TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC4116

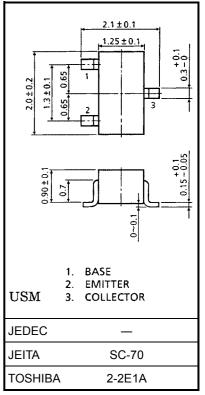
Audio Frequency General Purpose Amplifier Applications

Unit: mm

- High voltage and high current: $V_{CEO} = 50 \text{ V}$, $I_C = 150 \text{ mA}$ (max)
- Excellent hFE linearity: hFE (IC = 0.1 mA)/hFE (IC = 2 mA) = 0.95 (typ.)
- High hFE: hFE = 70~700
- Low noise: NF = 1dB (typ.), 10dB (max)
- Complementary to 2SA1586
- Small package

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V _{CBO}	60	V
Collector-emitter voltage	V _{CEO}	50	V
Emitter-base voltage	V _{EBO}	5	V
Collector current	Ι _C	150	mA
Base current	Ι _Β	30	mA
Collector power dissipation	P _C	100	mW
Junction temperature	Tj	125	°C
Storage temperature range	T _{stg}	-55~125	°C



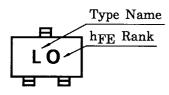
Weight: 0.006 g (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I _{CBO}	$V_{CB} = 60 V, I_E = 0$	_		0.1	μA
Emitter cut-off current	I _{EBO}	$V_{EB} = 5 V, I_{C} = 0$		—	0.1	μA
DC current gain (Note)	h _{FE} (Note)	$V_{CE} = 6 \text{ V}, \text{ I}_{C} = 2 \text{ mA}$	70	_	700	
Collector-emitter saturation voltage	V _{CE (sat)}	$I_{C} = 100 \text{ mA}, I_{B} = 10 \text{ mA}$	_	0.1	0.25	V
Transition frequency	f _T	$V_{CE} = 10 \text{ V}, \text{ I}_{C} = 1 \text{ mA}$	80	—	_	MHz
Collector output capacitance	C _{ob}	$V_{CB} = 10 \text{ V}, \text{ I}_{E} = 0, \text{ f} = 1 \text{ MHz}$		2.0	3.5	pF
Noise figure	NF	V_{CE} = 6 V, I_C = 0.1 mA, f = 1 kHz, R_g = 10 k $\Omega,$		1.0	10	dB

Note: hFE classification O (O): 70~140, Y (Y): 120~240, GR (G): 200~400, BL (L): 350~700, () marking symbol

Marking



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30

COMMON EMITTER

 $I_{C}/I_{B} = 10$

30

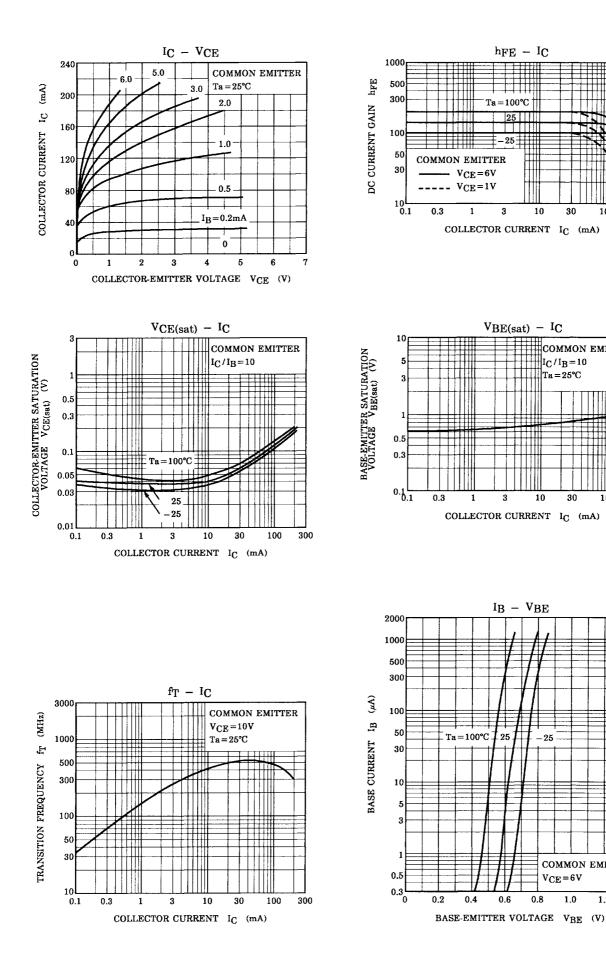
 $Ta = 25^{\circ}C$

100

300

300

100



1.4

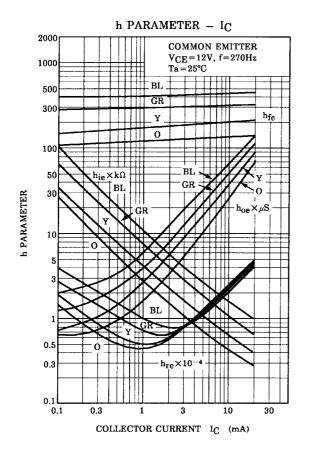
COMMON EMITTER

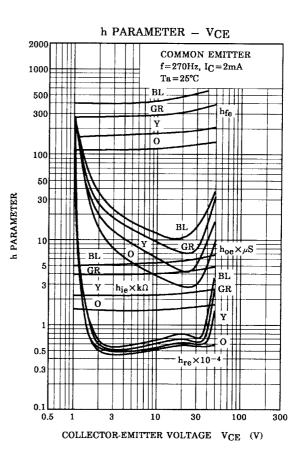
1.2

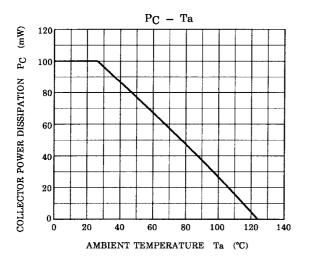
 $V_{CE} = 6V$

1.0

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