SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

TBC549
TBC550

PRIMARILY INTENDED FOR LOW NOISE STAGE OF AUDIO AMPLIFIERS.

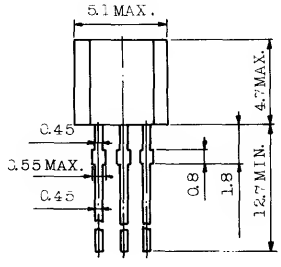
FEATURES:

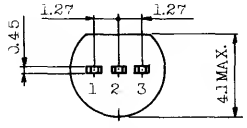
. Low Noise : 4dB Max. (TBC549)
3dB Max. (TBC550)

. High V_{CEO} : 30V (TBC549)
45V (TBC550)

. High h_{FE} : 200 ~ 800

Unit in mm





1. COLLECTOR
2. BASE
3. EMITTER

JEDEC	TO-92
EIAJ	SC-43
TOSHIBA	2-5F1G

Weight : 0.21g

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Breakdown Voltage	TBC549	$V_{(BR)CBO}$	30	V
	TBC550		50	
Collector-Emitter Breakdown Voltage	TBC549	$V_{(BR)CEO}$	30	V
	TBC550		45	
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	5	V
Collector Current	DC	I_C	100	mA
	Peak	I_{CP}	200	
Base Current (Peak)		I_{BP}	200	mA
Collector Power Dissipation		P_C	500	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-65 ~ 150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=30V, I_E=0	-	-	15	nA
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	1	μA
Collector-Emitter Breakdown Voltage	TBC549	$V_{(BR)CEO}$	I_C=1mA, I_B=0	45	-	-	V
	TBC550			30	-	-	
DC Current Gain	TBC549-B TBC550-B	h_{FE}	V_{CE}=5V, I_C=2mA	200	-	450	
	TBC549-C TBC550-C			420	-	800	
Small Signal Current Gain		h_{fe}	V_{CE}=5V, I_C=2mA, f=1kHz	240	-	900	
Base-Emitter Voltage		V_{BE}	V_{CE}=5V, I_C=2mA	580	660	700	mV
			V_{CE}=5V, I_C=10mA	-	-	770	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=10mA, I_B=0.5mA	-	-	250	mV
			I_C=100mA, I_B=5mA	-	-	600	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=10mA, I_B=0.5mA	-	720	-	mV
			I_C=100mA, I_B=5mA	-	900	-	
Knee Voltage		V_{CEK}	I_C=10mA, I_B=Value for which I_C=11mA, at V_{CE}=1V	-	400	600	mV
Transition Frequency		f_T	V_{CE}=5V, I_C=10mA	-	300	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=10V, f=1MHz	-	3.5	4.5	pF
Noise Figure	TBC549	NF	V_{CE}=5V, I_C=0.2mA, R_g=2kΩ, f=30Hz ~ 15kHz	-	1.4	4	dB
	TBC550			-	1.4	3	
Noise Figure	TBC549	NF	V_{CE}=5V, I_C=0.2mA R_g=2kΩ, f=1kHz	-	1	4	dB
	TBC550			-	1	4	
Equivalent Noise Voltage	TBC550	V_n	V_{CE}=5V, I_C=0.2mA R_g=2kΩ, f=10 ~ 50Hz	-	-	0.135	μV