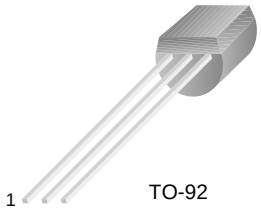
FAIRCHILD SEMICONDUCTOR®

April 2013

KSC1815
NPN Epitaxial Silicon Transistor

Features

- Audio Frequency Amplifier & High Frequency OSC
- Complement to KSA1015
- Collector-Base Voltage: V_{CBO} = 50 V



TO-92

1. Emitter 2. Collector 3. Base

Ordering Information

Part Number	Top Mark	Package	Packing Method
KSC1815YTA	YC&3	TO-92	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°C unless otherwise noted.

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	150	mA
I_B	Base Current	50	mA
P_C	Collector Power Dissipation	400	mW
T_J	Junction Temperature	125	°C
T_{STG}	Storage Temperature	-55 to 150	°C

h_{FE} Classification

Classification	O	Y	GR	L
h_{FE1}	70 ~ 140	120 ~ 240	200 ~ 400	350 ~ 700

Electrical Characteristics

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	V_{CB} = 60 V, I_E = 0			0.1	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5 V, I_C = 0			0.1	μA
h_{FE1}	DC Current Gain	V_{CE} = 6 V, I_C = 2 mA	70		700	
h_{FE2}		V_{CE} = 6 V, I_C = 150 mA	25			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 100 mA, I_B = 10 mA		0.10	0.25	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 100 mA, I_B = 10 mA			1.0	V
f_T	Current Gain Bandwidth Product	V_{CE} = 10 V, I_C = 1 mA	80			MHz
C_{ob}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1 MHz		2.0	3.0	pF
NF	Noise Figure	V_{CE} = 6 V, I_C = 0.1 mA, R_S = 10 kΩ, f = 1 Hz		1.0	1.0	dB

Typical Performance Characteristics

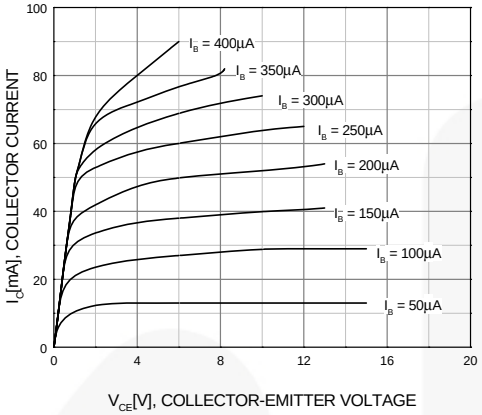


Figure 1. Static Characteristic

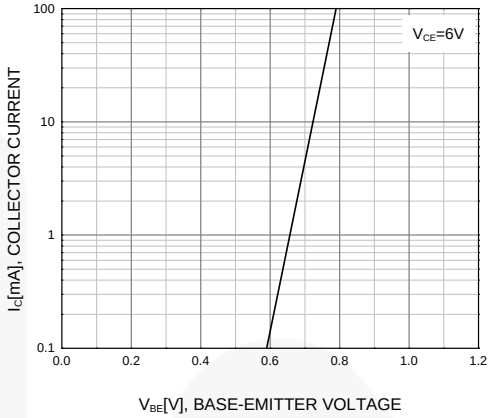


Figure 2. Transfer Characteristic

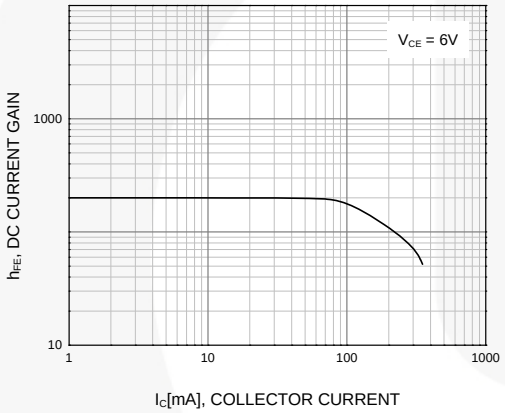


Figure 3. DC current Gain

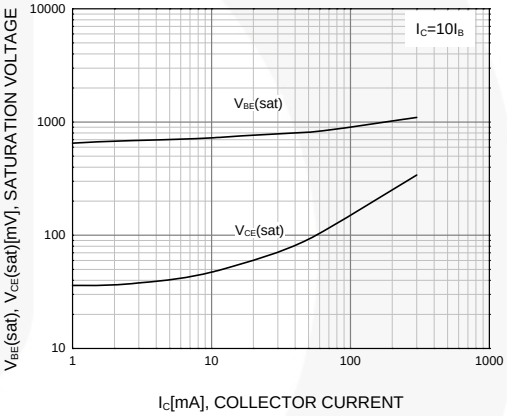


Figure 4. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

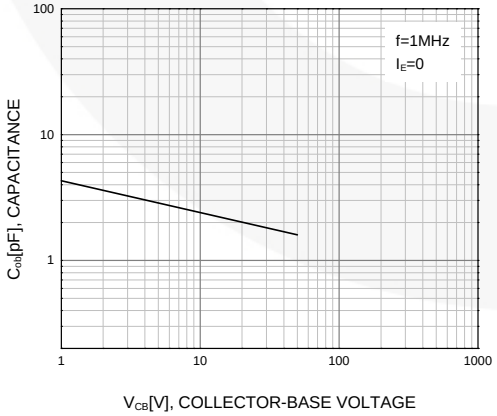


Figure 5. Output Capacitance

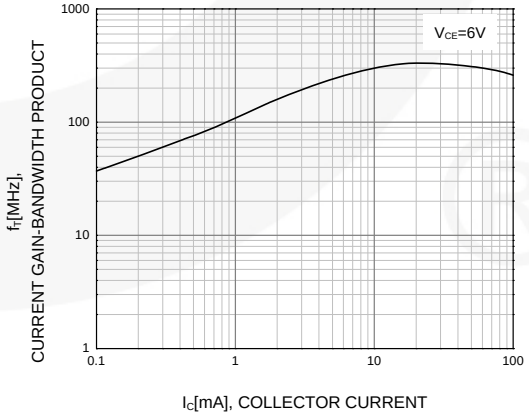
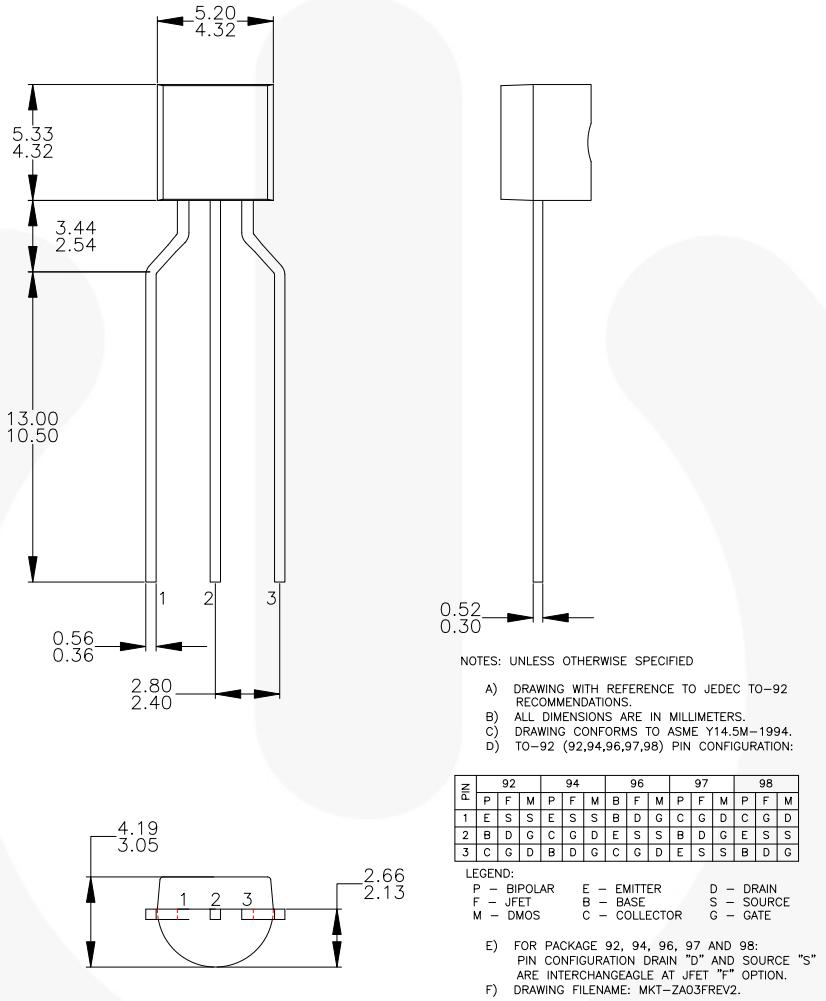


Figure 6. Current Gain Bandwidth Product

Physical Dimensions

TO-92 (AMMO Type)



NOTES: UNLESS OTHERWISE SPECIFIED

A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M-1994.
D) TO-92 (92,94,96,97,98) PIN CONFIGURATION:

PIN	92			94			96			97			98		
	P	F	M	P	F	M	B	F	M	P	F	M	P	F	M
1	E	S	S	E	S	S	B	D	G	C	G	D	C	G	D
2	B	D	G	C	G	D	E	S	S	B	D	G	E	S	S
3	C	G	D	B	D	G	C	G	D	E	S	S	B	D	G

LEGEND:
P – BIPOLAR
F – JFET
M – DMOS
E – EMITTER
B – BASE
C – COLLECTOR
D – DRAIN
S – SOURCE
G – GATE

E) FOR PACKAGE 92, 94, 96, 97 AND 98: PIN CONFIGURATION DRAIN "D" AND SOURCE "S" ARE INTERCHANGEAGLE AT JFET "F" OPTION.
F) DRAWING FILENAME: MKT-ZA03FREV2.

Figure 7. 3-LEAD, TO-92, MOLDED 0.200 IN LINE SPACING LD FORM (J61Z OPTION)

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