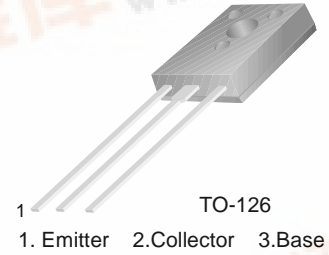


FAIRCHILD
SEMICONDUCTOR™

KSD985/986

Low Frequency Power Amplifier

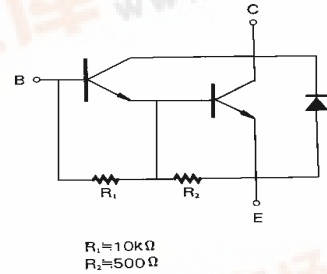
- Low Speed Switching Industrial Use



NPN Epitaxial Silicon Darlington Transistor

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

Symbol	Parameter	Value	Units
V_{CB0}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	60 80	V V
		: KSD985 : KSD986	
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 ($T_a=25^\circ\text{C}$)	1.0	W
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	10	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$



* $PW \leq 300\mu\text{s}$, Duty Cycle 10%

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CB0}	Collector Cut-off Current	$V_{CB} = 60\text{V}, I_E = 0$			10	μA
I_{CER}	Collector Cut-off Current	$V_{CE} = 60\text{V}, R_{BE} = 51\Omega$ @ $T_C = 125^\circ\text{C}$			1.0	mA
I_{CEX1}	Collector Cut-off Current	$V_{CE} = 60\text{V}, V_{BE}(\text{off}) = -1.5\text{V}$ $V_{CE} = 60\text{V}, V_{BE}(\text{off}) = -1.5\text{V}$ @ $T_C = 125^\circ\text{C}$			10	μA
I_{CEX2}					1.0	mA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			1.0	mA
h_{FE1}	*DC Current Gain	$V_{CE} = 2\text{V}, I_C = 0.5\text{A}$ $V_{CE} = 2\text{V}, I_C = 1\text{A}$	1000			
h_{FE2}			2000		30000	
$V_{CE}(\text{sat})$	*Collector-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 1\text{mA}$			1.5	V
$V_{BE}(\text{sat})$	*Base-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 1\text{mA}$			2.0	V
t_{ON}	Turn ON Time	$V_{CC} = 50\text{V}, I_C = 1\text{A}$		0.5		μs
t_{STG}	Storage Time	$I_{B1} = -I_{B2} = 1\text{mA}$ $R_L = 50\Omega$		1.0		μs
t_F	Fall Time			1.0		μs

* Pulse Test: $PW \leq 350\mu\text{s}$, Duty Cycle $\leq 2\%$

h_{FE} Classification

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



Typical Characteristics

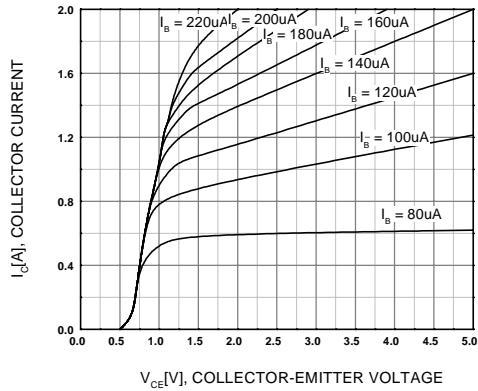


Figure 1. Static Characteristic

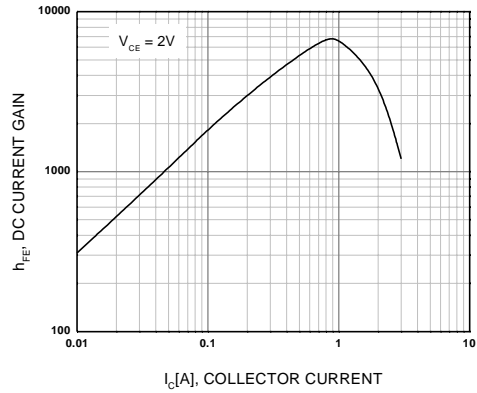


Figure 2. DC current Gain

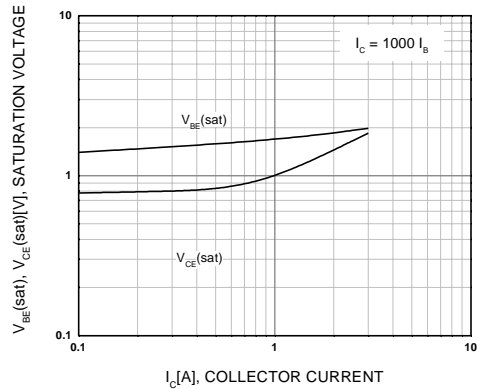


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

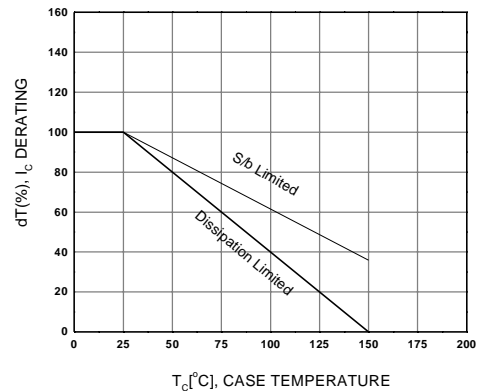


Figure 4. Derating Curve Of Safe Operating Areas

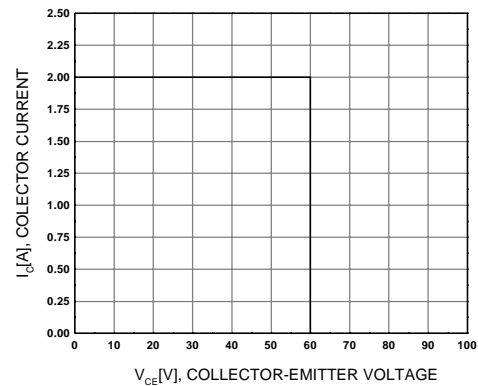


Figure 5. Reverse Bias Safe Operating Areas

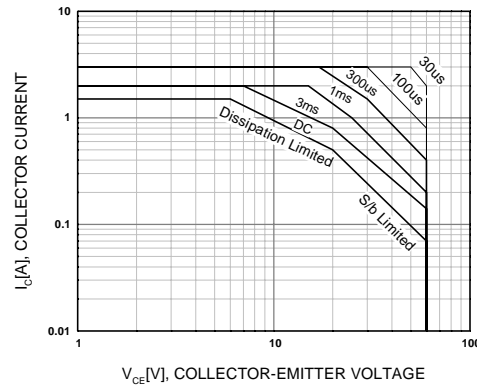


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

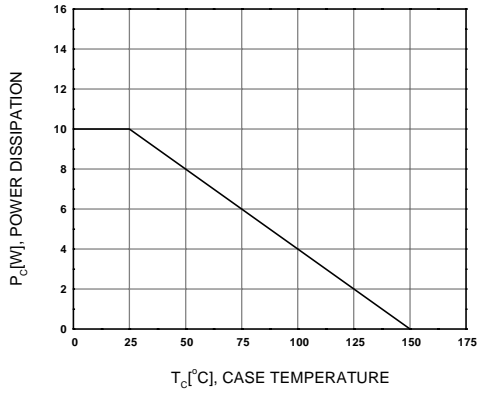
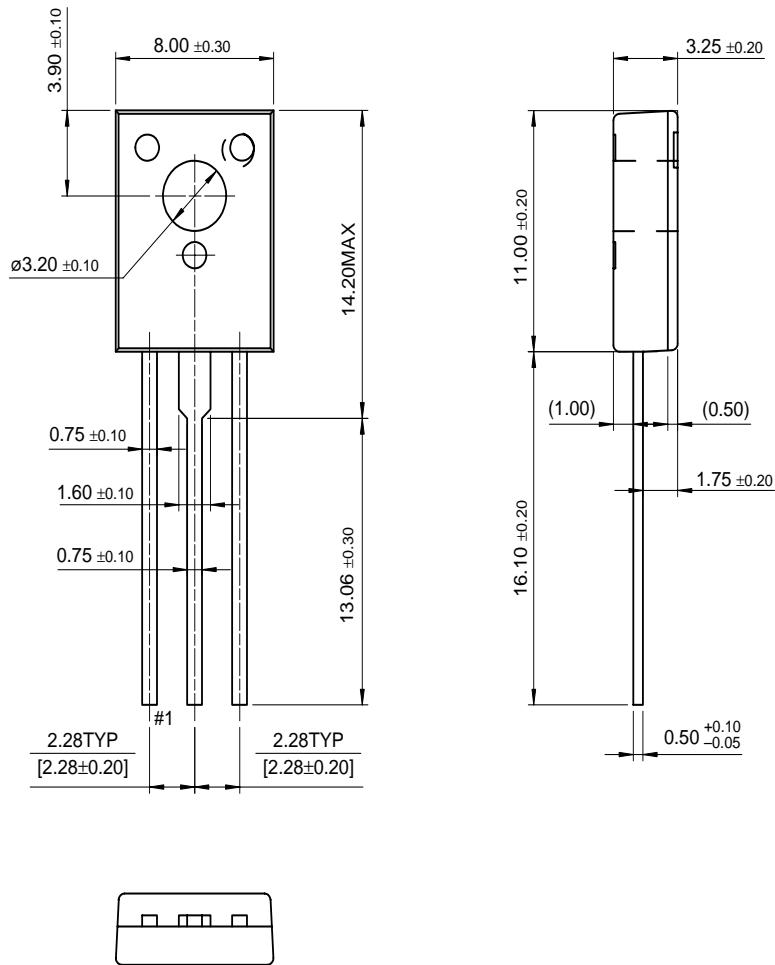


Figure 7. Power Derating

Package Dimensions

KSD985/986

TO-126



Dimensions in Millimeters

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CROSSVOLT™	POPT™	UHC™
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FACT™	QFET™	
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FAST®	Quiet Series™	
FASTr™	SuperSOT™-3	
GTO™	SuperSOT™-6	

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