

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (MONOLITHIC DUAL TYPE)

2SC3381

LOW NOISE AUDIO AMPLIFIER APPLICATIONS

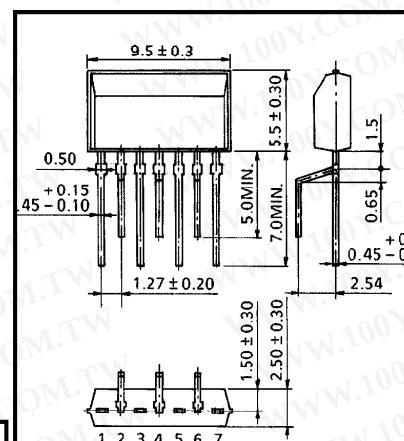
Unit in mm

RECOMMENDED FOR CASCODE, CURRENT MIRROR CIRCUIT
 APPLICATIONS OF THE FIRST STAGES OF PRE, MAIN AMPLIFIERS

- 1 Chip Dual Type.
- Good Pair Characteristics.
- Low Noise : $NF=3dB$ (Max.), ($V_{CE}=6V$, $I_C=0.1mA$,
 $R_G=10k\Omega$, $f=1kHz$)
- High Breakdown Voltage : $V_{CEO}=80V$ (Min.)
- Complementary to 2SA1349.

MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA
Base Current	I_B	20	mA
Collector Power Dissipation	P_C	200×2	mW
Junction Temperature	T_j	125	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 125$	$^\circ C$



1. BASE 1
 2. COLLECTOR 1
 3. EMITTER 1
 4. SUBSTRATE
 5. EMITTER 2
 6. COLLECTOR 2
 7. BASE 2
- (Use the substrate lead with open)

JEDEC

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EIAJ

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TOSHIBA 2-10M1B

Weight : 0.37g

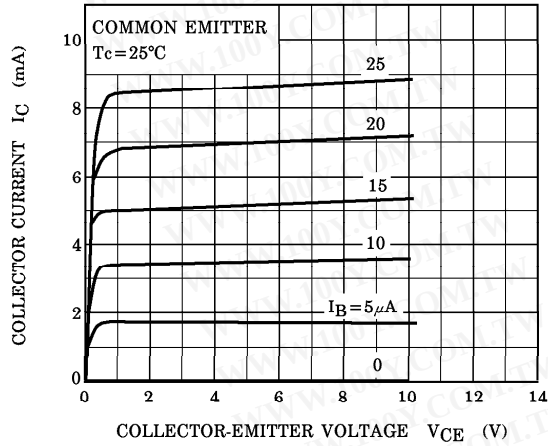
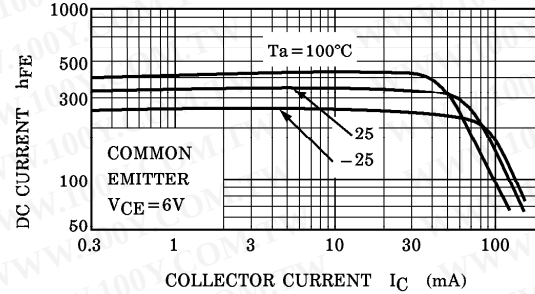
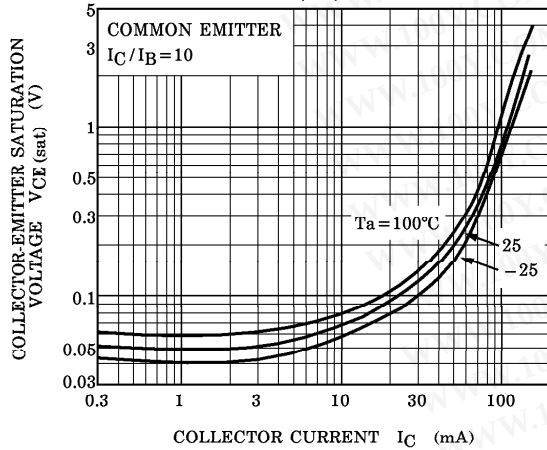
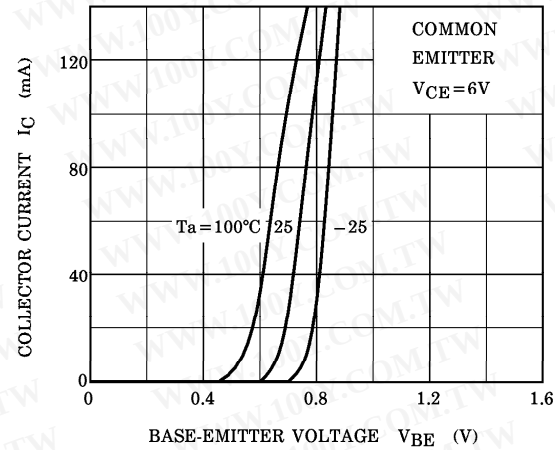
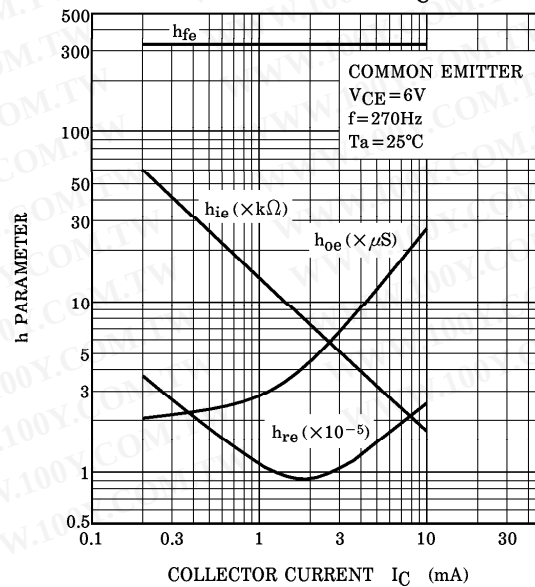
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=80V$, $I_E=0$	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=5V$, $I_C=0$	—	—	0.1	μA
DC Current Gain	h_{FE} (Note)	$V_{CE}=6V$, $I_C=2mA$	200	—	700	
DC Current Gain Ratio	$h_{FE}(S)/h_{FE}(L)$	$V_{CE}=6V$, $I_C=2mA$	0.9	—	1.0	
Collector-Emitter Saturation Voltage	$V_{CE}(sat)$	$I_C=10mA$, $I_B=1mA$	—	0.07	0.3	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=6V$, $I_C=2mA$	—	0.63	—	V
Differential Base-Emitter Voltage	$ V_{BE1}-V_{BE2} $	$V_{CE}=6V$, $I_C=2mA$	0	—	10	mV
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$, $I_E=0$, $f=1MHz$	—	3.6	—	pF
Noise Figure	NF	$V_{CE}=6V$, $I_C=0.1mA$, $R_G=10k\Omega$, $f=1kHz$	0	—	3	dB

Note : h_{FE} Classification GR : 200~400, BL : 350~700

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$I_C - V_{CE}$  $h_{FE} - I_C$  $V_{CE(sat)} - I_C$  $I_C - V_{BE}$  h PARAMETER - I_C  $C_{ob} - V_{CB}$ 