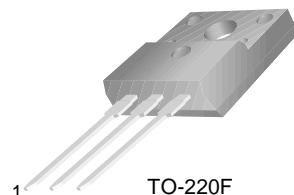


KSB1023

Power Amplifier Applications

- High DC Current Gain
- Low Collector-Emitter Saturation Voltage
- Complement to KSD1413



TO-220F
1.Base 2.Collector 3.Emitter

PNP Silicon Darlington Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	- 60	V
V_{CEO}	Collector-Emitter Voltage	- 40	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 3	A
I_{CP}	Collector Current (Pulse)	- 6	A
I_B	Base Current	- 0.3	A
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	2	W
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	20	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = - 25\text{mA}, I_B = 0$	- 40			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = - 60\text{V}, I_E = 0$			- 20	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = - 5\text{V}, I_C = 0$			- 2.5	mA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = - 2\text{V}, I_C = - 1\text{A}$ $V_{CE} = - 2\text{V}, I_C = - 3\text{A}$	2000 1000			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = - 2\text{A}, I_B = - 4\text{mA}$			- 1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = - 2\text{A}, I_B = - 4\text{mA}$			- 2	V
t_{ON}	Turn ON Time	$V_{CC} = - 30\text{V}, I_C = - 3\text{A}$		0.3		μs
t_{STG}	Storage Time	$I_{B1} = - I_{B2} = - 6\text{mA}$ $R_L = 10\Omega$		0.6		μs
t_F	Fall Time			0.25		μs

Typical Characteristics

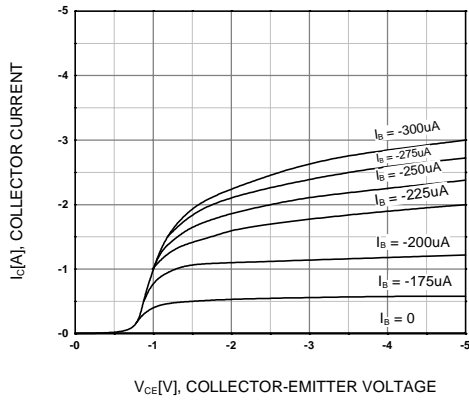


Figure 1. Static Characteristic

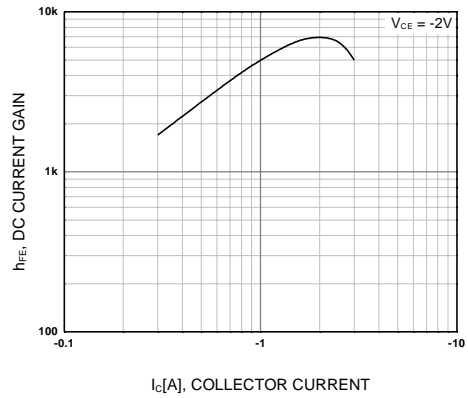


Figure 2. DC current Gain

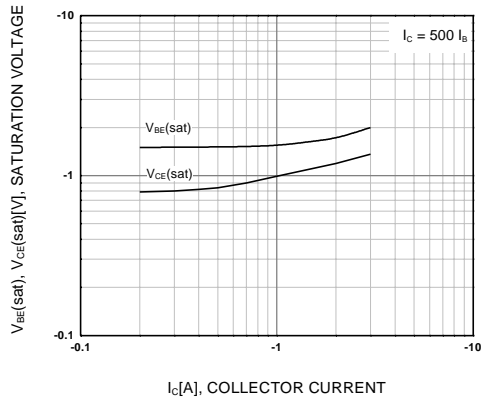


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturating Voltage

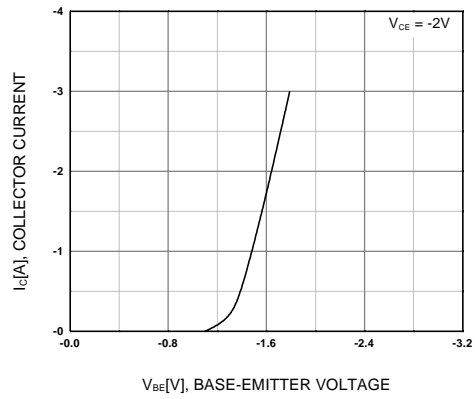


Figure 4. Base-Emitter On Voltage

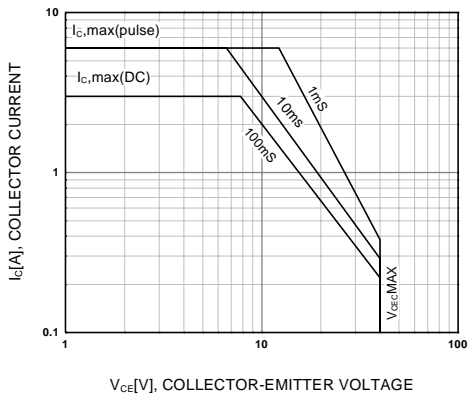


Figure 5. Safe Operating Area

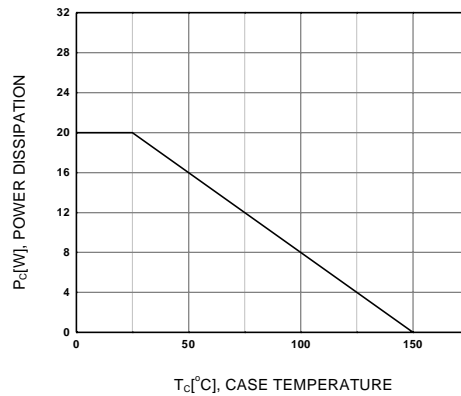
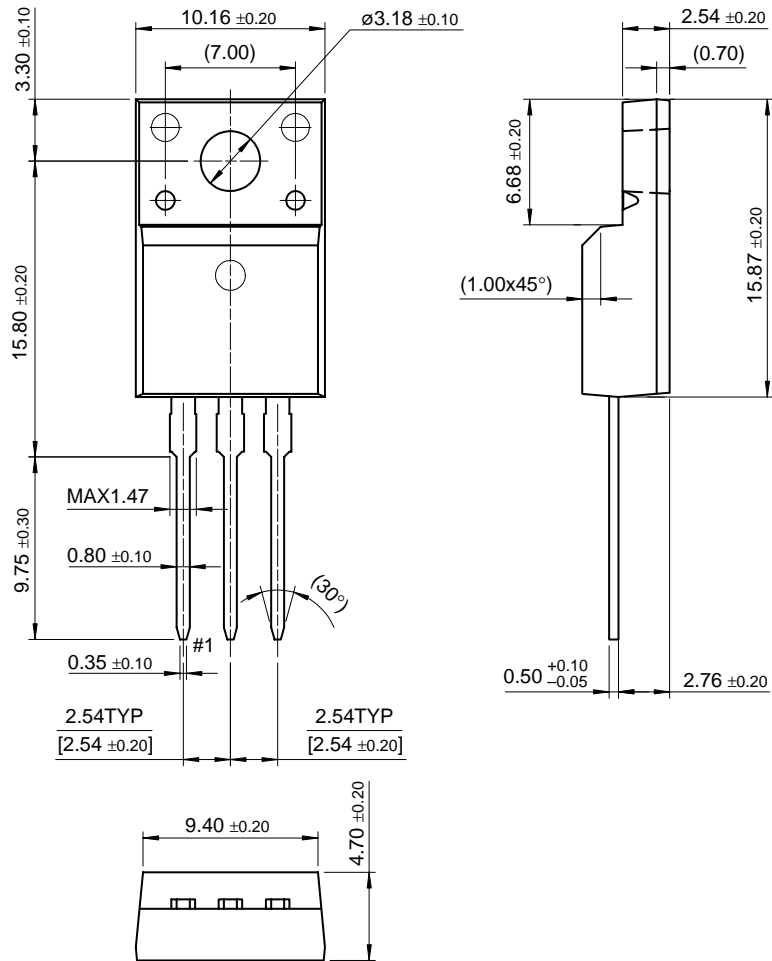


Figure 6. Power Derating

Package Dimensions

KSB1023

TO-220F



Dimensions in Millimeters

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