

# 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	$\mu A$	$V_{CB} = 100V$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu A$	$V_{EB} = 5V$
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	$\mu A$	$V_{CB} = 20V$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu A$	$V_{EB} = 4V$
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	$V_{CB} = 10V$ , $I_E = 0A$ , $f = 1MHz$

(94S-314-D95)