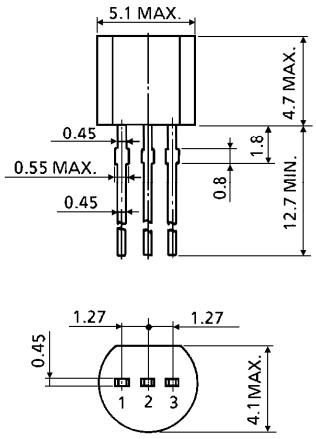
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1015Ⓛ

AUDIO FREQUENCY AMPLIFIER APPLICATIONS
LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

- High Voltage and High Current
  : $V_{CEO} = -50V$ (Min.), $I_C = -150mA$ (Max.)
- Excellent h_{FE} Linearity
  : h_{FE} (2) = 80 (Typ.) at $V_{CE} = -6V$, $I_C = -150mA$
  : h_{FE} ($I_C = -0.1mA$) / h_{FE} ($I_C = -2mA$) = 0.95 (Typ.)
- Low Noise : NF = 0.2dB (Typ.) (f = 1kHz)
- Complementary to 2SC1815Ⓛ



1. EMITTER
2. COLLECTOR
3. BASE

JEDEC	TC-92
EIAJ	SC-43
TOSHIBA	2-5F1B

Weight : 0.21g

MAXIMUM RATINGS (Ta = 25°C)

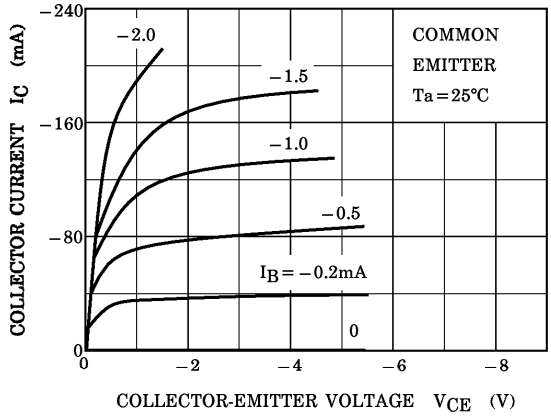
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	−50	V
Collector-Emitter Voltage	V_{CEO}	−50	V
Emitter-Base Voltage	V_{EBO}	−5	V
Collector Current	I_C	−150	mA
Base Current	I_B	−50	mA
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

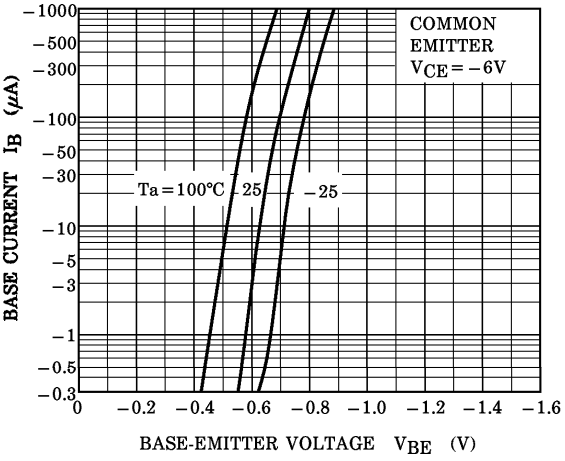
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = -50V$, $I_E = 0$	—	—	−0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5V$, $I_C = 0$	—	—	−0.1	μA
DC Current Gain	h_{FE} (1) (Note)	$V_{CE} = -6V$, $I_C = -2mA$	70	—	400	
	h_{FE} (2)	$V_{CE} = -6V$, $I_C = -150mA$	25	80	—	
Collector-Emitter Saturation Voltage	$V_{CE\ (sat)}$	$I_C = -100mA$, $I_B = -10mA$	—	−0.1	−0.3	V
Base-Emitter Saturation Voltage	$V_{BE\ (sat)}$	$I_C = -100mA$, $I_B = -10mA$	—	—	−1.1	V
Transition Frequency	f_T	$V_{CE} = -10V$, $I_C = -1mA$	80	—	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10V$, $I_E = 0$, f = 1MHz	—	4	7	pF
Base Intrinsic Resistance	$r_{bb'}$	$V_{CB} = -10V$, $I_E = 1mA$, f = 30MHz	—	30	—	Ω
Noise Figure	NF (1)	$V_{CE} = -6V$, $I_C = -0.1mA$, f = 100Hz, $R_G = 10k\Omega$	—	0.5	6	dB
	NF (2)	$V_{CE} = -6V$, $I_C = -0.1mA$, f = 1kHz, $R_G = 10k\Omega$	—	0.2	3	

Note : $h_{FE\ (1)}$ Classification 0 : 70~140, Y : 120~240, GR : 200~400

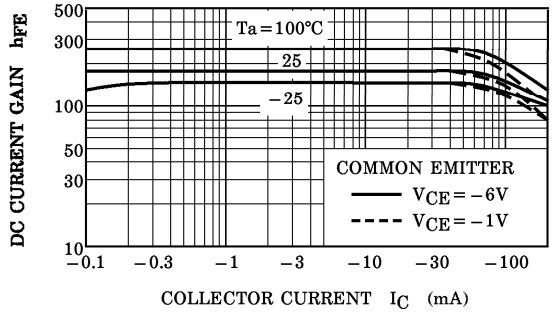
$I_C - V_{CE}$



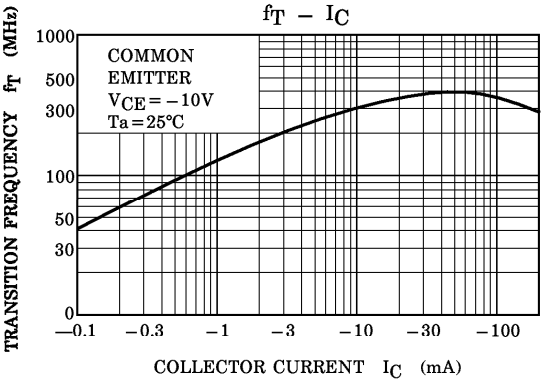
$I_B - V_{BE}$



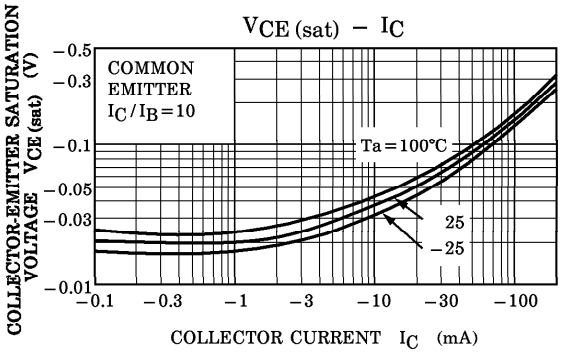
$h_{FE} - I_C$



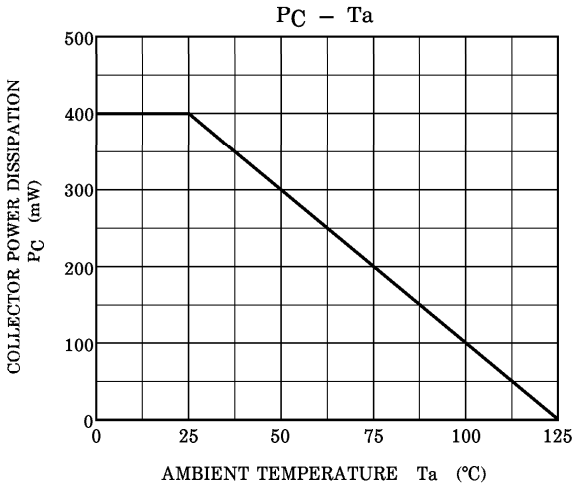
$f_T - I_C$



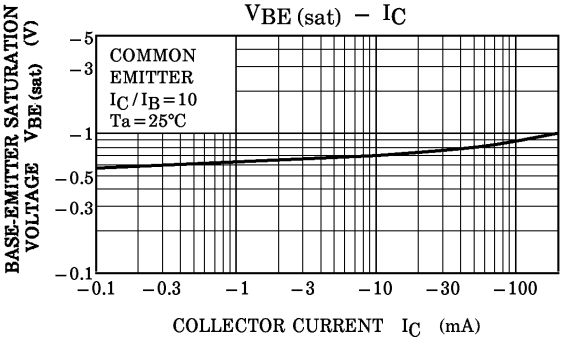
$V_{CE\,(sat)} - I_C$



$P_C - Ta$



$V_{BE\,(sat)} - I_C$



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