

# For audio temperature compensation circuits (20V, 0.1A)

## 2SC4137

### ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)} = 0.2V$  at  $I_C / I_E = 50mA / 5mA$ .
- 2) High DC current gain.

### ●Packaging specifications and $h_{FE}$

Type	2SC4137
Package	TO-126FP
$h_{FE}$	VW
Code	—
Basic ordering unit (pieces)	500

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	25	V
Collector-emitter voltage	$V_{CEO}$	20	V
Emitter-base voltage	$V_{EBO}$	6	V
Collector current	$I_C$	100	mA (DC)
		200	mA (Pulse) *
Collector power dissipation	$P_C$	1	W
		4	W ( $T_C = 25^\circ C$ )
Junction temperature	$T_J$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55~+150	$^\circ C$

\* Single pulse,  $P_w = 10ms$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	25	—	—	V	$I_C = 10 \mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	20	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	6	—	—	V	$I_E = 10 \mu A$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu A$	$V_{CB} = 15V$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu A$	$V_{EB} = 6V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.2	0.7	V	$I_C / I_E = 50mA / 5mA$
DC current transfer ratio	$h_{FE}$	820	—	2700	—	$V_{CE} / I_C = 3V / 10mA$
Transition frequency	$f_T$	—	400	—	MHz	$V_{CE} = 10V, I_E = -10mA, f = 100MHz$
Output capacitance	$C_{ob}$	—	3	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

(96-718-C110)

# High-frequency Amplifier Transistor, RF Switching (60V, 50mA)

## 2SC4774 / 2SC4713K

### ●Features

- 1) Very low output-on resistance ( $R_{on}$ ).
- 2) Low capacitance.

### ●Packaging specifications and $h_{FE}$

Type	2SC4774	2SC4713K
Package	UMT3	SMT3
$h_{FE}$	S	S
Marking	BM*	BM*
Code	T106	T146
Basic ordering unit (pieces)	3000	3000

\* Denotes  $h_{FE}$

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	12	V
Collector-emitter voltage	$V_{CEO}$	6	V
Emitter-base voltage	$V_{EBO}$	3	V
Collector current	$I_C$	50	mA
Collector power dissipation	$P_C$	0.15	W
		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	$BV_{CBO}$	12	—	—	V	$I_C = 10 \mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	6	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	3	—	—	V	$I_E = 10 \mu A$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu A$	$V_{CB} = 10V$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu A$	$V_{EB} = 2V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.3	—	V	$I_C / I_E = 10mA / 1mA$
DC current transfer ratio	$h_{FE}$	270	—	560	—	$V_{CE} / I_C = 10V / 10mA$
Transition frequency	$f_T$	300	800	—	MHz	$V_{CE} = 5V, I_C = 10mA$
Output capacitance	$C_{ob}$	—	1	1.7	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$
Output-on resistance	$R_{on}$	—	2	—	$\Omega$	$I_a = 3mA, v_i = 100mV_{rms}, f = 500KHz$

(96-183-C115)