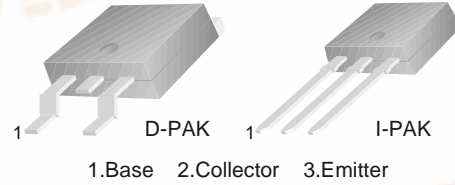


FAIRCHILD
SEMICONDUCTOR®

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

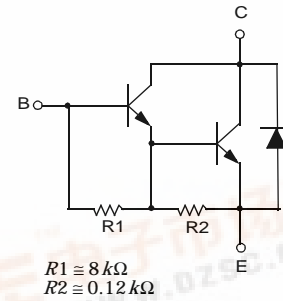


NPN Silicon Darlington Transistor

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)	8	A
I_{CP}	Collector Current (Pulse)	16	A
I_B	Base Current	120	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	$V_{CE} = 50\text{V}, I_B = 0$		10	μA
I_{CBO}	Collector Cut-off Current	$V_{CB} = 100\text{V}, I_E = 0$		10	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$		2	mA
h_{FE}	*DC Current Gain	$V_{CE} = 4\text{V}, I_C = 4\text{A}$ $V_{CE} = 4\text{V}, V_{EB} = 8\text{A}$	1000	12K	
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 4\text{A}, I_B = 16\text{mA}$ $I_C = 8\text{A}, I_B = 80\text{mA}$		2 4	V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$I_C = 8\text{A}, I_B = 80\text{mA}$		4.5	V
$V_{BE(on)}$	*Base-Emitter On Voltage	$V_{CE} = 4\text{V}, I_C = 4\text{A}$		2.8	V
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0$ $f = 0.1\text{MHz}$		200	pF

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

Typical Characteristics

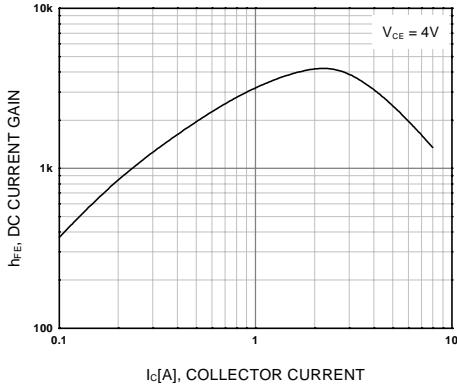


Figure 1. DC current Gain

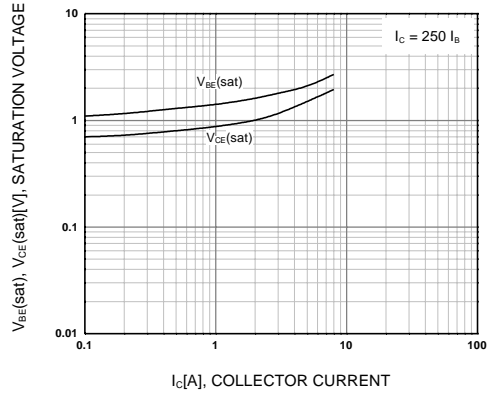


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

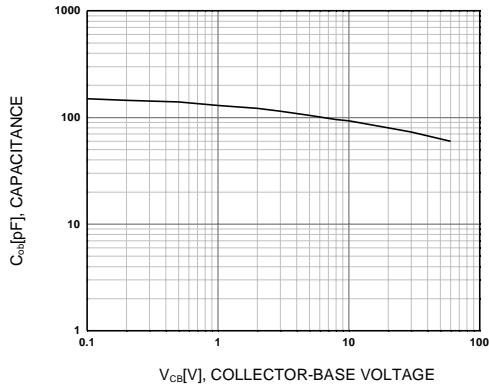


Figure 3. Collector Output Capacitance

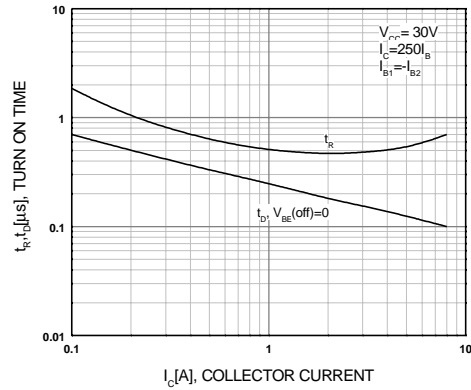


Figure 4. Turn On Time

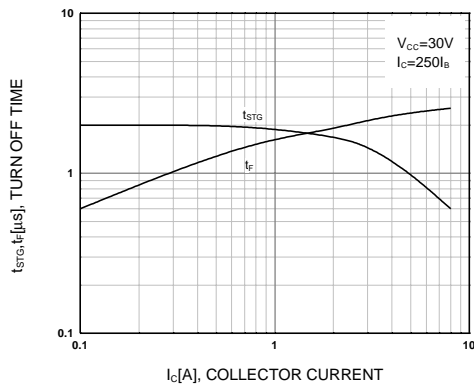


Figure 5. Turn Off Time

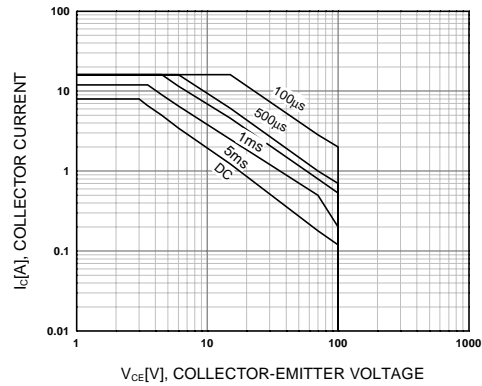


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

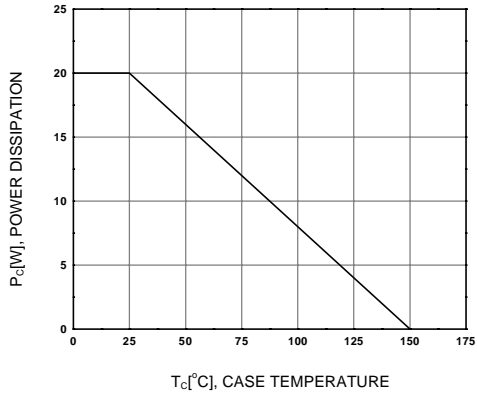
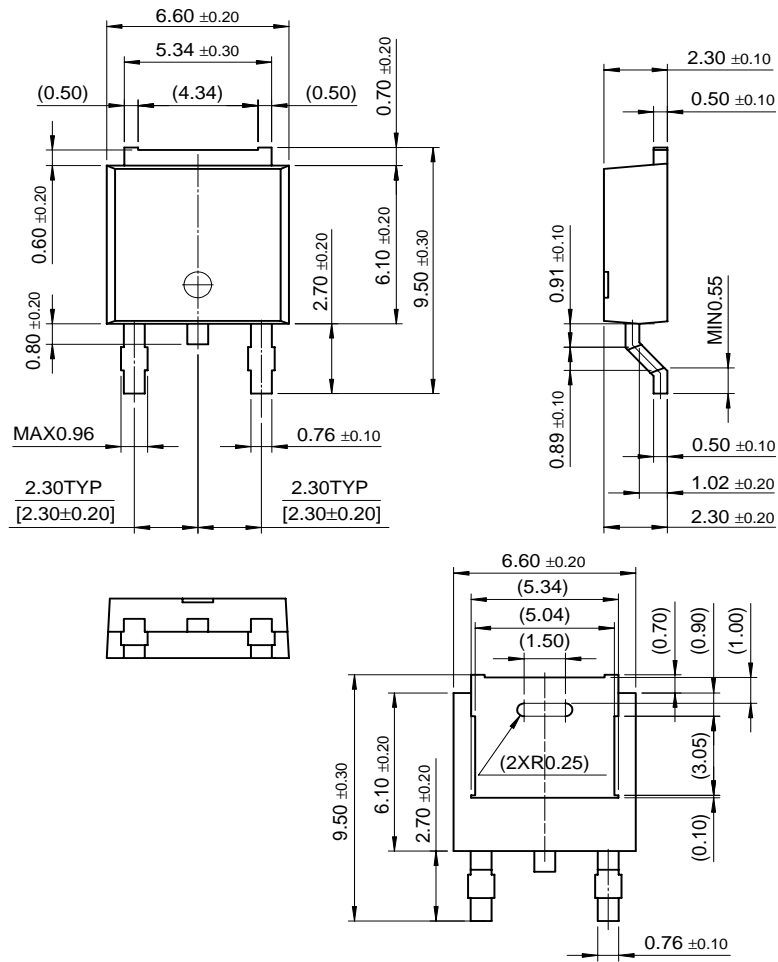


Figure 7. Power Derating

Package Dimensions

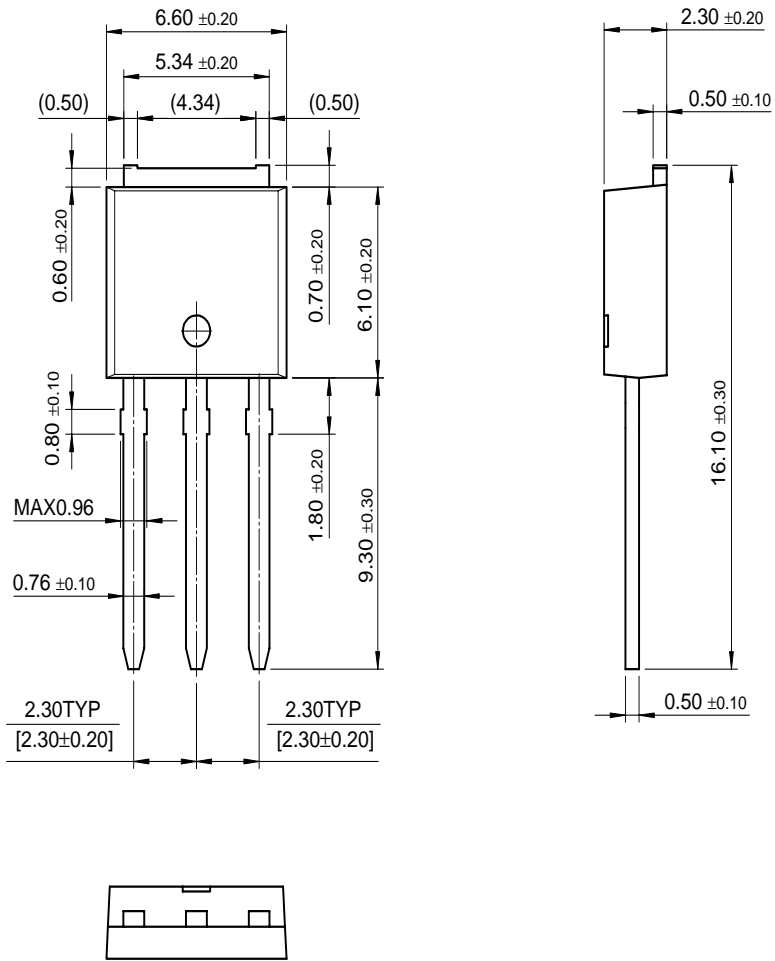
D-PAK



Dimensions in Millimeters

Package Dimensions (Continued)

I-PAK



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOMET™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E ² CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I ² C™	OCX™	RapidConfigure™	UHC™
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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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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.
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