

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# 2SC2713

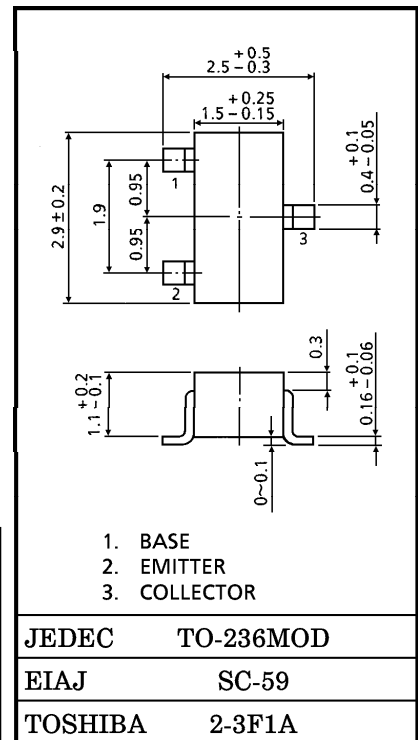
AUDIO FREQUENCY GENERAL PURPOSE AMPLIFIER APPLICATIONS

Unit in mm

- High Voltage :  $V_{CEO} = 120V$
- Excellent  $h_{FE}$  Linearity  
:  $h_{FE}(I_C = 0.1mA) / h_{FE}(I_C = 2mA) = 0.95$  (Typ.)
- High  $h_{FE}$  :  $h_{FE} = 200 \sim 700$
- Low Noise :  $NF = 1dB$  (Typ.),  $10dB$  (Max.)
- Complementary to 2SA1163
- Small Package

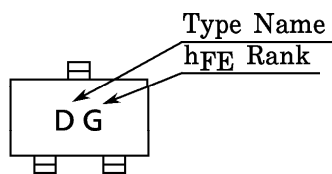
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	120	V
Collector-Emitter Voltage	$V_{CEO}$	120	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	100	mA
Base Current	$I_B$	20	mA
Collector Power Dissipation	$P_C$	150	mW
Junction Temperature	$T_j$	125	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~125	$^\circ C$



Weight : 0.012g

MARKING



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## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 120V, I_E = 0$	—	—	0.1	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$	—	—	0.1	$\mu A$
DC Current Gain	$h_{FE}$ (Note)	$V_{CE} = 6V, I_C = 2mA$	200	—	700	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 1mA$	—	—	0.3	V
Transition Frequency	$f_T$	$V_{CE} = 6V, I_C = 1mA$	—	100	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	3.0	—	pF
Noise Figure	NF	$V_{CE} = 6V, I_C = 0.1mA$ $f = 1kHz, R_G = 10k\Omega$	—	1.0	10	dB

(Note) :  $h_{FE}$  Classification    GR (G) : 200~400,    BL (L) : 350~700

