

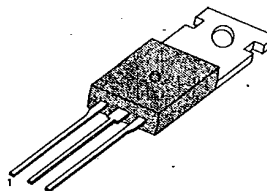
KSB834**PNP SILICON EPITAXIAL TRANSISTOR****LOW FREQUENCY POWER AMPLIFIER**

• Complement to KSD880

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	-60	V
Collector-Emitter Voltage	V_{CE0}	-60	V
Emitter-Base Voltage	V_{EB0}	-7	V
Collector Current	I_C	-3	A
Base Current	I_B	-0.5	A
Collector Dissipation ($T_a=25^\circ\text{C}$)	P_C	1.5	W
Collector Dissipation ($T_c=25^\circ\text{C}$)	P_C	30	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~150	$^\circ\text{C}$

TO-220



1. Base 2. Collector 3. Emitter

3

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=-60\text{V}, I_E=0$			-100	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-7\text{V}, I_C=0$			-100	μA
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=-50\text{mA}, I_B=0$	-60			V
DC Current Gain	h_{FE1}	$V_{CE}=-5\text{V}, I_C=-0.5\text{A}$	60		200	
	h_{FE2}	$V_{CE}=-5\text{V}, I_C=-3\text{A}$	20			
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-3\text{A}, I_B=-0.3\text{A}$		-0.5	-1	V
Base Emitter On Voltage	$V_{BE(on)}$	$V_{CE}=-5\text{V}, I_C=-0.5\text{A}$		-0.7	-1	V
Current Gain Bandwidth Product	f_T	$V_{CE}=-5\text{V}, I_C=-0.5\text{A}$		9		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0$ $f=1\text{MHz}$		150		pF
Turn on Time	t_{on}			0.4		μs
Storage Time	t_s	$-I_B1=I_B2=0.2\text{A}$		1.7		μs
Fall Time	t_f	$V_{CC}=-30\text{V}$		0.5		μs

 $h_{FE}(1)$ CLASSIFICATION

Classification	O	Y
$h_{FE}(1)$	60-120	100-200

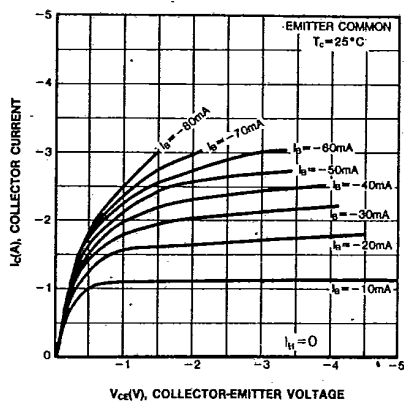


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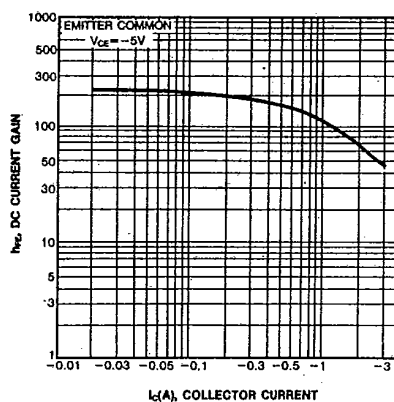
PNP SILICON EPITAXIAL TRANSISTOR

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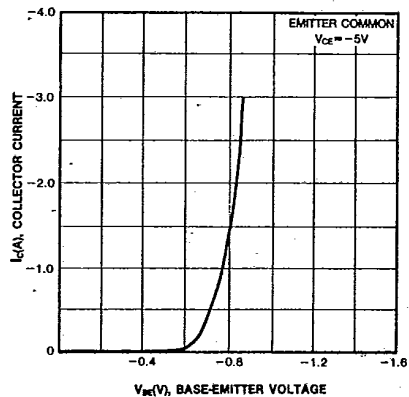
STATIC CHARACTERISTIC



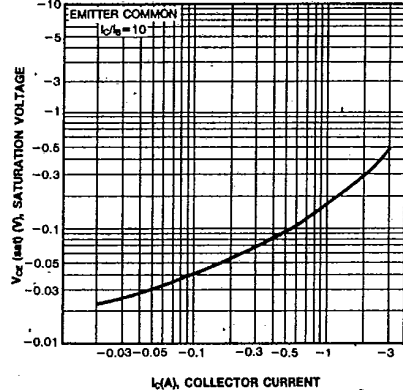
DC CURRENT GAIN



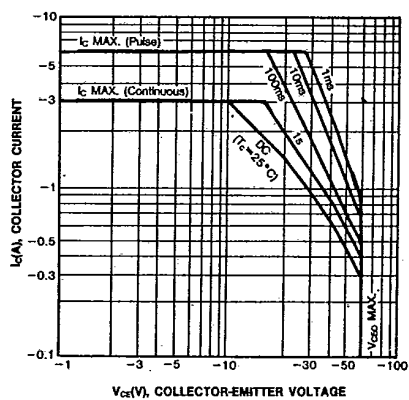
BASE-EMITTER ON VOLTAGE



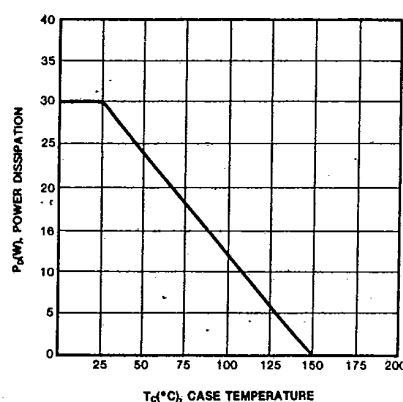
COLLECTOR-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT



SAFE OPERATING AREA



POWER DERATING



KSB1149

PNP SILICON DARLINGTON TRANSISTOR

HIGH DC CURRENT GAIN
LOW COLLECTOR SATURATION VOLTAGE
BUILT-IN A DAMPER DIODE AT E-C

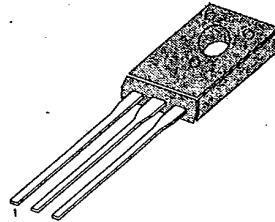
HIGH POWER DISSIPATION: $P_T=1.3W$ ($T_a=25^\circ C$)

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	-100	V
Collector-Emitter Voltage	V_{CE0}	-100	V
Emitter-Base Voltage	V_{EB0}	-8	V
Collector Current (DC)	I_C	-3	A
*Collector Current (Pulse)	I_C	-5	A
Collector Dissipation ($T_a=25^\circ C$)	P_C	1.3	W
Collector Dissipation ($T_C=25^\circ C$)	P_C	15	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55~150	$^\circ C$

* $P_W \leq 10ms$, Duty Cycle $\leq 50\%$

TO-126



1. Emitter 2. Collector 3. Base

3

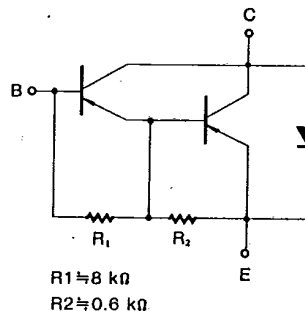
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = -100V, I_E = 0$			-10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-2	mA
*DC Current Gain	h_{FE1}	$V_{CE} = -2V, I_C = -1.5A$	2000		15000	
	h_{FE2}	$V_{CE} = -2V, I_C = -3A$	1000			
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -1.5A, I_B = -1.5mA$		-0.9	-1.2	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1.5A, I_B = -1.5mA$		-1.5	-2	V
Turn On Time	t_{on}	$I_C = -1.5A$		0.5		μS
Storage Time	t_{stg}	$I_{B1} = -I_{B2} = -1.5mA$		2		μS
Fall Time	t_f	$R_L = 27\Omega, V_{CC} = -40V$		1		μS

* Pulse test: $P_W \leq 350\mu s$, duty cycle $\leq 2\%$ Pulsed

 $h_{FE}(1)$ CLASSIFICATION

Classification	O	Y	G
h_{FE1}	2000-5000	4000-12000	6000-20000

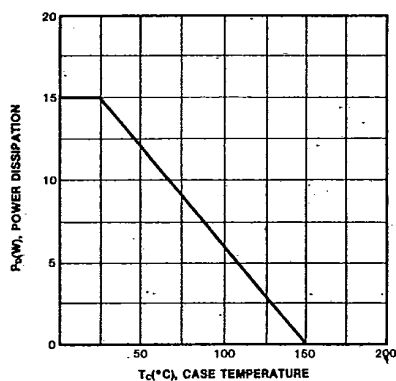


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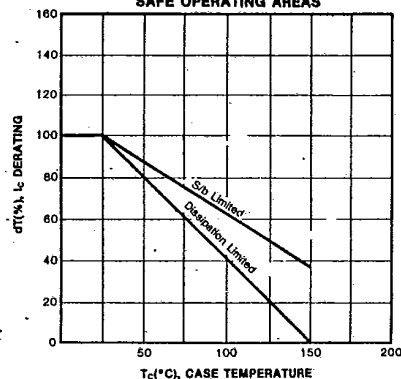
PNP SILICON DARLINGTON TRANSISTOR

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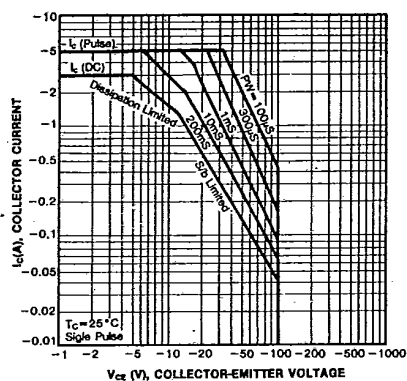
POWER DERATING



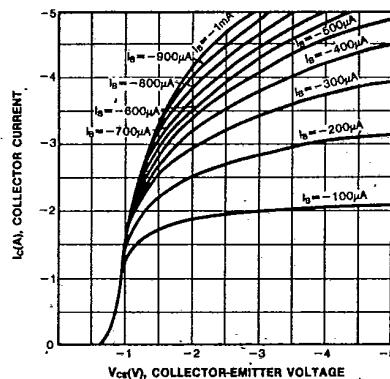
DERATING CURVE OF SAFE OPERATING AREAS



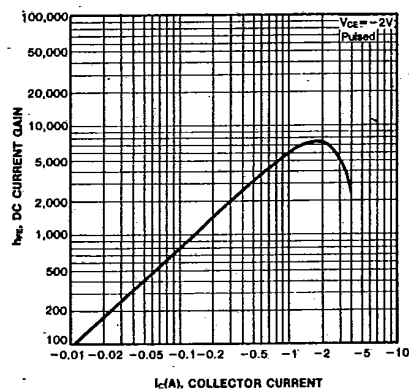
FORWARD BIAS SAFE OPERATING AREA



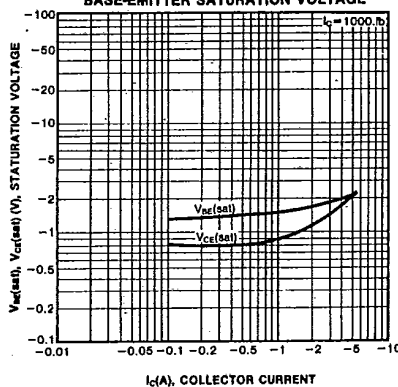
STATIC CHARACTERISTIC



DC CURRENT GAIN



COLLECTOR-EMITTER SATURATION VOLTAGE, BASE-EMITTER SATURATION VOLTAGE



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PNP SILICON DARLINGTON TRANSISTOR

T-33-31

