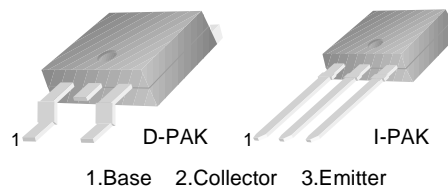


KSH42C

KSH42C

General Purpose Amplifier Low Speed Switching Applications

- Lead Formed for Surface Mount Application (No Suffix)
- Straight Lead (I-PAK, "-I" Suffix)
- Electrically Similar to Popular TIP42C



PNP Epitaxial Silicon 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)	-6	A
I_{CP}	Collector Current (Pulse)	-10	A
I_B	Base Current	-2	A
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	$^\circ\text{C}$

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	$V_{CE} = -60\text{V}$, $I_B = 0$		-50	μA
I_{CES}	Collector Cut-off Current	$V_{CE} = -100\text{V}$, $V_{BE} = 0$		-10	μA
I_{EBO}	Emitter Cut-off Current	$V_{BE} = -5\text{V}$, $I_C = 0$		-0.5	mA
h_{FE}	* DC Current Gain	$V_{CE} = -4\text{V}$, $I_C = -0.3\text{A}$ $V_{CE} = -4\text{V}$, $I_C = -3\text{A}$	30 15	75	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = -6\text{A}$, $I_B = -600\text{mA}$		-1.5	V
$V_{BE(on)}$	* Base-Emitter On Voltage	$V_{CE} = -6\text{A}$, $I_C = -4\text{A}$		-2	V
f_T	Current Gain Bandwidth Product	$V_{CE} = -10\text{V}$, $I_C = -500\text{mA}$	3		MHz

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

Typical Characteristics

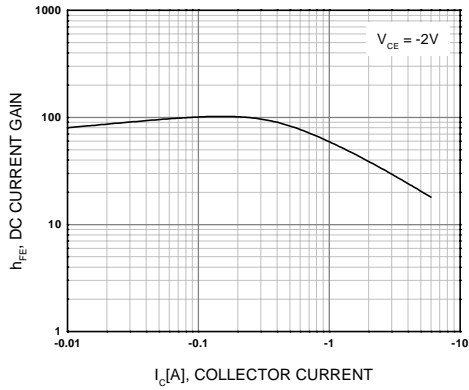


Figure 1. DC current Gain

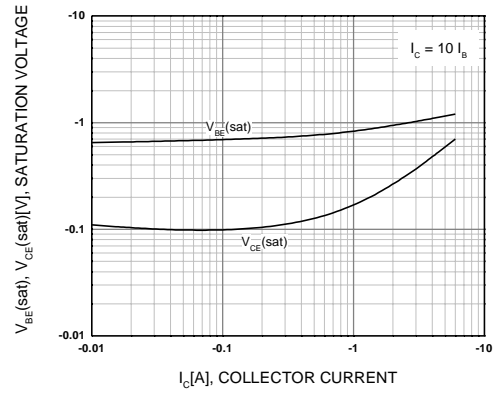


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

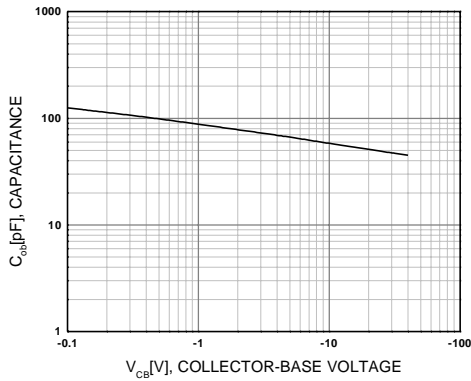


Figure 3. Collector Capacitance

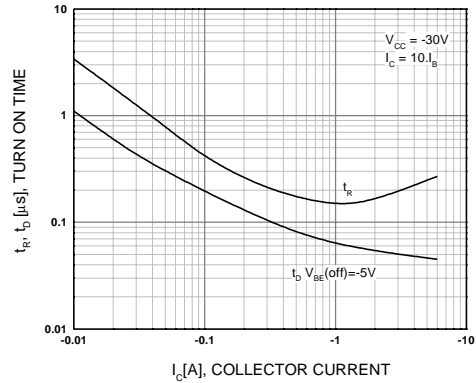


Figure 4. Turn On Time

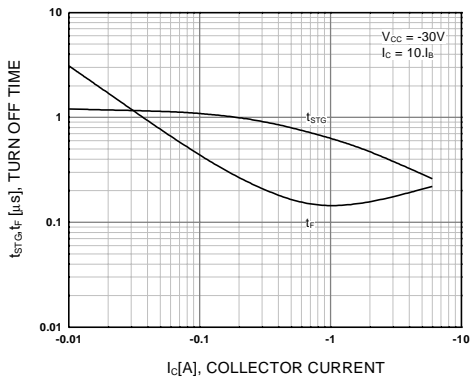


Figure 5. Turn Off Time

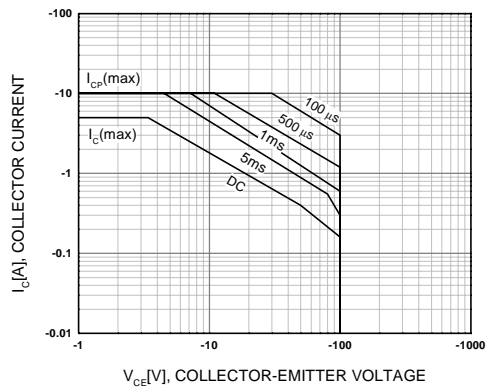


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

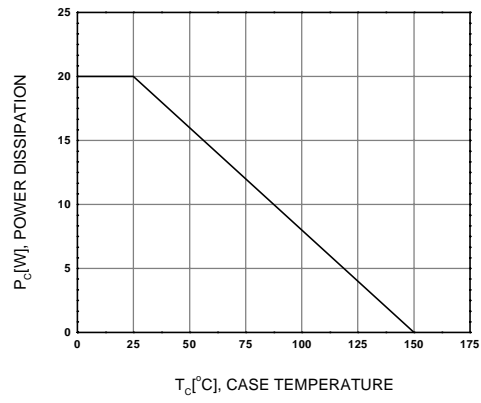
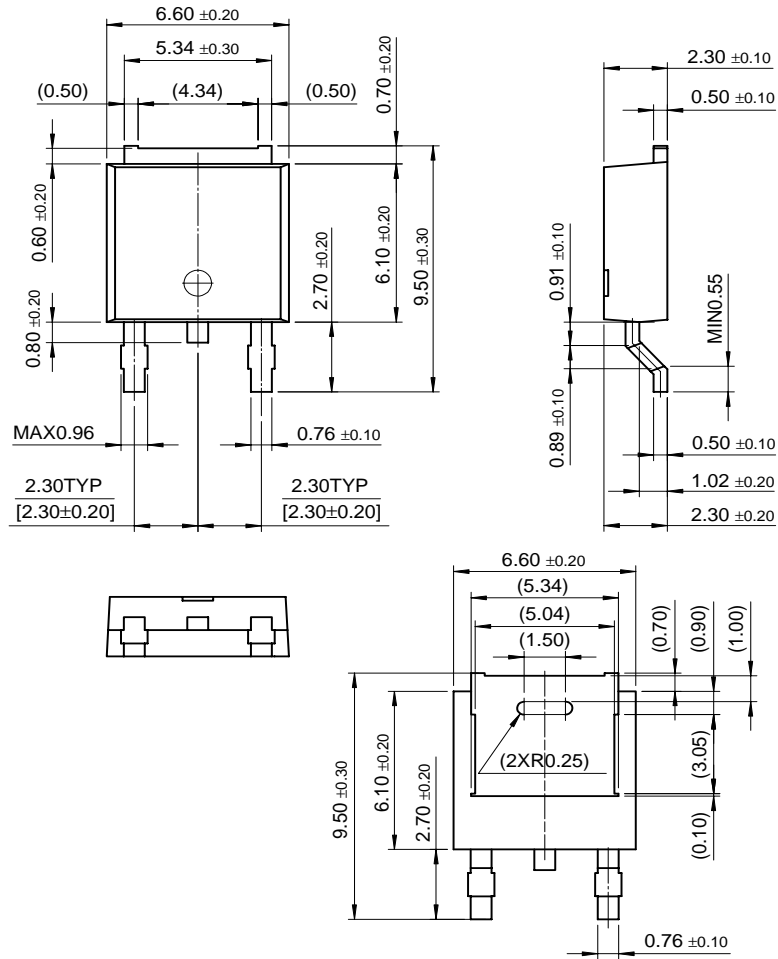


Figure 7. Power Derating

Package Dimensions

D-PAK



Dimensions in Millimeters

Technical drawing of the 2.30TYP connector showing three views: top, side, and front views. Dimensions are in millimeters.

Top View Dimensions:

- Overall width: 6.60 ± 0.20
- Inner width: 5.34 ± 0.20
- Side flange width (left): 0.50
- Side flange width (right): 0.50
- Top flange height: 0.60 ± 0.20
- Central hole diameter: $\varnothing 0.76 \pm 0.10$
- Pin height (left): 0.80 ± 0.10
- Pin height (middle): 1.80 ± 0.20
- Pin height (right): 1.80 ± 0.20
- Overall height (left): 6.10 ± 0.20
- Overall height (right): 9.30 ± 0.30
- Pin length (left): $MAX 0.96$
- Pin length (middle): 0.76 ± 0.10
- Pin length (right): 0.76 ± 0.10

Side View Dimensions:

- Overall width: 2.30 ± 0.20
- Side flange width: 0.50 ± 0.10
- Overall height: 16.10 ± 0.30

Front View Dimensions:

- Overall width: 2.30 TYP
- Width tolerance: $[2.30 \pm 0.20]$

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