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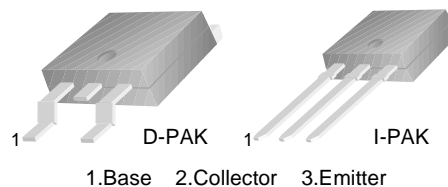
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# KSH127

KSH127

## D-PAK for Surface Mount Applications

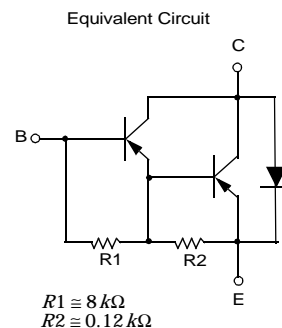
- High DC Current Gain
- Built-in a Damper Diode at E-C
- Lead Formed for Surface Mount Applications (No Suffix)
- Straight Lead (I-PAK, " - I " Suffix)
- Electrically Similar to Popular TIP127
- Complement to KSH122



## PNP 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	$^\circ\text{C}$



### 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	$\mu\text{A}$
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -100\text{V}, I_E = 0$		- 10	$\mu\text{A}$
$I_{EBO}$	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 100	12K	
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = -4\text{A}, I_B = -16\text{mA}$		- 2	V
		$I_C = -8\text{A}, I_B = -80\text{mA}$		- 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	$V_{CB} = -10\text{V}, I_E = 0$ $f = 0.1\text{MHz}$		300	pF

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

## Typical Characteristics

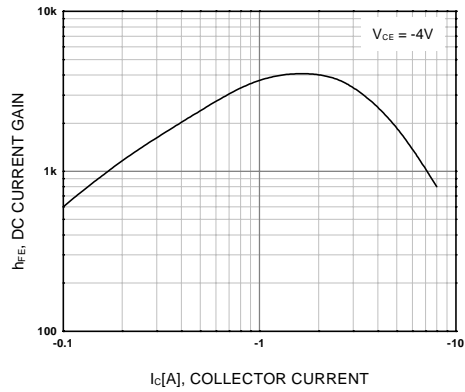


Figure 1. DC current Gain

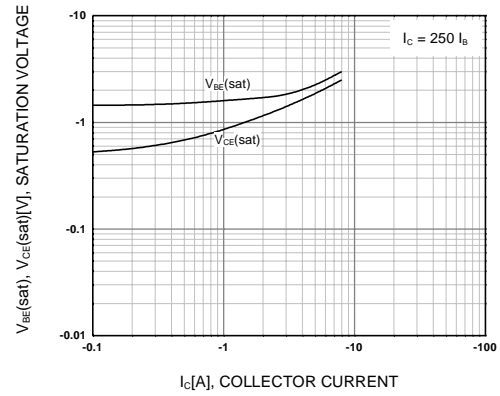


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

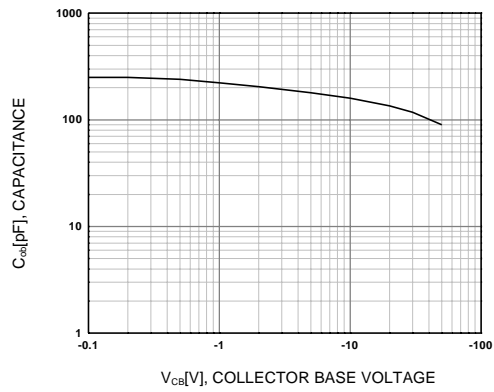


Figure 3. Collector Output Capacitance

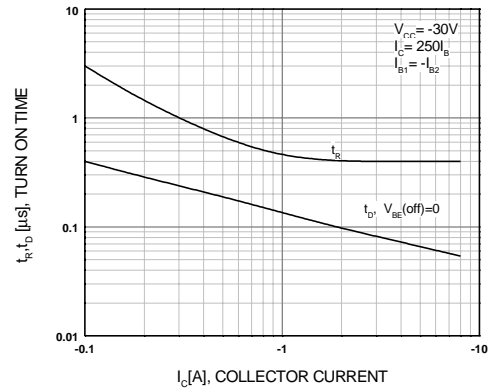


Figure 4. Turn On Time

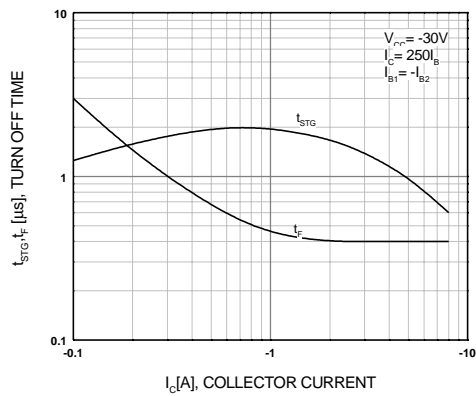


Figure 5. Turn Off Time

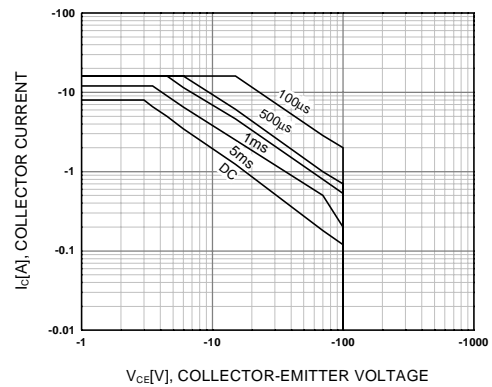
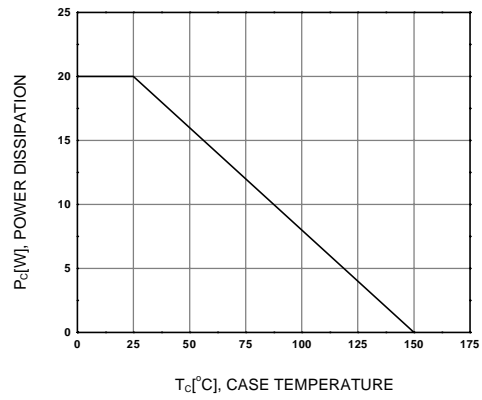
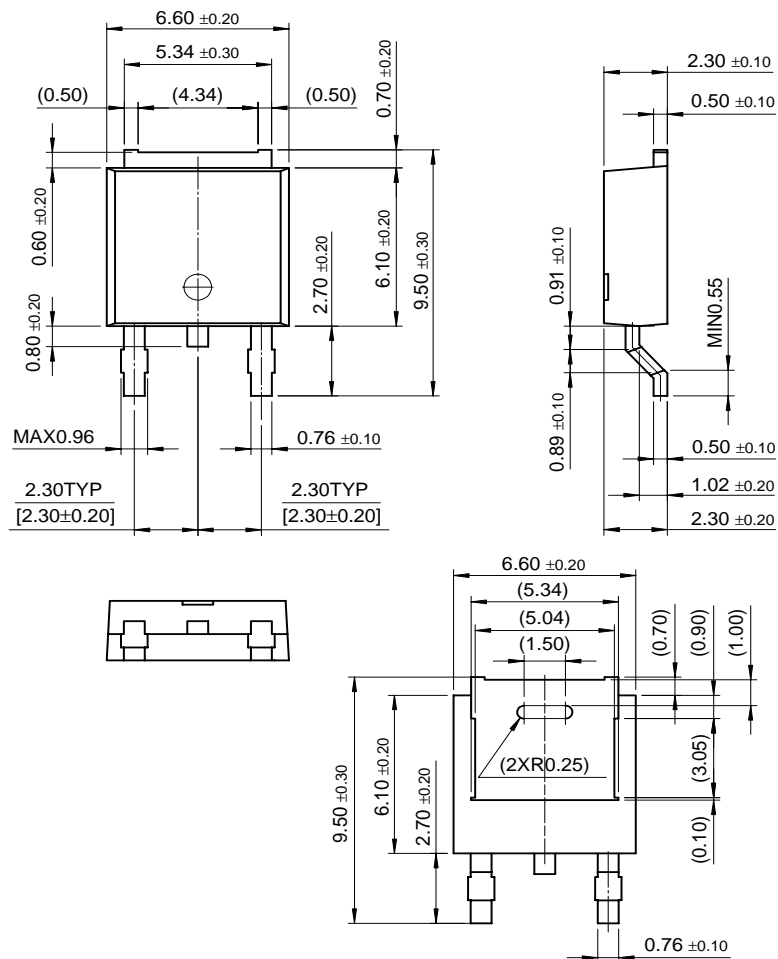


Figure 6. Safe Operating Area

**Typical Characteristic** (Continued)**Figure 7. Power Derating**

## D-PAK



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Technical drawing of the 2.30TYP connector showing front, side, and top views with dimensions in millimeters.

**Front View Dimensions:**

- Overall width:  $6.60 \pm 0.20$
- Inner width:  $5.34 \pm 0.20$
- Flange width (left):  $0.50$
- Flange width (right):  $0.50$
- Flange thickness:  $0.60 \pm 0.20$
- Body height:  $0.70 \pm 0.20$
- Total height:  $6.10 \pm 0.20$
- Pin diameter:  $0.80 \pm 0.10$
- Pin length:  $1.80 \pm 0.20$
- Pin spacing (center-to-center):  $1.80 \pm 0.20$
- Pin length (including body):  $9.30 \pm 0.30$
- Pin tip diameter:  $0.76 \pm 0.10$
- Pin tip length:  $\text{MAX} 0.96$
- Pin diameter (bottom):  $0.76 \pm 0.10$

**Side View Dimensions:**

- Overall width:  $2.30 \pm 0.20$
- Flange width:  $0.50 \pm 0.10$
- Body height:  $16.10 \pm 0.30$
- Pin diameter:  $0.50 \pm 0.10$

**Top View Dimensions:**

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

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