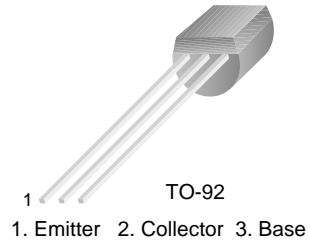


# KSC1815

## NPN Epitaxial Silicon Transistor

### Features

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



### 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  $T_A = 25^\circ\text{C}$  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	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 to 150	$^\circ\text{C}$

**$h_{FE}$  Classification**

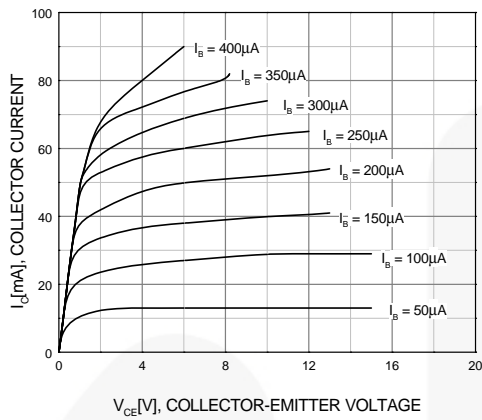
Classification	O	Y	GR	L
$h_{FE1}$	70 ~ 140	120 ~ 240	200 ~ 400	350 ~ 700

**Electrical Characteristics**

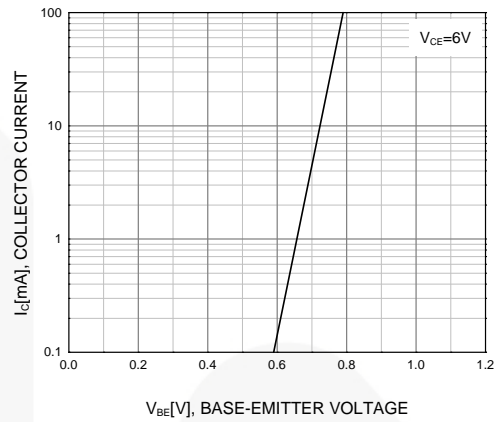
Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

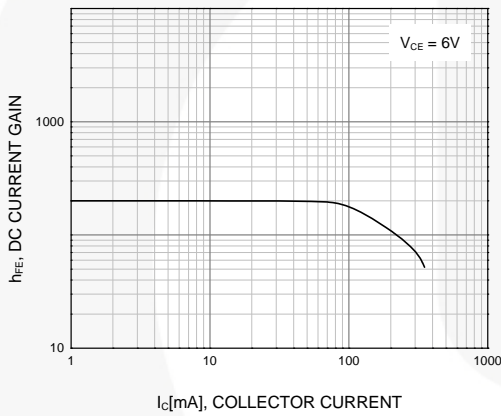
## Typical Performance Characteristics



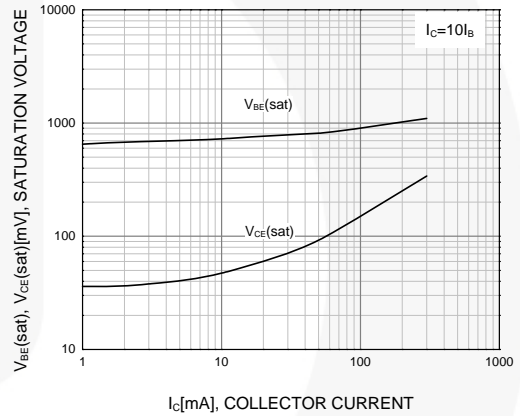
**Figure 1. Static Characteristic**



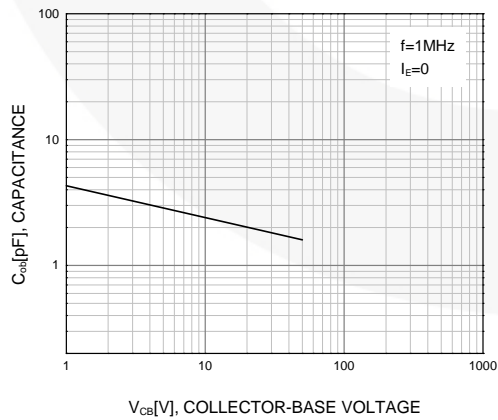
**Figure 2. Transfer Characteristic**



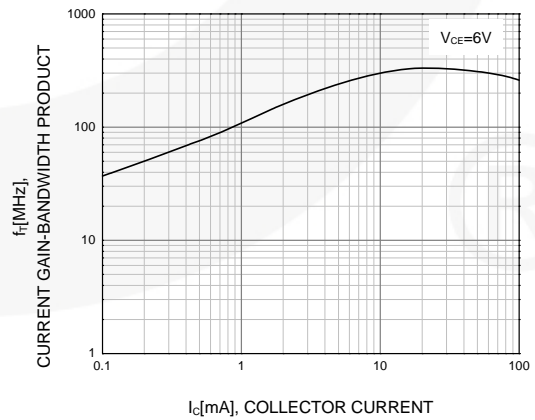
**Figure 3. DC current Gain**



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



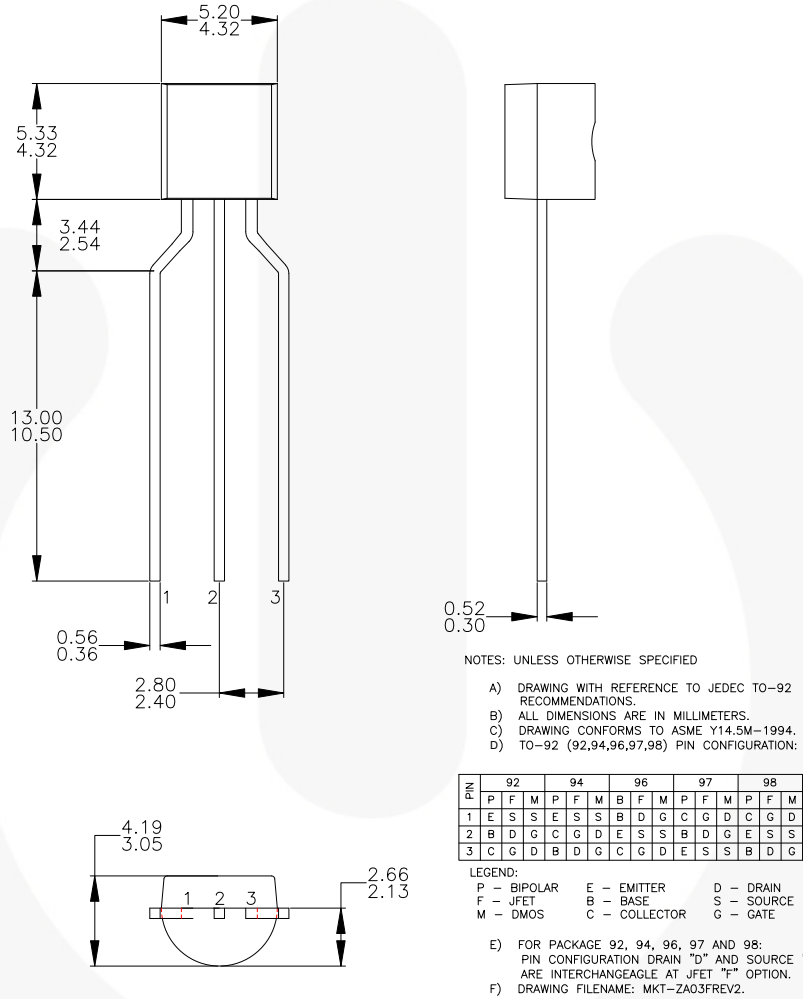
**Figure 5. Output Capacitance**



**Figure 6. Current Gain Bandwidth Product**

## Physical Dimensions

### TO-92 (AMMO Type)



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

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| AccuPower™  | F-PFS™   | PowerTrench®  |  |
| AX-CAP®*  | FRFET®   | PowerXS™  | TinyBoost™  |
| BitSiC™   | Global Power Resource <sup>SM</sup>            | Programmable Active Droop™  | TinyBuck™   |
| Build it Now™   | GreenBridge™                                   | QFET®   | TinyCalc™   |
| CorePLUS™   | Green FPS™                                     | QS™   | TinyLogic®  |
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| Fairchild®  | MicroPak2™                                     | SuperFET®   | Ultra FRFET™  |
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| FACT®   | mWSaver™                                       | SuperSOT™-8   | VisualMax™  |
| FAST®   | OptoHi™  | SupreMOS®   | VoltagePlus™  |
| FastvCore™  | OPTOLOGIC®                                     | SyncFET™  | XS™   |
| FETBench™   | OPTOPLANAR®                                    |   |   |

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