

**isc Silicon NPN Darlington Power Transistor**
**KSD986**
**DESCRIPTION**

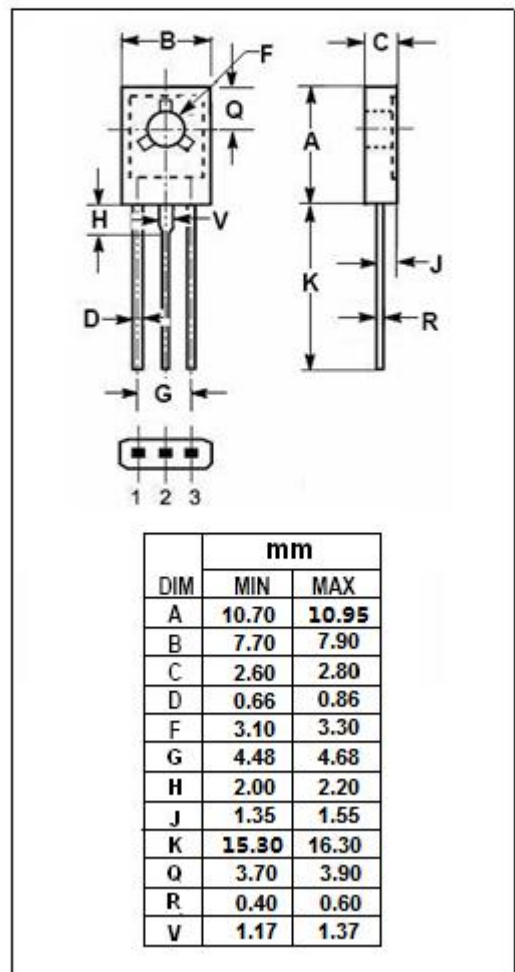
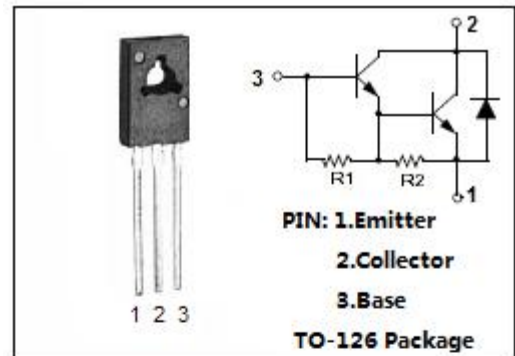
- High DC Current Gain-  
:  $h_{FE} = 2000(\text{Min}) @ I_C = 1\text{A}$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(\text{SUS})} = 80\text{V}(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(\text{sat})} = 1.5\text{V}(\text{Max}) @ I_C = 1\text{A}$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for general-purpose amplifier and low-speed switching applications

**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	150	V
$V_{CEO}$	Collector-Emitter Voltage	80	V
$V_{EBO}$	Emitter-Base Voltage	8	V
$I_C$	Collector Current-Continuous	1.5	A
$I_{CM}$	Collector Current-Pulse	3.0	A
$I_B$	Base Current	0.15	A
$P_C$	Collector Power Dissipation $T_a=25^\circ\text{C}$	1.0	W
	Collector Power Dissipation $T_c=25^\circ\text{C}$	10	
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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**ELECTRICAL CHARACTERISTICS**

 T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1A; I <sub>B</sub> = 1mA			1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 1A; I <sub>B</sub> = 1mA			2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 60V; I <sub>E</sub> = 0			10	μ A
I <sub>CER</sub>	Collector Cutoff Current	V <sub>CE</sub> =60V; R <sub>BE</sub> =51 Ω ; T <sub>C</sub> =125°C			1.0	mA
I <sub>CEX</sub>	Collector Cutoff Current	V <sub>CE</sub> = 60V; V <sub>BE(off)</sub> = -1.5A			10	μ A
		V <sub>CE</sub> = 60V; V <sub>BE(off)</sub> = -1.5A T <sub>C</sub> =125°C			1.0	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			2.0	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 2V	1000			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 1A; V <sub>CE</sub> = 2V	2000		30000	

**Switching Times**

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> =1.0A; I <sub>B1</sub> =-I <sub>B2</sub> =1.0mA V <sub>CC</sub> =50V; R <sub>L</sub> =50 Ω		0.5		μ s
t <sub>stg</sub>	Storage Time			1.0		μ s
t <sub>f</sub>	Fall Time			1.0		μ s

**◆ h<sub>FE-2</sub> Classifications**

R	O	Y
2000-5000	4000-10000	8000-30000

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