

## isc Silicon NPN Darlington Power Transistor

KSH122I

## DESCRIPTION

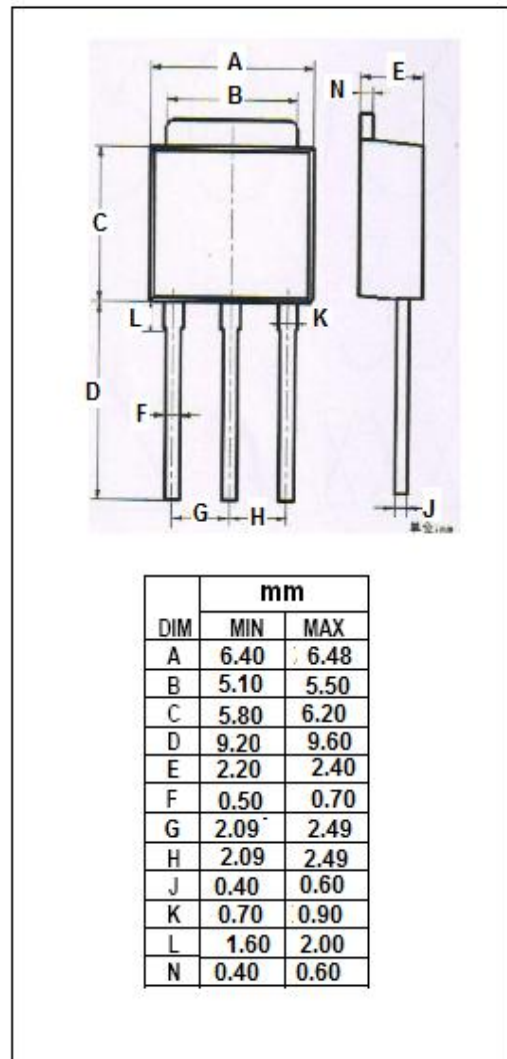
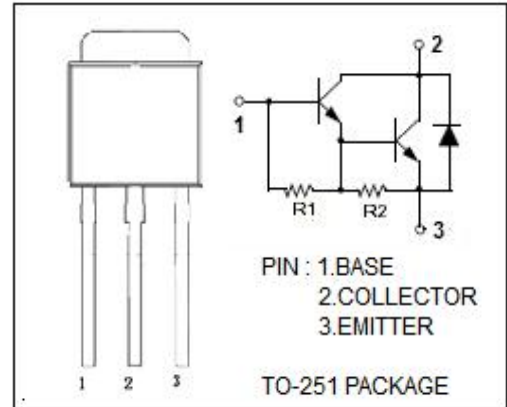
- High DC current gain
- Built-in a damper diode at E-C
- Electrically similar to popular TIP122
- DPAK for surface mount applications
- Lead formed for surface mount applications(NO suffix)
- Straight lead(IPAK, “-I” suffix)
- Minimum Lot-to-Lot variations for robust device performance and reliable 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	100	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	8	A
$I_{CP}$	Collector Current-Pulse	16	A
$I_B$	Base Current-Continuous	120	mA
$P_C$	Collector Power Dissipation $T_a=25^{\circ}\text{C}$	1.75	W
	Collector Power Dissipation $T_c=25^{\circ}\text{C}$	20	
$T_J$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^{\circ}\text{C}$



**isc Silicon NPN Darlington Power Transistor****KSH122I****ELECTRICAL CHARACTERISTICS****T<sub>c</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE(sat)-1*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 16mA			2.0	V
V <sub>CE(sat)-2*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 8A; I <sub>B</sub> = 80mA			4.0	V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> =8A; I <sub>B</sub> = 80mA			4.5	V
V <sub>BE(on)*</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 4A; V <sub>CE</sub> = 4V			2.8	V
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	100			V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 100V; I <sub>E</sub> = 0			10	uA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			2	mA
h <sub>FE-1*</sub>	DC Current Gain	I <sub>C</sub> = 4A; V <sub>CE</sub> = 4V	1K		12K	
h <sub>FE-2*</sub>	DC Current Gain	I <sub>C</sub> = 8A; V <sub>CE</sub> = 4V	100			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f= 1.0MHz		200		pF

\*:Pulse test PW≤300us,duty cycle≤2%

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