



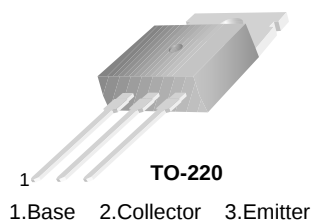
August 2009

KSC1173

NPN Epitaxial Silicon Transistor

Features

- Low Frequency Power Amplifier, Power Regulator
- Collector Current : $I_C=3A$
- Collector Dissipation : $P_C=10W$ ($T_C=25^\circ C$)
- Complement to KSA473



Absolute Maximum Ratings * $T_A = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
BV_{CBO}	Collector-Base Voltage	30	V
BV_{CEO}	Collector-Emitter Voltage	30	V
BV_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	3	A
P_C	Collector Dissipation ($T_C=25^\circ C$)	10	W
T_J	Junction Temperature	150	$^\circ C$
T_{STG}	Storage Temperature	-55 to +150	$^\circ C$

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 500\mu\text{A}, I_E = 0$	30			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}, I_B = 0$	30			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = -1\text{mA}, I_C = 0$	5			
I_{CBO}	Collector Cut-off Current	$V_{CB} = 20\text{V}, I_E = 0$			1.0	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			1.0	μA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 2\text{V}, I_C = 0.5\text{A}$ $V_{CE} = 2\text{V}, I_C = 2.5\text{A}$	70 25		240	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 0.2\text{A}$		0.3	0.8	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 2\text{V}, I_C = 0.5\text{A}$		0.75	1.0	V
f_T	Current Gain Base Width Product	$V_{CE} = 2\text{V}, I_C = 0.5\text{A}$		100		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0,$ $f = 1\text{MHz}$		35		pF

 h_{FE} Classification

Classification	O	Y
h_{FE1}	70 ~ 140	120 ~ 240

Typical Performance Characteristics

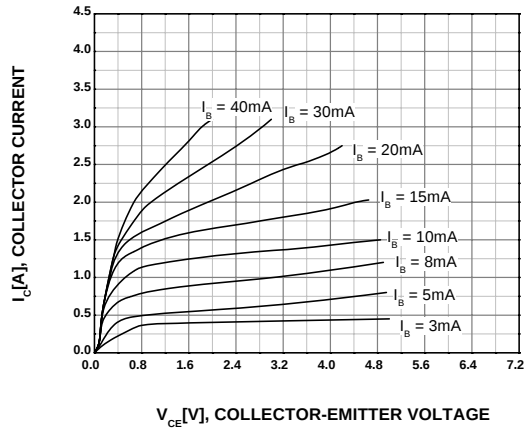


Figure 1. Static Characteristic

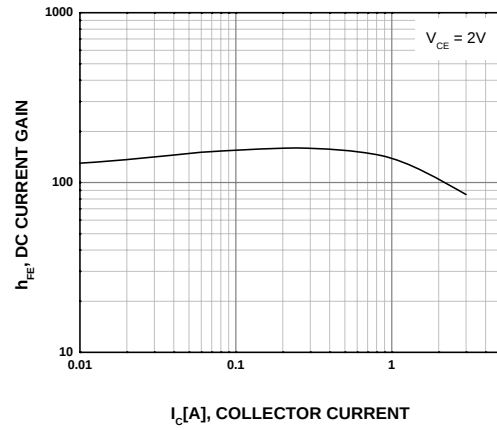


Figure 2. DC current Gain

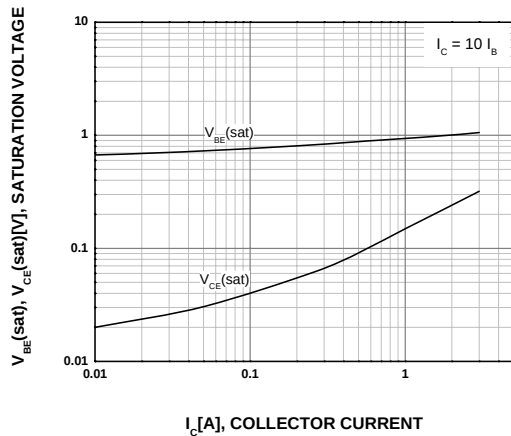


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

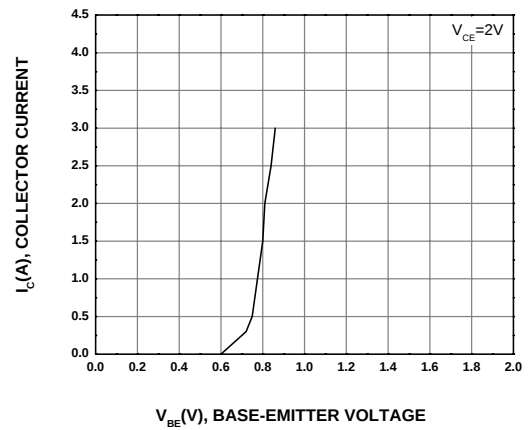


Figure 4. Base-Emitter On Voltage

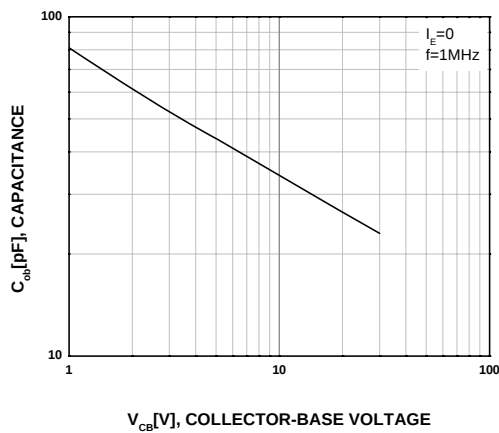


Figure 5. Collector Output Capacitance

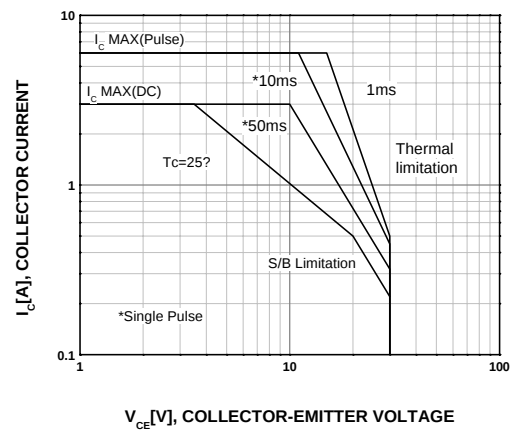


Figure 6. Safe Operating Area

Typical Performance Characteristics

(Continued)

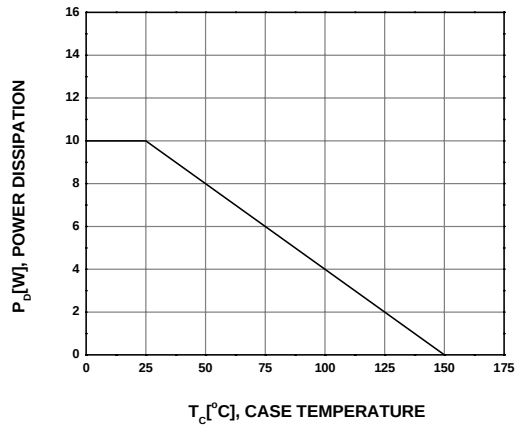
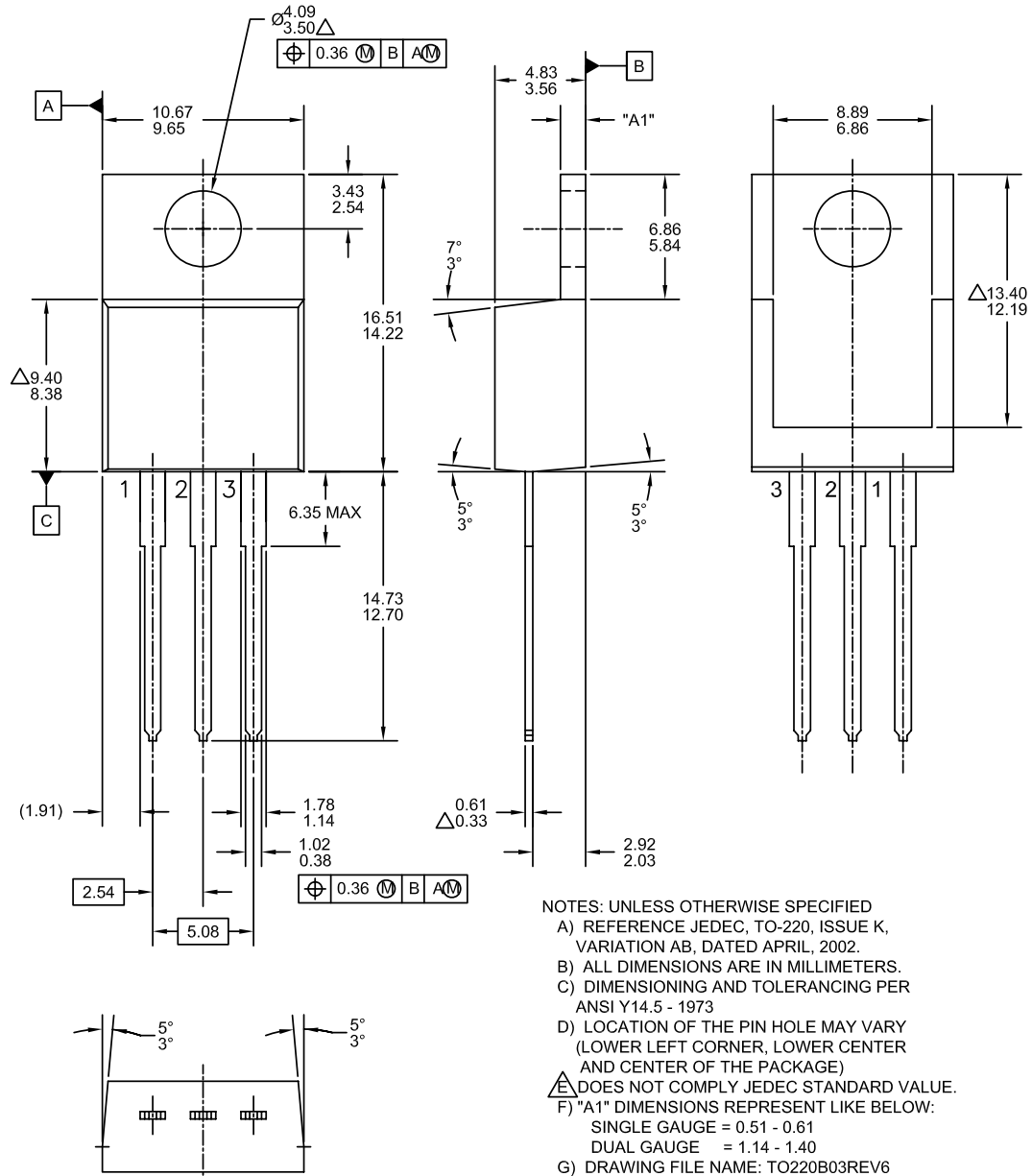


Figure 7. Power Derating

Physical Dimensions

TO-220





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