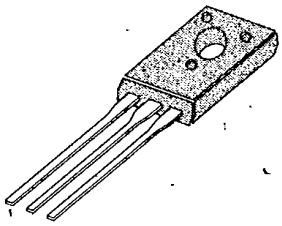
KSD882 NPN EPITAXIAL SILICON TRANSISTOR

AUDIO FREQUENCY POWER AMPLIFIER
LOW SPEED SWITCHING

- Complement to KSB772

TO-126



1. Emitter 2. Collector 3. Base

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	3	A
Collector Current (Pulse)	I_C	7	A
Base Current (DC)	I_B	0.6	A
Collector Dissipation (T_c=25°C)	P_C	10	W
Collector Dissipation (T_a=25°C)	P_C	1	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55~150	°C

* PW≤10ms, Duty Cycle ≤50%

ELECTRICAL CHARACTERISTICS (T_a=25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	V_{CB}=30V, I_E=0			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=3V, I_C=0			1	μA
*DC Current Gain	h_{FE1}	V_{CE}=2V, I_C=20mA	30	150		
	h_{FE2}	V_{CE}=2V, I_C=1A	60	160	400	
*Collector Emitter Saturation Voltage	V_{CE} (sat)	I_C=2A, I_B=0.2A		0.3	0.5	V
*Base Emitter Saturation Voltage	V_{BE} (sat)	I_C=2A, I_B=0.2A		1.0	2.0	V
Current Gain Bandwidth Product	f_T	V_{CE}=5V, I_E=−0.1A		90		MHz
Output Capacitance	Cob	V_{CB}=10V, I_E=0 f=1MHz		45		pF

* Pulse Test: PW≤350μs, Duty Cycle≤2%

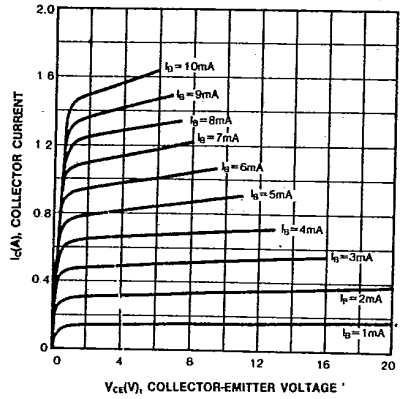
h_{FE}(2) CLASSIFICATION

Classification	R	O	Y	G
h_{FE}(2)	60-120	100-200	160-320	200-400

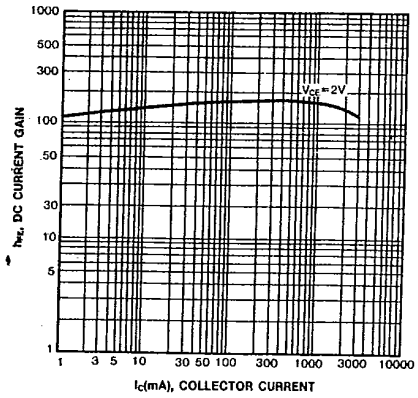
KSD882 NPN EPITAXIAL SILICON TRANSISTOR

T-33-07

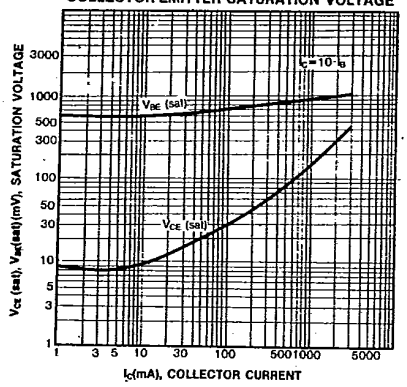
STATIC CHARACTERISTIC



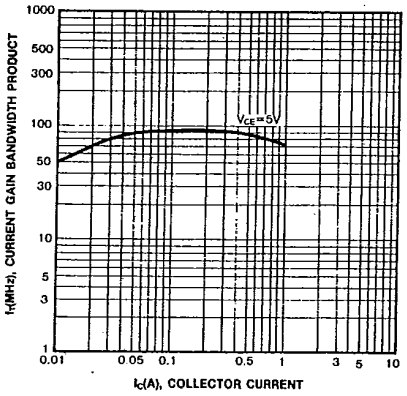
DC CURRENT GAIN



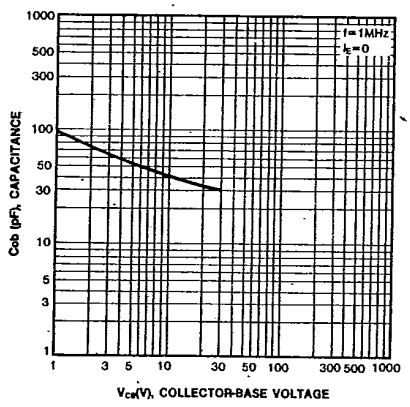
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



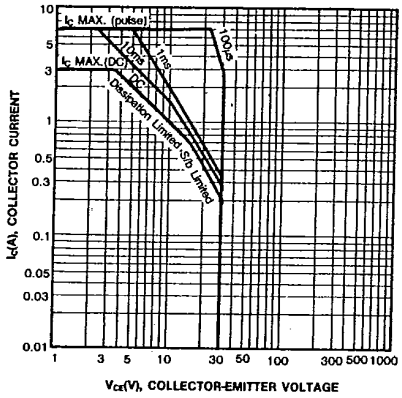
CURRENT GAIN-BANDWIDTH PRODUCT



COLLECTOR OUTPUT CAPACITANCE



SAFE OPERATING AREA

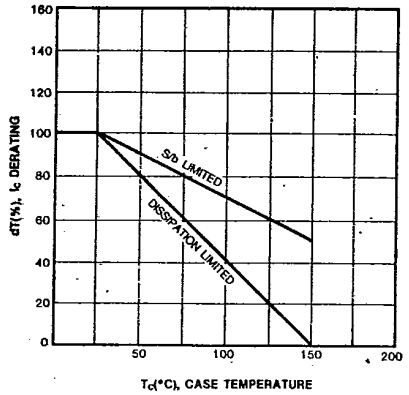


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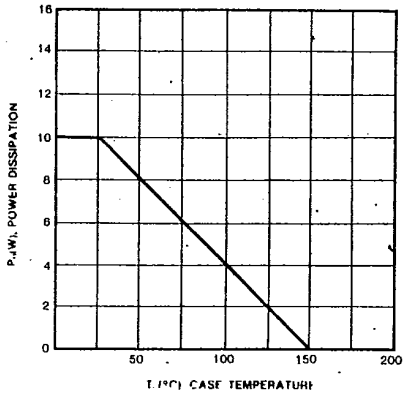
KSD882 NPN EPITAXIAL SILICON TRANSISTOR

T-33-07

DERATING CURVE OF SAFE OPERATING AREAS



POWER DERATING



KSD985

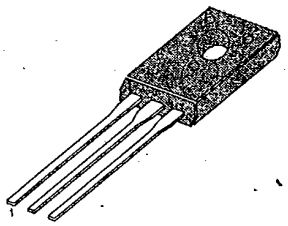
SAMSUNG SEMICONDUCTOR INC

NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR

T-33-29

LOW FREQUENCY POWER AMPLIFIER
LOW SPEED SWITCHING
INDUSTRIAL USE

TO-126



1. Emitter 2. Collector 3. Base

3

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	150	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	8.0	V
Collector Current (DC)	I_C	±1.5	A
*Collector Current (Pulse)	I_C	±3.0	A
Base Current (DC)	I_B	0.15	A
Collector Dissipation (T_a=25°C)	P_C	1.0	W
Collector Dissipation (T_c=25°C)	P_C	10	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55~150	°C

* PW≤300μs, Duty Cycle ≤10%

ELECTRICAL CHARACTERISTICS (T_a=25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	V_{CB}=60V, I_E=0			10	μA
Collector Cutoff Current	I_{CER}	V_{CE}=60V, R_{BE}=51Ω, T_a=125°C			1.0	mA
Collector Cutoff Current	$I_{CEX}1$	V_{CE}=60V, V_{BE} (off)=−1.5V			10	μA
Collector Cutoff Current	$I_{CEX}2$	V_{CE}=60V, V_{BE} (off)=−1.5V, T_a=125°C			1.0	mA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			1.0	mA
*DC Current Gain	h_{FE1}	V_{CE}=2V, I_C=0.5A	1000			
	h_{FE2}	V_{CE}=2V, I_C=1A	2000		30000	
*Collector-Emitter Saturation Voltage	V_{CE} (sat)	I_C=1A, I_B=1mA			1.5	V
*Base-Emitter Saturation Voltage	V_{BE} (sat)	I_C=1A, I_B=1mA			2.0	V
Turn On Time	ton	I_C≒1A, RL=50Ω				
Storage Time	ts	I_{B1}=−I_{B2}=1mA		0.5		μs
Fall time	tf	V_{CC}≅50V		1.0		μs
				1.0		μs

*Pulse Test: PW≤350μs, Duty Cycle≤2%

h_{FE}(2) CLASSIFICATION

Classification	R	O	Y
h_{FE}(2)	2000-5000	4000-10000	8000-30000

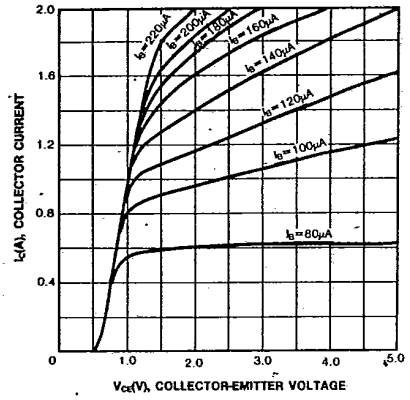
KSD985

NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR

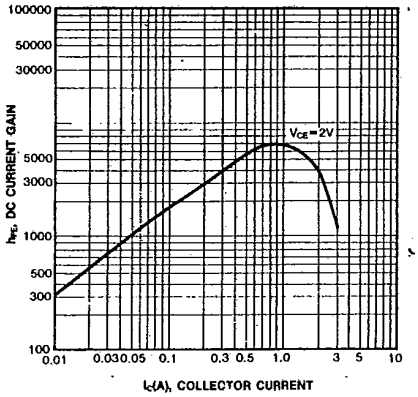
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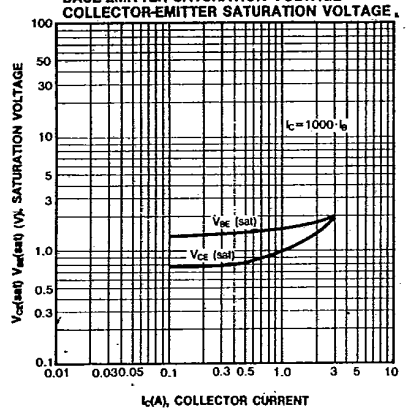
STATIC CHARACTERISTIC



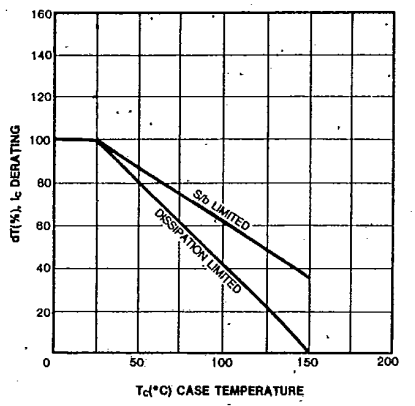
DC CURRENT GAIN



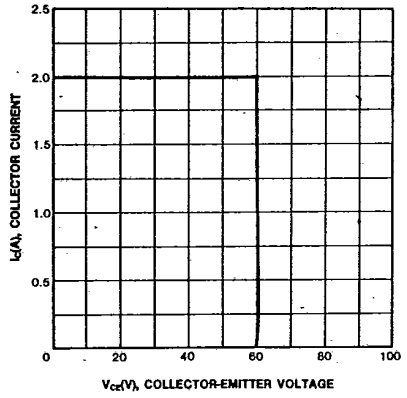
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



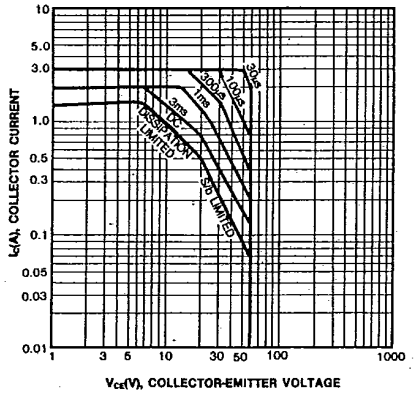
DERATING CURVE OF SAFE OPERATING AREAS



REVERSE BIAS SAFE OPERATING AREAS



SAFE OPERATING AREA

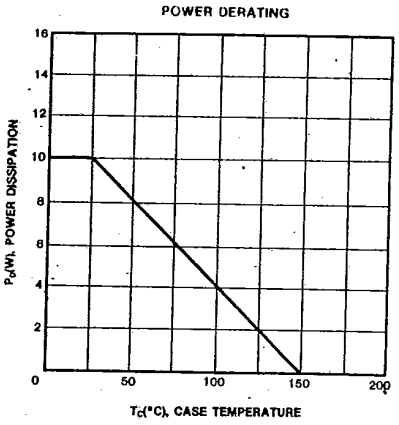


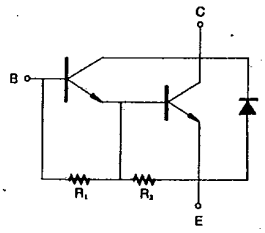
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NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR

T-33-29





R_1≒10kΩ
R_2≒500Ω

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