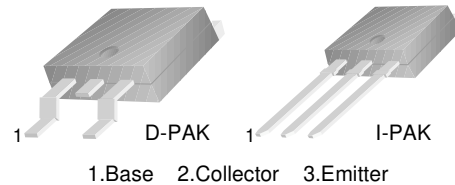


KSH112

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 TIP112

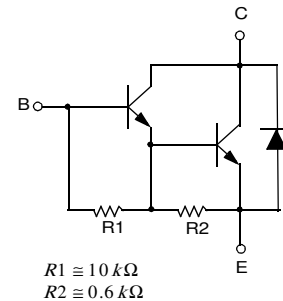


NPN Silicon Darlington Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ 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)	2	A
I_{CP}	Collector Current (Pulse)	4	A
I_B	Base Current	50	mA
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	20	W
	Collector Dissipation ($T_a=25^\circ\text{C}$)	1.75	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

Equivalent Circuit



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

Symbol	Parameter	Test Condition	Min.	Max.	Units
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	$I_C = 30\text{mA}, I_B = 0$	100		V
I_{CEO}	Collector Cut-off Current	$V_{CE} = 50\text{V}, I_B = 0$		20	μA
I_{CBO}	Collector Cut-off Current	$V_{CB} = 100\text{V}, I_B = 0$		20	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$		2	mA
h_{FE}	* DC Current Gain	$V_{CE} = 3\text{V}, I_C = 0.5\text{A}$	500		
		$V_{CE} = 3\text{V}, I_C = 2\text{A}$	1000	12K	
		$V_{CE} = 3\text{V}, I_C = 4\text{A}$	200		
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 8\text{mA}$		2	V
		$I_C = 4\text{A}, I_B = 40\text{mA}$		3	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = 4\text{A}, I_B = 40\text{mA}$		4	V
$V_{BE(on)}$	* Base-Emitter On Voltage	$V_{CE} = 3\text{A}, I_C = 2\text{A}$		2.8	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 0.75\text{A}$	25		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0$ $f = 0.1\text{MHz}$		100	pF

* Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Characteristics

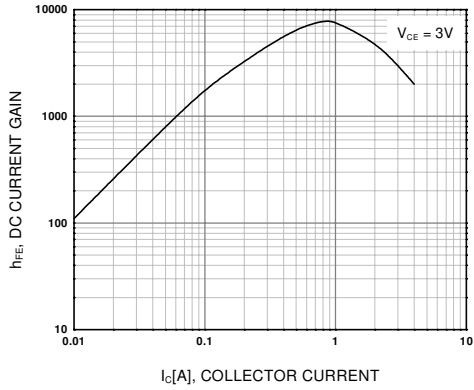


Figure 1. DC current Gain

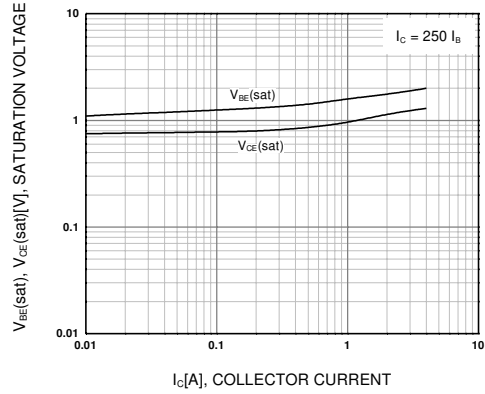


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

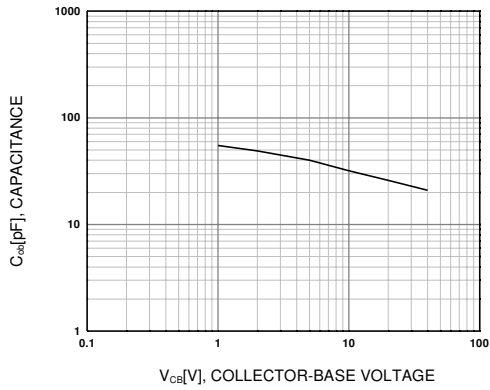


Figure 3. Collector Output Capacitance

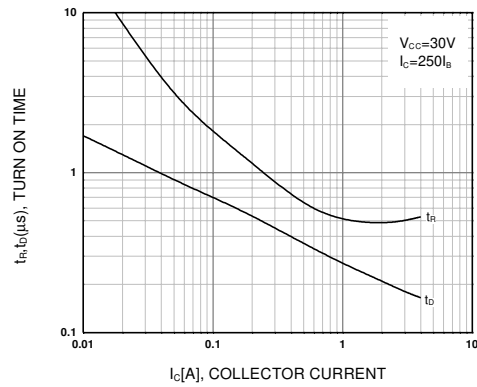


Figure 4. Turn On Time

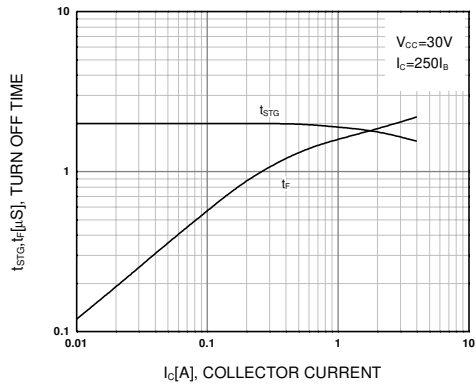


Figure 5. Turn Off Time

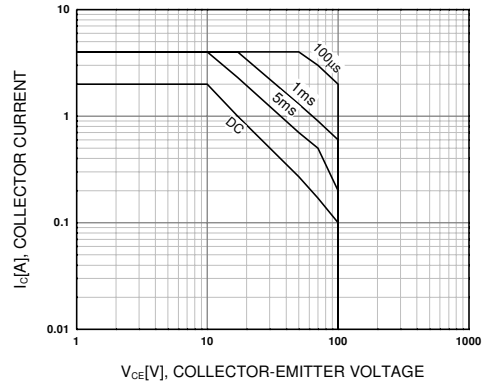


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

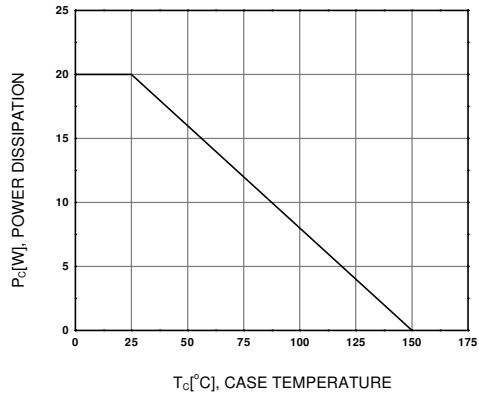
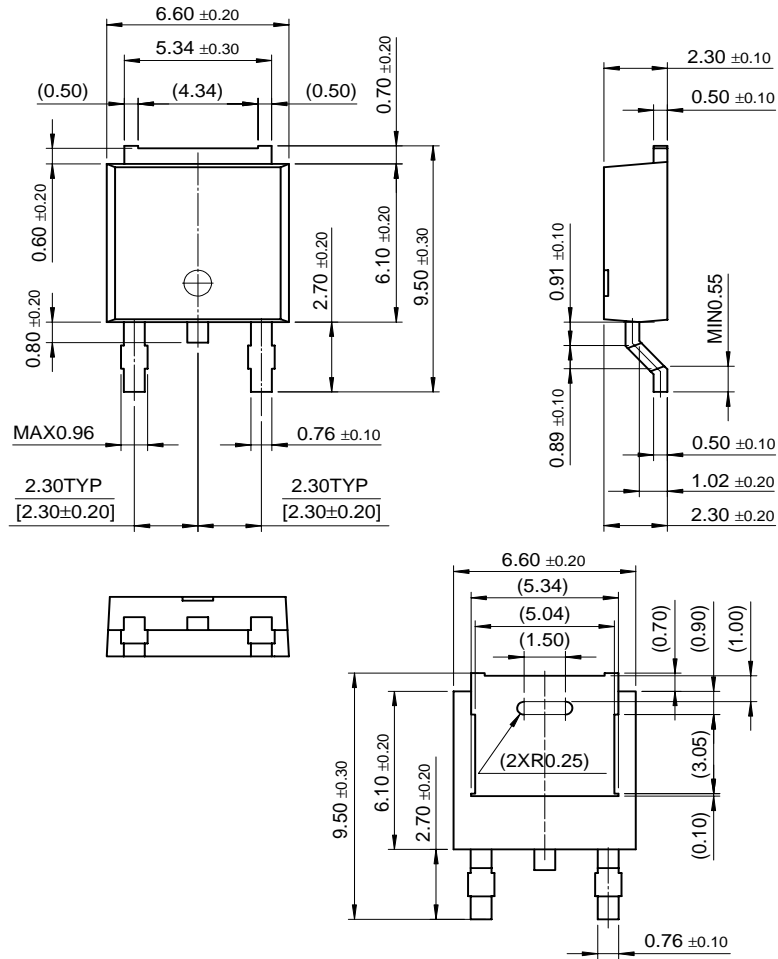


Figure 7. Power Derating

Package Dimensions

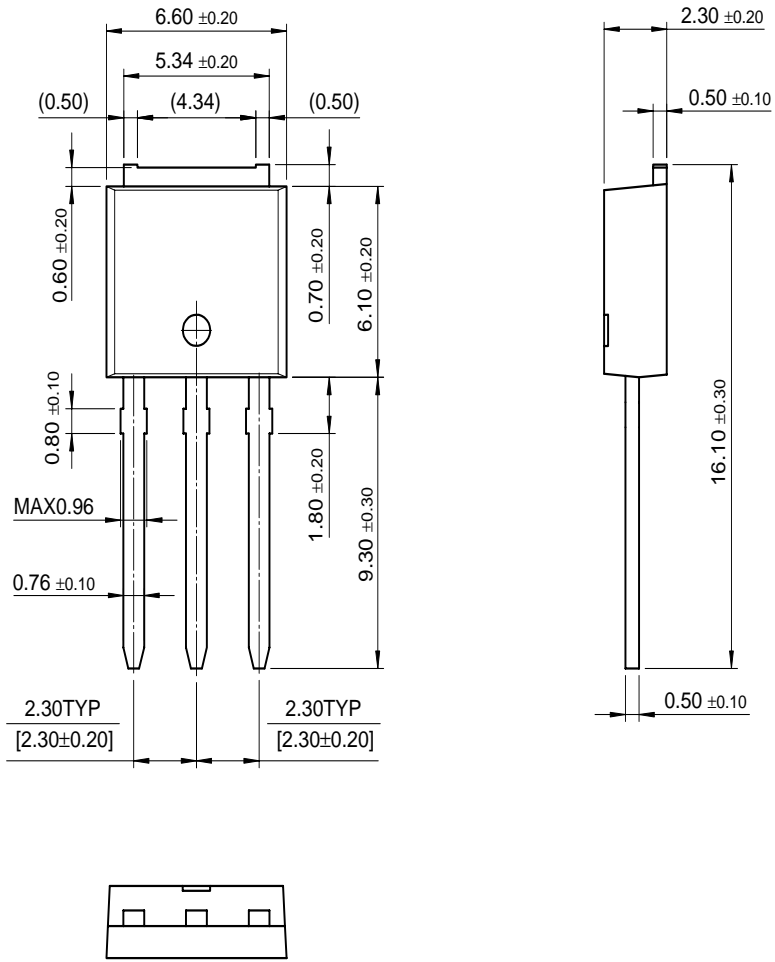
D-PAK



Dimensions in Millimeters

Package Dimensions (Continued)

I-PAK



Dimensions in Millimeters

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
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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.
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KSH112

NPN Silicon Darlington Transistor

Contents

- [Features](#)
- [Applications](#)
- [Product status/pricing/packaging](#)
- [Order Samples](#)

• [Qualification Support](#)

Features

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[back to top](#)

Applications

D-PAK for Surface Mount

[back to top](#)

[Product status/pricing/packaging](#)

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Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
KSH112GTM_SB82051	Full Production	Full Production	N/A	TO-252(DPAK)	2	TAPE REEL	Line 1: KSH Line 2: 112 Line 3: &3
KSH112TF	Full Production	Full Production	\$0.432	TO-252(DPAK)	2	TAPE REEL	Line 1: KSH Line 2: 112 Line 3: &3

KSH112TM	Full Production		\$0.432	TO-252(DPAK)	2	TAPE REEL	Line 1: KSH Line 2: 112 Line 3: &3
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* 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 KSH112 is available. [Click here for more information](#).

[back to top](#)

Qualification Support

Click on a product for detailed qualification data

Product
KSH112GTM_SB82051
KSH112TF
KSH112TM

[back to top](#)

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