Ultra-Low Noise PNP Expitaxial Transistor

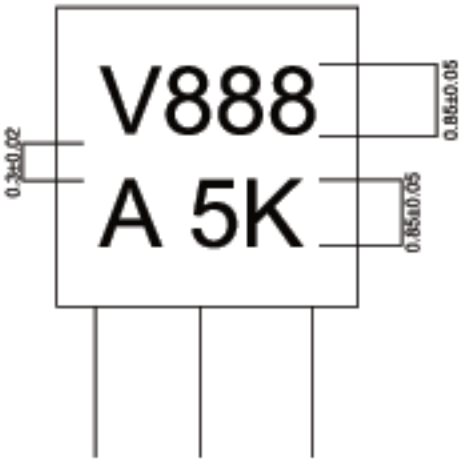
2SV888

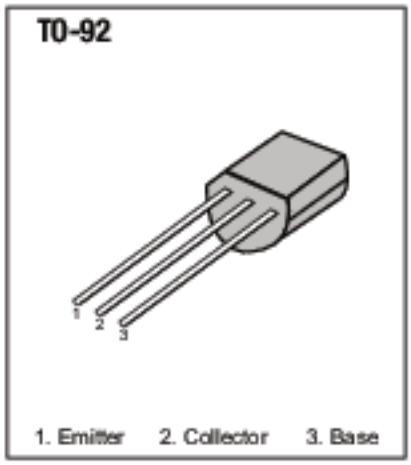
1. Ultra Low-Noise Audio Amplifier Applications

The 2SV888 is a PNP epitaxial transistor which has been optimized for use in audio applications. The ultra-low input voltage noise of the 2SV888 is typically only 0.3 dB over the entire audio bandwidth of 20 Hz to 20 kHz. Its ultra-low noise, high bandwidth and high current gain make the 2SV888 an ideal choice for demanding ultra-low noise preamplifier applications.

2. Ultra Low-Noise Audio Amplifier Applications

- **Low-noise: NF=2dB(typ.) R_G=100Ω, V_{CE}=6V, Ic=100uA, f=1kHz**
  : NF=0.3dB(typ.) R_G=1kΩ, V_{CE}=6V, Ic=100uA, f=1kHz
- **High DC current gain: H_{FE}=200-700**
- **High breakdown voltage: V_{CEO}=-120V**
- **Low pulse noise. Low 1/f noise**





Rev. 1.0

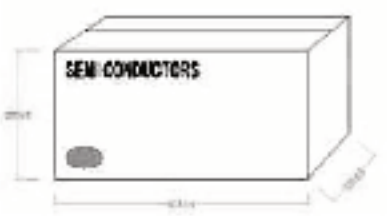
3. Absolute Maximum Ratings (Ta=25°C)

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 (DC)	I_C	-100	mA
Base Current (DC)	I_B	-20	mA
Collector Dissipation	P_C	300	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55-150	°C

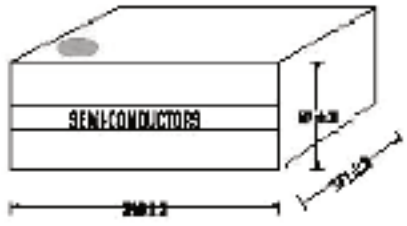
4. Electrical Characteristics (Ta=25°C)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-off Current	I_{CBO}	V_{CB}=-120V, I_E=0			-0.1	uA
Emitter Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0			-0.1	uA
Collector-Emitter Breakdown Voltage	$B V_{CEO}$	I_C=-1mA, I_B=0	-120			V
Emitter-Base Breakdown Voltage	$B V_{EBO}$	I_E=-100uA, I_C=0	-5			V
Collector-Base Breakdown Voltage	$B V_{CBO}$	I_C=-100uA, I_E=0	-120			V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-10mA, I_B=-1mA			-0.3	V
Base-Emitter Voltage	V_{BE}	V_{CE}=-6V, I_C=-2mA		-0.65		V
DC Current Gain	H_{FE1}	V_{CE}=-6V, I_C=-2mA	200		700	
Current Gain Bandwidth Product	f_T	V_{CE}=-6V, I_C=-1mA		100		MHz
Output Capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz		4.0		pF
Noise Figure	NF	V_{CE}=-6V, I_C=-0.1mA, f=10Hz, R_G=10k Ω			4	dB
		V_{CE}=-6V, I_C=-0.1mA, f=1kHz, R_G=10k Ω			1.2	
		V_{CE}=-6V, I_C=-0.1mA, f=1kHz, R_G=100 Ω		2		

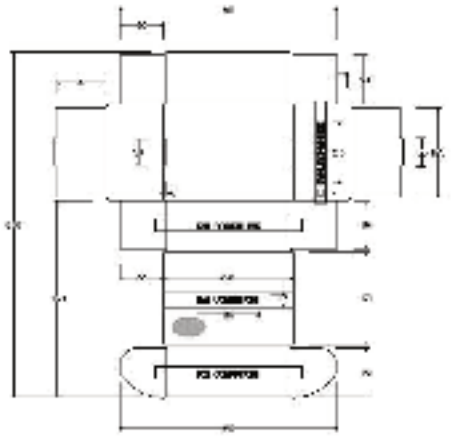
a. **Box1**



b. **Box2**



Green Mark



	Plastic Bag	Box		
Packing	Pcs/Bag	Bags/Box2	Box2/Box1	Pcs/Box1
2SA970GR	1000	10	10	100,000

c. Green-Mark

Pb-FREE

Name of the Part	Material Weight (mg/unit)	Material Name	Material Analysis (element)	Material Analysis (weight%)
Leadframe	27	PMC	Fe Zn P Cu	2.4% 0.03% 0.12% 97.45%
Plastic	47	Epoxy Resin	Epoxy Resin SiO_2 [illegible] [illegible] [illegible]	15% 73% 8% <1% [illegible]3%
Chip	1.25	Doped Silicon	Si Al	99.4% 0.6%
Wires	5	Gold	Au	99.99
Leads Finishing	0.25	Lead-Free	Pb<100ppm	