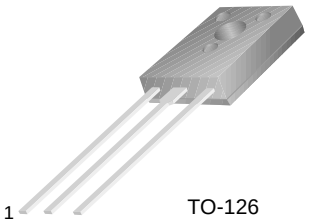
FAIRCHILD
SEMICONDUCTOR TM

KSD985/986

Low Frequency Power Amplifier

- Low Speed Switching Industrial Use



TO-126

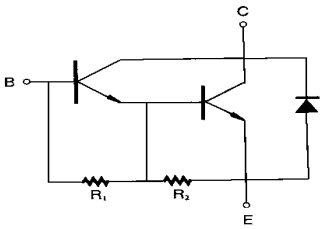
1. Emitter 2.Collector 3.Base

NPN Epitaxial Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Volage : KSD985 : KSD986	 60 80	 V V
V_{EBO}	Emitter-Base Voltage	8.0	V
I_C	Collector Current (DC)	1.5	A
I_{CP}	*Collector Current (Pulse)	3.0	A
I_B	Base Current	0.15	A
P_C	Collector Dissipation (T_a=25°C)	1.0	W
P_C	Collector Dissipation (T_C=25°C)	10	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

* PW≤300μs, Duty Cycle10%



R_1≒10kΩ
R_2≒500Ω

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	V_{CB} = 60V, I_E = 0			10	μA
I_{CER}	Collector Cut-off Current	V_{CE} = 60V, R_{BE} = 51Ω @ T_C = 125°C			1.0	mA
I_{CEX1} I_{CEX2}	Collector Cut-off Current	V_{CE} = 60V, V_{BE}(off) = -1.5A V_{CE} = 60V, V_{BE}(off) = -1.5A @ T_C = 125°C			10 1.0	μA mA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0			1.0	mA
h_{FE1} h_{FE2}	*DC Current Gain	V_{CE} = 2V, I_C = 0.5A V_{CE} = 2V, I_C = 1A	1000 2000		 30000	
V_{CE}(sat)	*Collector-Emitter Saturation Voltage	I_C = 1A, I_B = 1mA			1.5	V
V_{BE}(sat)	*Base-Emitter Saturation Voltage	I_C = 1A, I_B = 1mA			2.0	V
t_{ON}	Turn ON Time	V_{CC} = 50V, I_C = 1A I_{B1} = - I_{B2} = 1mA R_L = 50Ω		0.5		μs
t_{STG}	Storage Time			1.0		μs
t_F	Fall Time			1.0		μs

* Pulse Test: PW≤350μs, Duty Cycle≤2%

h_{FE} Classification

Classification	R	O	Y
h_{FE2}	2000 ~ 5000	4000 ~ 10000	8000 ~ 30000

Typical Characteristics

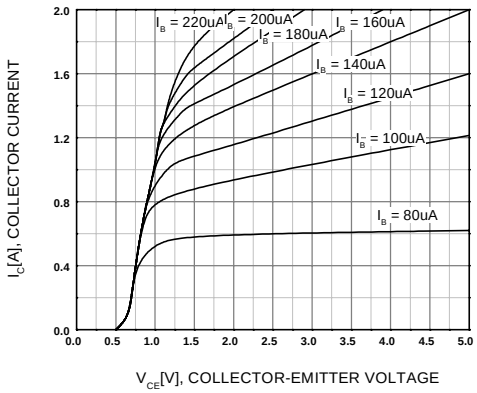


Figure 1. Static Characteristic

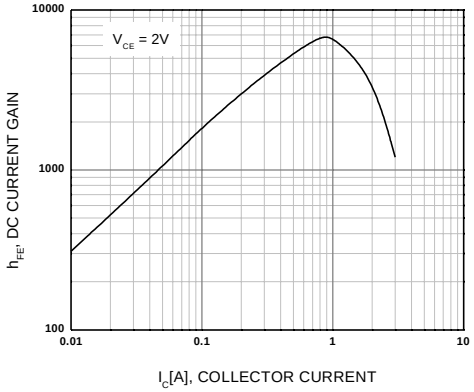


Figure 2. DC current Gain

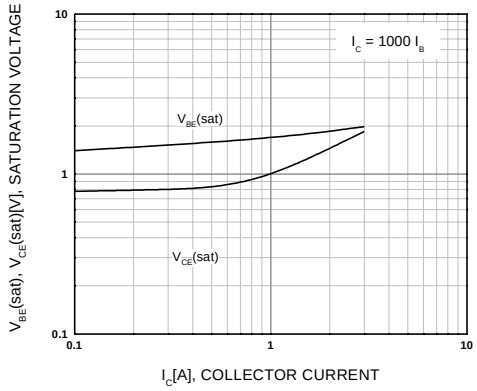


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

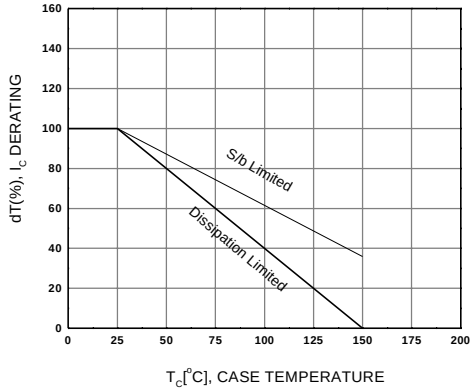


Figure 4. Derating Curve Of Safe Operating Areas

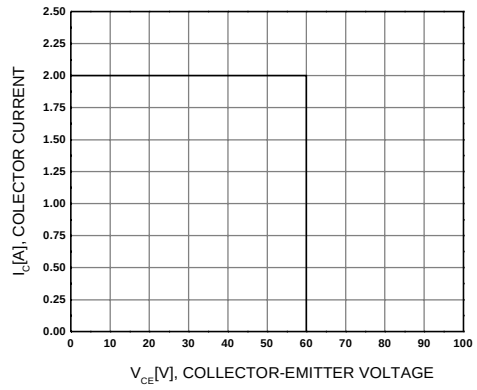


Figure 5. Reverse Bias Safe Operating Areas

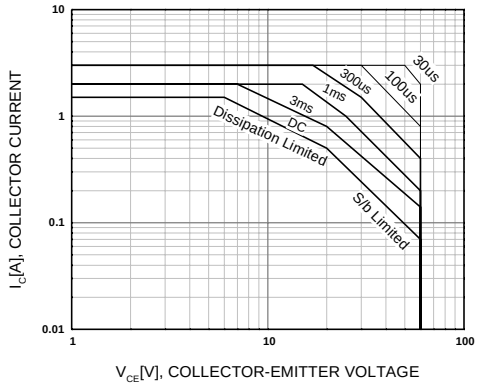


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

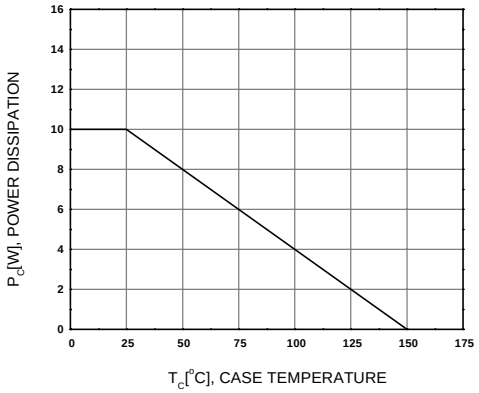


Figure 7. Power Derating

Package Demensions

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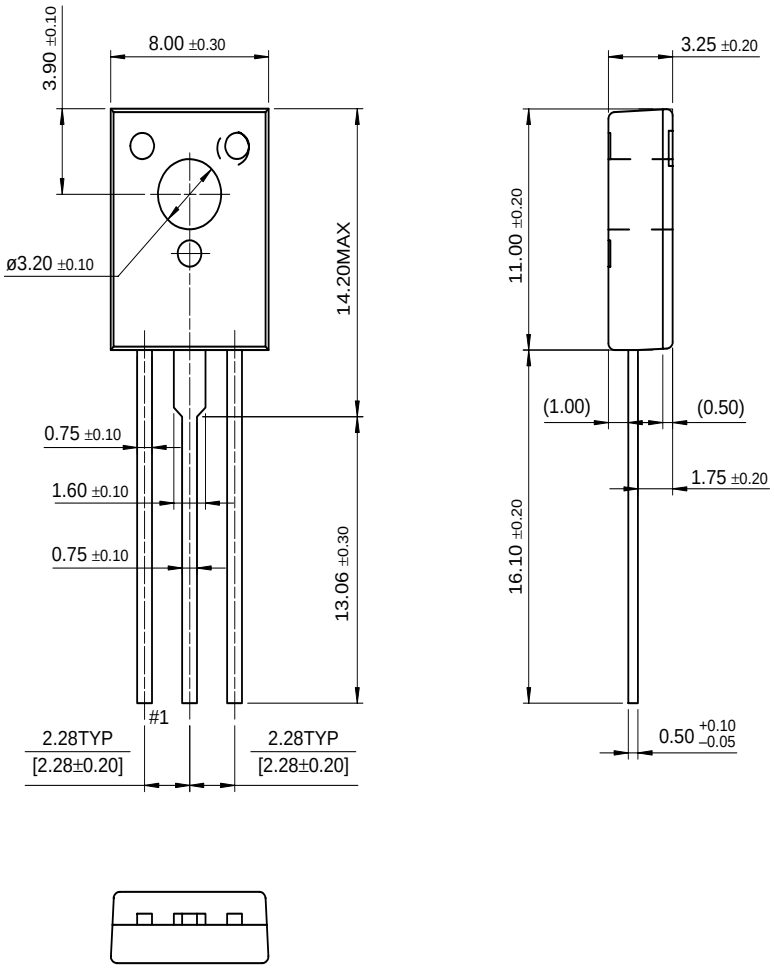

Dimensions in Millimeters

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