ON Semiconductor

Is Now

Onsemi

To learn more about onsemi[™], please visit our website at <u>www.onsemi.com</u>

onsemi and ONSEMI: and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "onsemi" or its affiliates and/or subsidiaries in the United States and/or other countries. onsemi owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of onsemi product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. onsemi reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and onsemi makes no warranty, representation or guarantee regarding the accuracy of the information, product factures, availability, functionality, or suitability of its products for any particular purpose, nor does onsemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using onsemi products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by onsemi. "Typical" parameters which may be provided in onsemi data sheets and/or or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application is the human body. Should Buyer purchase or use onsemi products for any such unintended or unauthorized application, Buyer shall indemnify and hold onsemi and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application, Buyer shall indemnify and hold ons



ON Semiconductor®

KSH122 / KSH122I NPN Silicon Darlington Transistor

Features

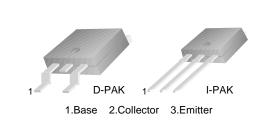
- D-PAK for Surface Mount Applications
- High DC Current Gain
- Built-in Damper Diode at E-C
- Lead Formed for Surface Mount Applications (No Suffix)
- Straight Lead (I-PAK, " I " Suffix)
- Electrically Similar to Popular TIP122
- Complement to KSH127

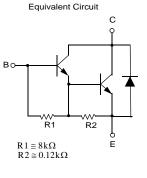
Applications

- Switching Regulators
- Converters
- Power Amplifiers



Designed for general-purpose power and switching, such as output or driver stages in applications.





Ordering Information

Part Number	Top Mark	Package	Packing Method
KSH122TF	KSH122	TO-252 3L (DPAK)	Tape and Reel
KSH122TM	KSH122	TO-252 3L (DPAK)	Tape and Reel
KSH122ITU	KSH122-I	TO-251 3L (IPAK)	Rail

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_c = 25^{\circ}C$ unless otherwise noted.

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	
Ι _C	Collector Current (DC)	8	А	
I _{CP}	Collector Current (Pulse)	16	А	
Ι _Β	Base Current	120	mA	
P _C	Collector Dissipation (T _C =25°C)	20.00	W	
	Collector Dissipation (T _A =25°C)	1.75	vv	
ТJ	Junction Temperature	150	°C	
T _{STG}	Storage Temperature	- 65 to 150	°C	

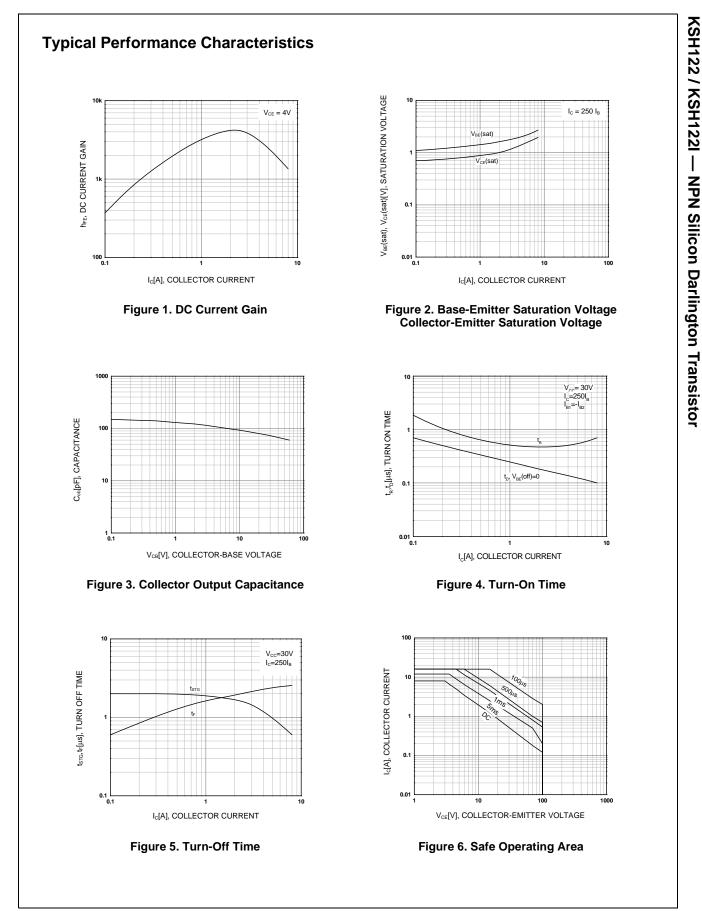
Electrical Characteristics

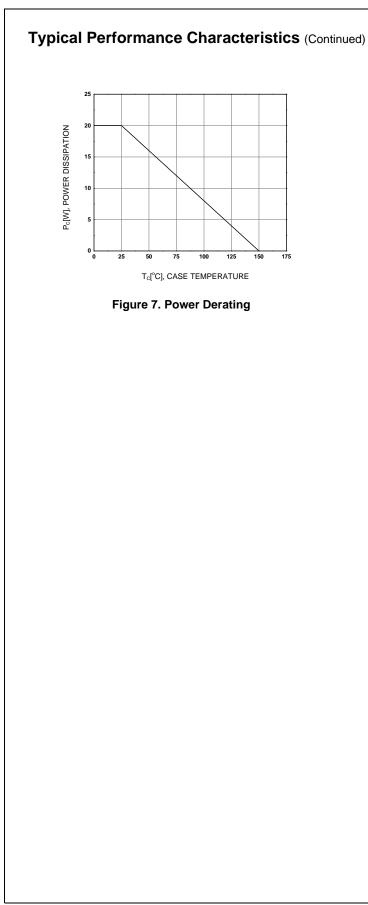
Values are at $T_A = 25^{\circ}C$ unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
V _{CEO} (sus)	Collector-Emitter Sustaining Voltage ⁽¹⁾	I _C = 30 mA, I _B = 0	100			V
I _{CEO}	Collector Cut-Off Current	V _{CE} = 50 V, I _B =0			10	μΑ
I _{CBO}	Collector Cut-Off Current	$V_{CB} = 100 \text{ V}, I_E = 0$			10	μA
I _{EBO}	Emitter Cut-Off Current	$V_{EB} = 5 V, I_{C} = 0$			2	mA
h _{FE}	DC Current Gain ⁽¹⁾	$V_{CE} = 4 V, I_{C} = 4 A$	1000		12000	
		$V_{CE} = 4 \text{ V}, I_{C} = 8 \text{ A}$	100			
V _{CE} (sat)	Collector-Emitter Saturation Voltage ⁽¹⁾	I _C = 4 A, I _B = 16 mA			2	V
		I _C = 8 A, I _B = 80 mA			4	v
V _{BE} (sat)	Base-Emitter Saturation Voltage ⁽¹⁾	I _C = 8 A, I _B = 80 mA			4.5	V
V _{BE} (on)	Base-Emitter On Voltage ⁽¹⁾	$V_{CE} = 4 V, I_{C} = 4 A$			2.8	V
C _{ob}	Output Capacitance	$V_{CB} = 10 \text{ V}, \text{ I}_{E} = 0, \text{ f} = 0.1 \text{ MHz}$			200	pF

Note:

1. Pulse test: $pw \leq 300~\mu s,~duty~cycle \leq 2\%.$





ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at <u>www.onsemi.com/site/pdf/Patent-Marking.pdf</u>. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor haves against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death a

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: orderlit@onsemi.com N. American Technical Support: 800–282–9855 Toll Free USA/Canada Europe, Middle East and Africa Technical Support: Phone: 421 33 790 2910

Japan Customer Focus Center Phone: 81-3-5817-1050 ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

Semiconductor Components Industries, LLC