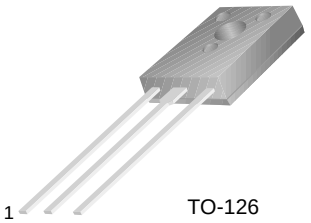
FAIRCHILD
SEMICONDUCTOR TM

KSD985/986

Low Frequency Power Amplifier

- Low Speed Switching Industrial Use



TO-126

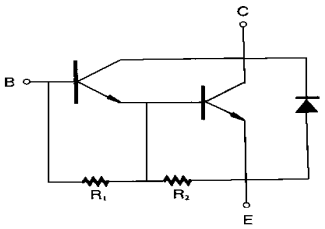
1. Emitter 2.Collector 3.Base

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

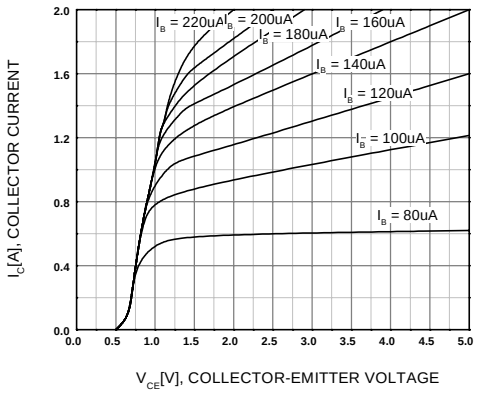


Figure 1. Static Characteristic

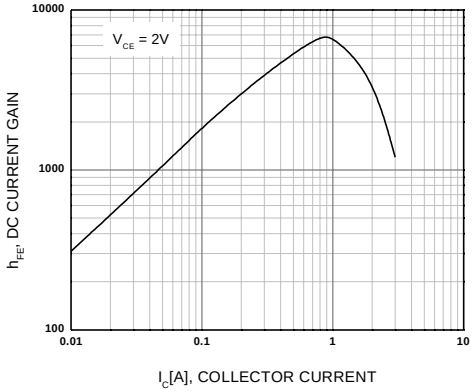


Figure 2. DC current Gain

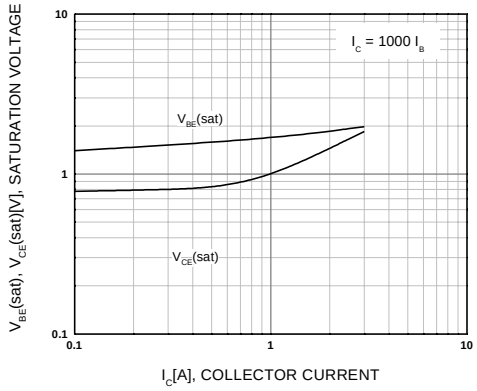


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

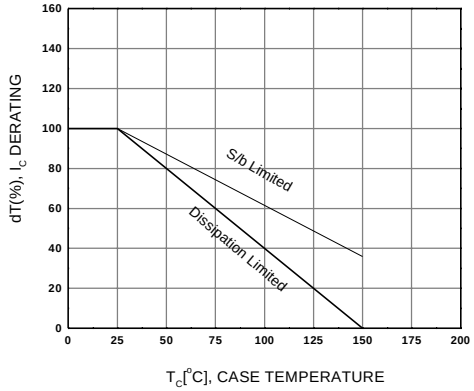


Figure 4. Derating Curve Of Safe Operating Areas

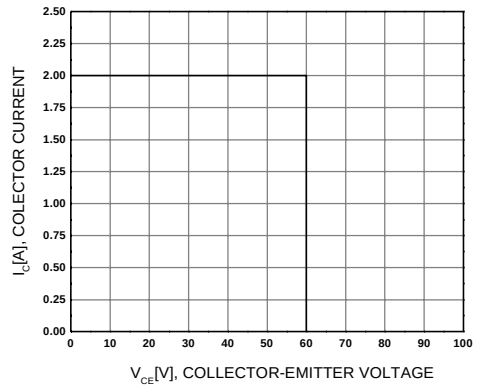


Figure 5. Reverse Bias Safe Operating Areas

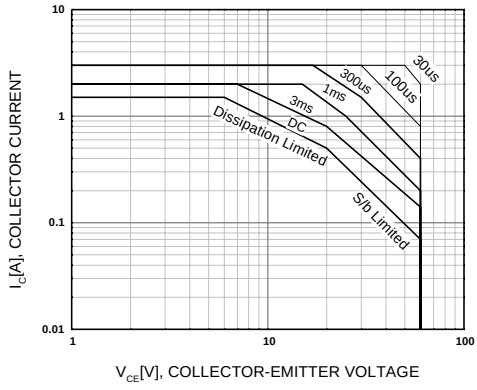


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

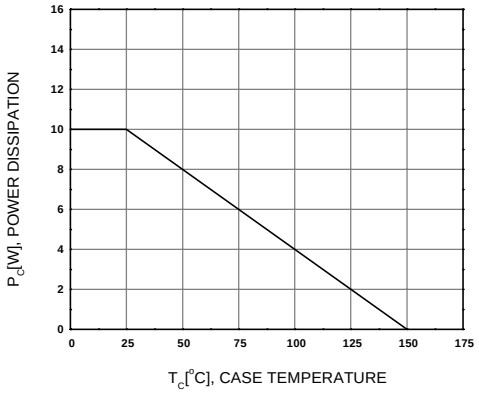
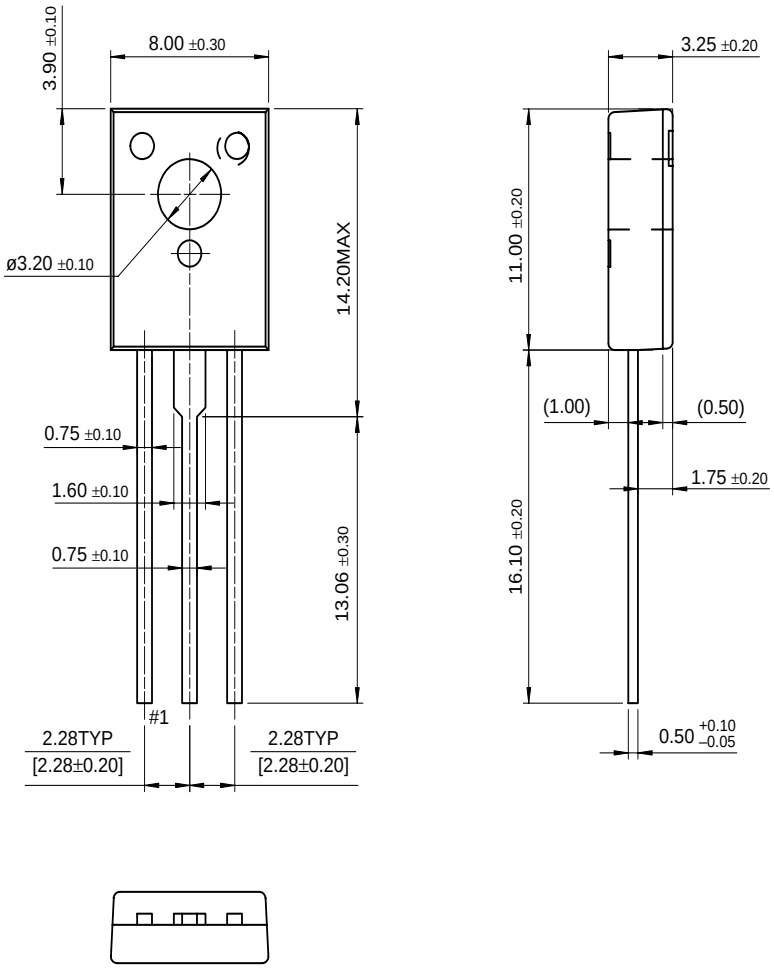


Figure 7. Power Derating

Package Demensions

TO-126



Dimensions in Millimeters

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

KSD986

NPN Epitaxial Silicon Darlington Transistor

Contents

BUY

Datasheet
Download this datasheet

e-mail this datasheet

This page
Print version

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Request samples
How to order products
Product Change Notices (PCNs)
Support
Sales support
Quality and reliability
Design center

Features

- Low Speed Switching Industrial Use

back to top

Applications

Low Frequency Power Amplifier

back to top

Product status/pricing/packaging

BUY

Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
KSD986OS	Full Production	Full Production	$0.194	TO-126	3	BULK	Line 1: **$Y** (Fairchild logo) &**3** (3-Digit Date Code) Line 3: D986-O
KSD986YS	Full Production	Full Production	$0.194	TO-126	3	BULK	Line 1: **$Y** (Fairchild logo) &**3** (3-Digit Date Code) Line 3: D986-Y
KSD986YSTSSTU	Full Production	Full Production	$0.194	TO-126	3	RAIL	Line 1: **$Y** (Fairchild logo) &**3** (3-Digit Date Code)

* Fairchild 1,000 piece Budgetary Pricing
** A sample button will appear if the part is available through Fairchild's on-line samples program. If there is no sample button, please contact a Fairchild distributor to obtain samples

Indicates product with Pb-free second-level interconnect. For more information click here.

Package marking information for product KSD986 is available. Click here for more information .

back to top

Models

Package & leads	Condition	Temperature range	Software version	Revision date
PSPICE				
TO-126-3	Electrical	-25°C to 125°C	9.2	Jan 8, 2002

back to top

Qualification Support

Click on a product for detailed qualification data

Product
KSD986OS
KSD986YS
KSD986YSTSSTU

back to top