PRIMARILY INTENDED FOR USE IN DRIVER STAGE OF AUDIO AMPLIFIERS.

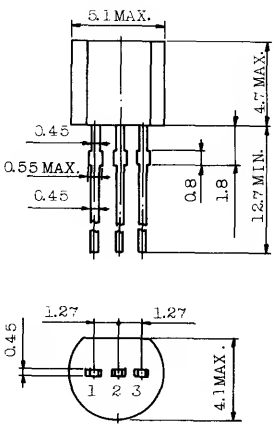
THE TBC559 AND TBC560 IS LOW NOISE TYPE FOR INPUT STAGE OF AUDIO AMPLIFIERS.

FEATURES:

. High V_{CEO} : -45V (TBC560)
-25V (TBC559)

. High h_{FE} : 125 ~ 475

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	TBC559	$V_{(BR)CBO}$	-30	V
	TBC560		-50	
Collector-Emitter Breakdown Voltage	TBC559	$V_{(BR)CEO}$	-25	V
	TBC560		-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 ($Ta=25^{o}C$)

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	TBC559	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-30	-	-	V
	TBC560			-45	-	-	
DC Current Gain		h_{FE} (Note)	V_{CE}=-5V, I_C=-2mA	125	-	475	
Small Signal Current Gain		h_{fe}	V_{CE}=-5V, I_C=-2mA f=1kHz	130	-	500	
Base-Emitter Voltage		V_{BE}	V_{CE}=-5V, I_C=-2mA	-600	-650	-750	V
			V_{CE}=-5V, I_C=-10mA	-	-	-820	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=-10mA, I_B=-0.5mA	-	-	-300	mV
			I_C=-100mA, I_B=-5mA	-	-	-650	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=-10mA, I_B=-0.5mA	-	-700	-	mV
			I_C=-100mA, I_B=-5mA	-	-850	-	
Knee Voltage		V_{CEK}	I_C=-10mA, I_B=Value for Which I_C=-11mA, at V_{CE}=-1V	-	-250	-600	mV
Transition Frequency		f_T	V_{CE}=-5V, I_C=-10mA	-	300	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=-10V, f=1MHz	-	4.5	-	pF
Noise Figure	TBC559	NF	V_{CE}=-5V, I_C=-0.2mA R_g=2kΩ, f=1kHz	-	1	4	dB
	TBC560			-	1	4	
	TBC559		V_{CE}=-5V, I_C=-0.2mA R_g=2kΩ, f=30Hz ~15kHz	-	1.2	4	
	TBC560			-	1.2	2	

Note: h_{FE} Classification 559-A , 560-A : 125 ∿ 250
559-B , 560-B : 220 ∿ 475