

# High-voltage Switching Transistor (Power Supply)

## (120V, 7A)

2SC4849

### ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)} = 0.17$  at  $I_C / I_B = 5A / 0.5A$ .
- 2) High switching speed, typically  $t_f = 0.17 \mu s$  at  $I_C = 5A$ .
- 3) Wide SOA. (safe operating area)

### ●Packaging specifications and hFE

Type	2SC4849
Package	TO-220FP
hFE	E
Code	—
Basic ordering unit (pieces)	500

### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	250	V
Collector-emitter voltage	$V_{CEO}$	120	V
Emitter-base voltage	$V_{EBO}$	12	V
Collector current	$I_C$	7	A
		15	A ( $t = 100ms$ )
Collector power dissipation	$P_C$	2	W
		30	W ( $T_c = 25^\circ C$ )
Junction temperature	$T_J$	150	°C
Storage temperature	$T_{stg}$	-55~+150	°C

### ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	$V_{CEX(SUS)}$	125	—	—	V	$I_{CP} = 8A, I_{B1} = -I_{B2} = 0.5A, I_C = 5A, L = 200 \mu H$ clamped
Collector cutoff current	$I_{CBO}$	—	—	10	$\mu A$	$V_{CB} = 100V$
Collector cutoff current	$I_{EBO}$	—	—	10	$\mu A$	$V_{EB} = 12V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.6	V	$I_C / I_B = 5A / 0.5A$
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.2	V	$I_C / I_B = 5A / 0.5A$
DC current transfer ratio	hFE	100	—	200	—	$V_{CE} / I_C = 5V / 3A$
Transition frequency	$f_T$	—	20	—	MHz	$V_{CE} = 10V, I_E = -0.5A$
Output capacitance	$C_{ob}$	—	150	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$
Turn-on time	$t_{on}$	—	—	0.5	$\mu s$	$I_C = 5A, R_i = 10 \Omega$
Storage time	$t_{stg}$	—	—	2.5	$\mu s$	$I_{B1} = -I_{B2} = 0.5A$
Fall time	$t_f$	—	—	0.5	$\mu s$	$V_{CC} = 50V$
Collector cutoff current	$I_{CEO}$	—	—	2	mA	$V_{CE} = 100V, T_a = 125^\circ C$

(94L-712-C342)

# Medium Power Transistor (Chroma Output)

## (300V, 0.1A)

2SC5147

### ●Features

- 1) High breakdown voltage. ( $BV_{CEO} = 300V$ )
- 2) Low collector output capacitance. (Typ. 3pF at  $V_{CB} = 30V$ )
- 3) Wide SOA. (safe operating area)
- 4) Ideal for color TV chroma output and amplification of video signals.

### ●Packaging specifications and hFE

Type	2SC5147
Package	TO-220FN
hFE	DE
Code	—
Basic ordering unit (pieces)	500

### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	300	V
Collector-emitter voltage	$V_{CEO}$	300	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	100	mA (DC)
Collector power dissipation	$P_C$	2	W
		10	W ( $T_c = 25^\circ C$ )
Junction temperature	$T_J$	150	°C
Storage temperature	$T_{stg}$	-55~+150	°C

### ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	300	—	—	V	$I_C = 50 \mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	300	—	—	V	$I_C = 100 \mu A$
Emitter-base breakdown voltage	$BV_{EBO}$	5	—	—	V	$I_E = 50 \mu A$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu A$	$V_{CB} = 200V$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu A$	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.2	1	V	$I_C / I_B = 50mA / 5mA$ *
DC current transfer ratio	hFE	60	—	200	—	$V_{CE} / I_C = 10V / 10mA$
Transition frequency	$f_T$	50	100	—	MHz	$V_{CE} = 30V, I_E = -20mA, f = 30MHz$
Output capacitance	$C_{ob}$	—	3	—	pF	$V_{CB} = 30V, I_E = 0A, f = 1MHz$

\* Measured using pulse current.

(96-736-C358)