100	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	5	A (DC)
		10	A (Pulse) *
		2	W
Collector power dissipation	P_C	30	W ($T_C = 25^\circ C$)
		150	$^\circ C$
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	-55~+150	$^\circ C$

* Single pulse, $P_w = 100ms$ ●Electrical characteristics ($T_a = 25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	100	—	—	V	$I_C = 50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	100	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E = 50 \mu A$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{CB} = 100V$
Emitter cutoff current	I_{EBO}	—	—	10	μA	$V_{EB} = 5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.3	1.0	V	$I_C / I_B = 3A / 0.3A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	$I_C / I_B = 3A / 0.3A$ *
DC current transfer ratio	h_{FE}	100	—	200	—	$V_{CE} / I_C = 5V / 1A$
Transition frequency	f_T	—	8	—	MHz	$V_{CE} = 5V$, $I_E = -0.5A$, $f = 5MHz$ *
Output capacitance	C_{ob}	—	100	—	pF	$V_{CB} = 10V$, $I_E = 0A$, $f = 1MHz$

* Measured using pulse current.

(96-768-D91)

Power Transistor (15V, 0.5A)

2SD1757K

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = 8mV$ at $I_C / I_B = 10mA / 1mA$.
- 2) Optimal for muting.

●Packaging specifications and h_{FE}

Type	2SD1757K
Package	SMT3
h_{FE}	QRS
Marking	AA *
Code	T146
Basic ordering unit (pieces)	3000

* Denotes h_{FE} ●Absolute maximum ratings ($T_a = 25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	15	V
Emitter-base voltage	V_{EBO}	6.5	V
Collector current	I_C	0.5	A
Collector power dissipation	P_C	0.2	W
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	-55~+150	$^\circ C$

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

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}	15	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EBO}	6.5	—	—	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	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.1	0.4	V	$I_C / I_B = 500mA / 50mA$
DC current transfer ratio	h_{FE}	120	—	560	—	$V_{CE} / I_C = 3V / 100mA$
Transition frequency	f_T	—	150	—	MHz	$V_{CE} = 5V$, $I_E = -50mA$, $f = 100MHz$
Output capacitance	C_{ob}	—	15	—	pF	$V_{CB} = 10V$, $I_E = 0A$, $f = 1MHz$