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September 2015

KSA992 PNP Epitaxial Silicon Transistor

Features

- Audio Frequency Low-Noise Amplifier
- Complement to KSC1845



Ordering Information

Part Number	Top Mark	Package	Packing Method	
KSA992FBU	A992	TO-92 3L	Bulk	
KSA992FTA	A992	TO-92 3L	Ammo	
KSA992FATA	A992	TO-92 3L	Ammo	
KSA992FBTA	A992	TO-92 3L	Ammo	

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^{\circ}\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	-120	V
V _{CEO}	Collector-Emitter Voltage	-120	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current	-50	mA
I _B	Base Current	-10	mA
TJ	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-55 to 150	°C

Thermal Characteristics(1)

Values are at $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Value	Unit
D	Power Dissipation	500	mW
P _D	Derate Above 25°C	4	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	250	°C/W

Note:

1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

Electrical Characteristics

Values are at $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
I _{CBO}	Collector Cut-Off Current	$V_{CB} = -120 \text{ V}, I_{E} = 0$			-50	nA
I _{CEO}	Collector Cut-Off Current	$V_{CE} = -100 \text{ V}, I_{B} = 0$			-1	μΑ
I _{EBO}	Emitter Cut-Off Current	$V_{EB} = -5 \text{ V}, I_{C} = 0$			-50	nA
h _{FE1}	- DC Current Gain	$V_{CE} = -6 \text{ V}, I_{C} = -0.1 \text{ mA}$	150	500		
h _{FE2}	DC Current Gain	$V_{CE} = -6 \text{ V}, I_{C} = -1 \text{ mA}$	200	500	800	
V _{BE} (on)	Base-Emitter On Voltage	$V_{CE} = -6 \text{ V}, I_{C} = -1 \text{ mA}$	-0.55	-0.61	-0.65	V
V _{CE} (sat)	Collector-Emitter Saturation Voltage	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$		-0.09	-0.30	V
f _T	Current Gain Bandwidth Product	$V_{CE} = -6 \text{ V}, I_{C} = -1 \text{ mA}$	50	100		MHz
C _{ob}	Output Capacitance	$V_{CB} = -30 \text{ V}, I_{E} = 0,$ f = 1 MHz		2	3	pF
NV	Noise Voltage	$V_{CE} = -5.0 \text{ V}, I_{C} = -1.0 \text{ mA}, \\ R_{G} = 100 \text{k} \Omega, G_{V} = 80 \text{ dB}, \\ f = 10 \text{ Hz to } 1.0 \text{ kHz}$		25	40	mV

h_{FE} Classification

Classification	Р	F	FA	FB	E
h _{FE2}	200 ~ 400	300 ~ 600	300 ~ 470	430 ~ 600	400 ~ 800

Typical Performance Characteristics

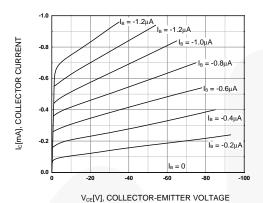


Figure 1. Static Characteristic

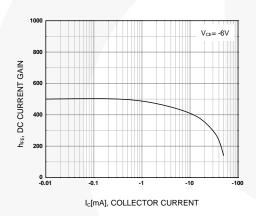


Figure 3. DC Current Gain

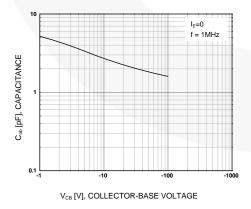


Figure 5. Collector Output Capacitance

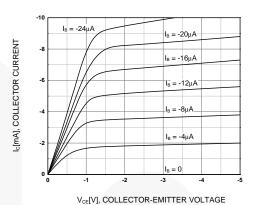


Figure 2. Static Characteristic

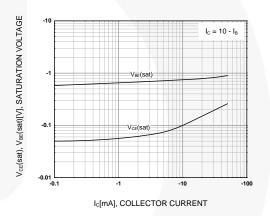


Figure 4. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

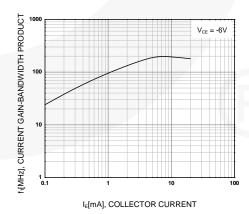


Figure 6. Current Gain Bandwidth Product

Typical Performance Characteristics (Continued)

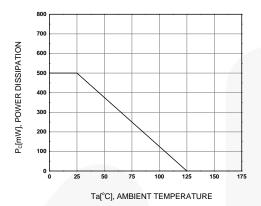


Figure 7. Power Derating

Physical Dimensions

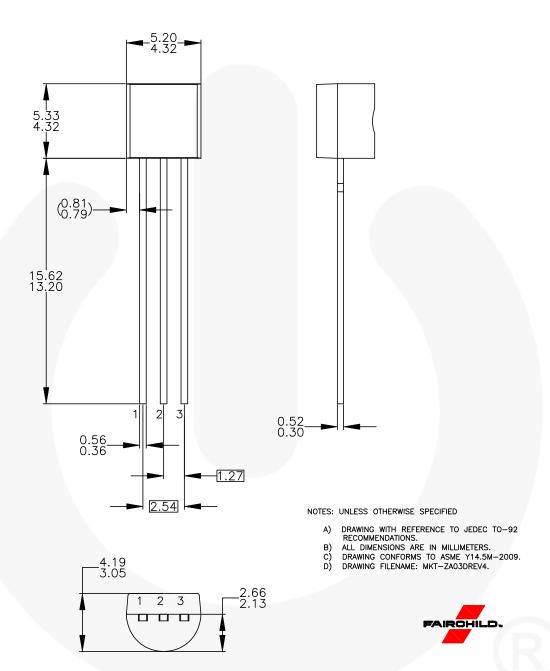
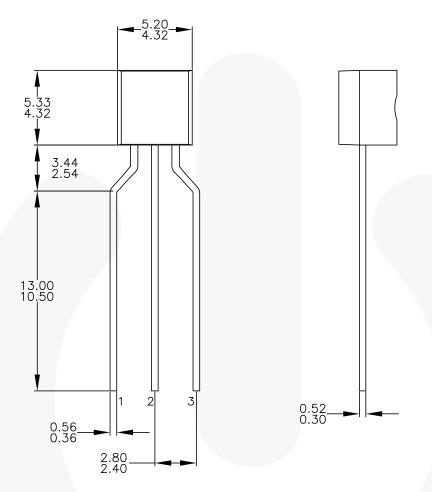
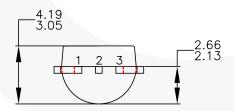


Figure 8. 3-Lead, TO-92, JEDEC TO-92 Compliant Straight Lead Configuration, Bulk Type

Physical Dimensions (Continued)





NOTES: UNLESS OTHERWISE SPECIFIED

- DRAWING CONFORMS TO JEDEC MS-013, VARIATION AC.
 ALL DIMENSIONS ARE IN MILLIMETERS.
 DRAWING CONFORMS TO ASME Y14.5M-2009.
 DRAWING FILENAME: MKT-ZAO3FREV3.
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Figure 9. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form, Ammo, Tape and Reel Type





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Definition of Terms

Definition of Terms					
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