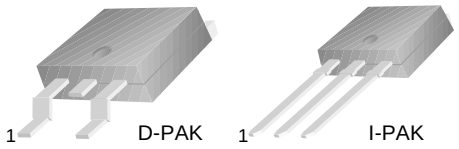
FAIRCHILD
SEMICONDUCTOR®

KSH122

D-PAK for Surface Mount Applications

- High DC Current Gain
- Built-in a Damper Diode at E-C
- Lead Formed for Surface Mount Applications (No Suffix)
- Straight Lead (I-PAK, " - I " Suffix)
- Electrically Similar to Popular TIP122
- Complement to KSH127



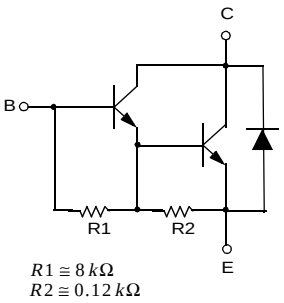
1.Base 2.Collector 3.Emitter

NPN Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	8	A
I_{CP}	Collector Current (Pulse)	16	A
I_B	Base Current	120	mA
P_C	Collector Dissipation (T_C=25°C)	20	W
	Collector Dissipation (T_a=25°C)	1.75	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

Equivalent Circuit



$R1 \cong 8\,k\Omega$
$R2 \cong 0.12\,k\Omega$

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V_{CEO}(sus)	*Collector-Emitter Sustaining Voltage	I_C = 30mA, I_B = 0	100		V
I_{CEO}	Collector Cut-off Current	V_{CE} = 50V, I_B =0		10	μA
I_{CBO}	Collector Cut-off Current	V_{CB} = 100V, I_E = 0		10	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0		2	mA
h_{FE}	*DC Current Gain	V_{CE} = 4V, I_C = 4A V_{CE} = 4V, V_{EB} = 8A	1000 100	12K	
V_{CE}(sat)	*Collector-Emitter Saturation Voltage	I_C = 4A, I_B = 16mA I_C = 8A, I_B = 80mA		2 4	V V
V_{BE}(sat)	*Base-Emitter Saturation Voltage	I_C = 8A, I_B = 80mA		4.5	V
V_{BE}(on)	*Base-Emitter ON Voltage	V_{CE} = 4V, I_C = 4A		2.8	V
C_{ob}	Output Capacitance	V_{CB} = 10V, I_E = 0 f= 0.1MHz		200	pF

* Pulse Test: PW≤300μs, Duty Cycle≤2%

Typical Characteristics

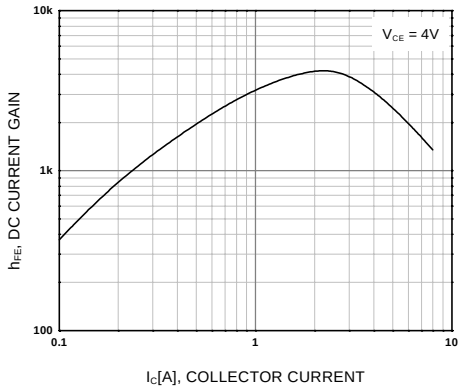


Figure 1. DC current Gain

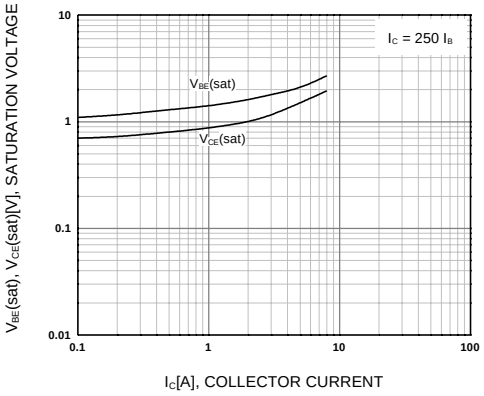


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

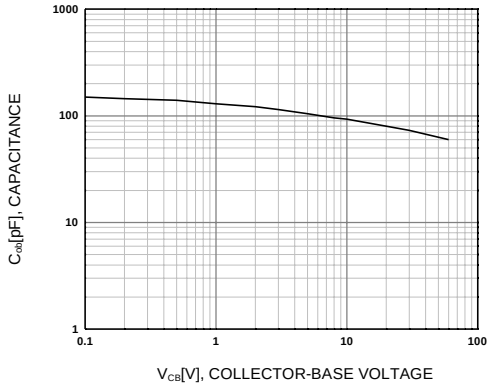


Figure 3. Collector Output Capacitance

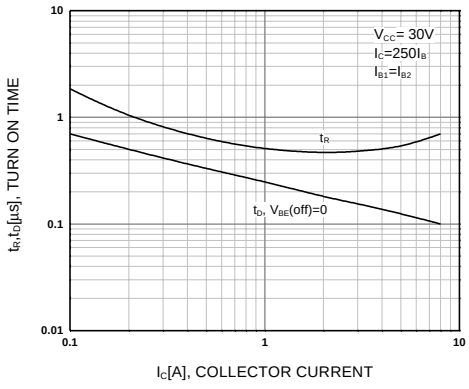


Figure 4. Turn On Time

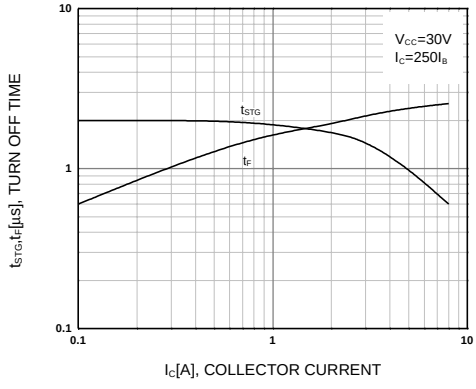


Figure 5. Turn Off Time

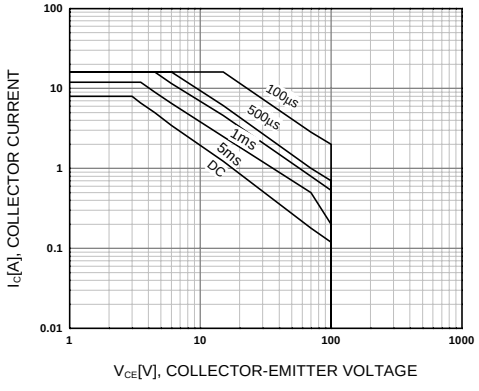


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

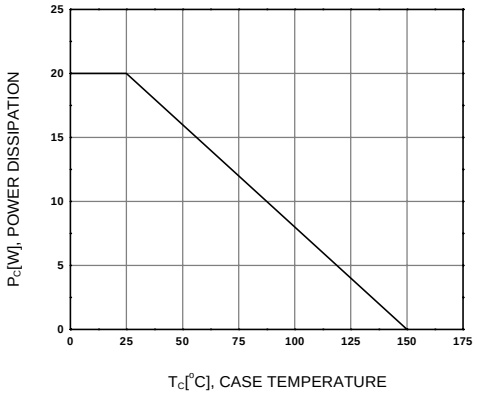
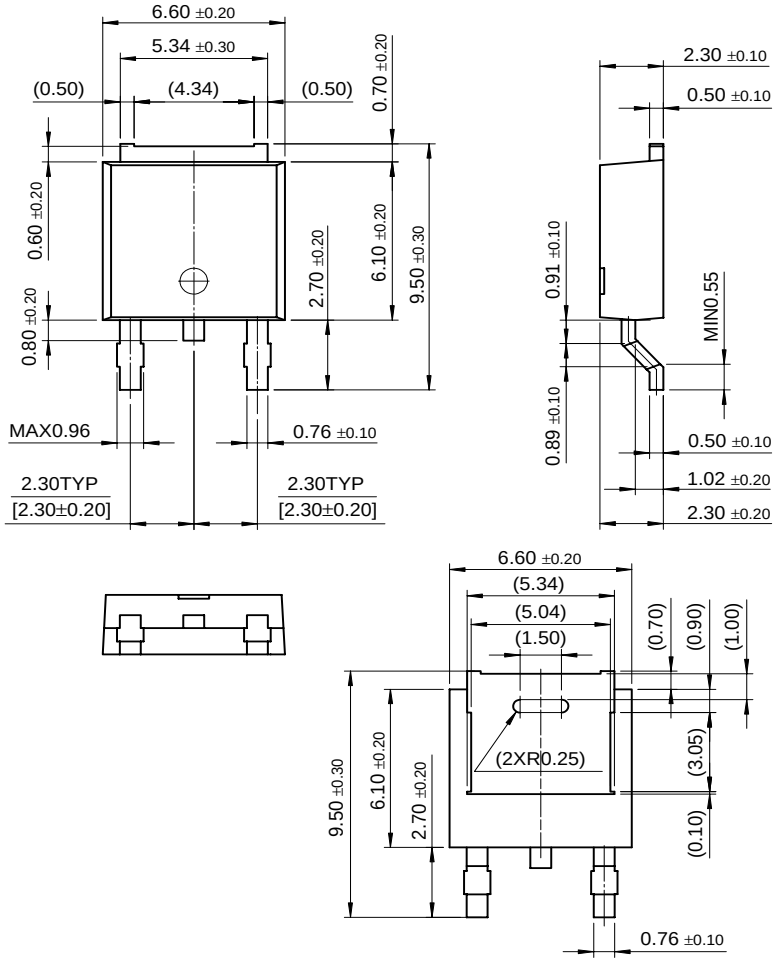


Figure 7. Power Derating

Package Demensions

D-PAK



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.

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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.
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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.

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Features

- High DC Current Gain
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- Lead Formed for surface Mount Applications (No Suffix)
- Straight Lead (I-PAK, "-I" Suffix)
- Electrically Similar to Popular TIP117
- Complementary to KSH127

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Applications

D-PAK for Surface Mount

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
KSH122TM	Full Production	$0.336	TO-252(DPAK)	2	TAPE REEL
KSH122TF	Full Production	$0.336	TO-252(DPAK)	2	TAPE REEL

* 1,000 piece Budgetary Pricing

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Product	Product status	Pricing*	Package type	Leads	Packing method
KSH122ITU	Full Production	$0.336	TO-251(IPAK)	3	RAIL

* 1,000 piece Budgetary Pricing

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