

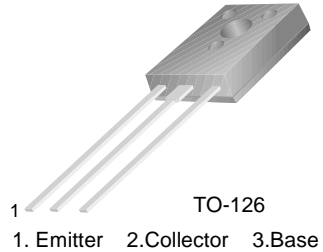


KSA1142

KSA1142

Audio Frequency Power Amplifier High Frequency Power Amplifier

- Complement to KSC2682



PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Ratings	Units
V_{CBO}	Collector-Base Voltage	- 180	V
V_{CEO}	Collector-Emitter Voltage	- 180	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current	- 100	mA
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1.2	W
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	8	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	$V_{CB} = - 180\text{V}, I_E = 0$			- 1	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = - 3\text{V}, I_C = 0$			- 1	μA
h_{FE1} h_{FE2}	* DC Current Gain	$V_{CE} = - 5\text{V}, I_C = - 1\text{mA}$ $V_{CE} = - 5\text{V}, I_C = - 10\text{mA}$	90 100	200 200	320	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = - 50\text{mA}, I_B = - 5\text{mA}$		- 0.16	- 0.5	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = - 50\text{mA}, I_B = - 5\text{mA}$		- 0.8	- 1.5	V
f_T	Current Gain Bandwidth Product	$V_{CE} = - 10\text{V}, I_C = - 20\text{mA}$		180		MHz
C_{ob}	Output Capacitance	$V_{CB} = - 10\text{V}, I_E = 0, f=1\text{MHz}$		4.5	7	pF
NF	Noise Figure	$V_{CE} = - 10\text{V}, I_C = - 1\text{mA}$ $R_S = 10\text{k}\Omega, f = 1\text{MHz}$		4		dB

* Pulse Test: $PW \leq 350\mu\text{s}$, Duty Cycle $\leq 2\%$ Pulsed

h_{FE} Classification

Classification	O	Y
h_{FE2}	100 ~ 200	160 ~ 320

Typical Characteristics

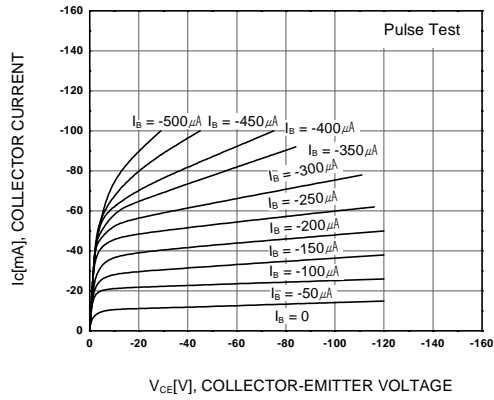


Figure 1. Static Characteristic

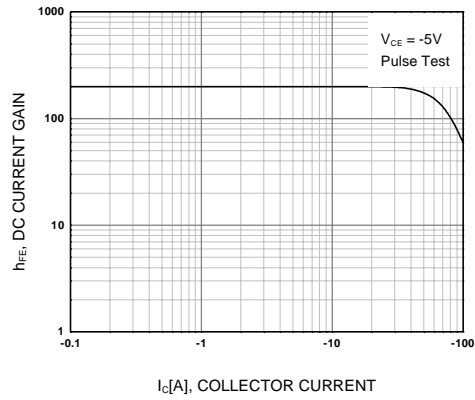


Figure 2. DC current Gain

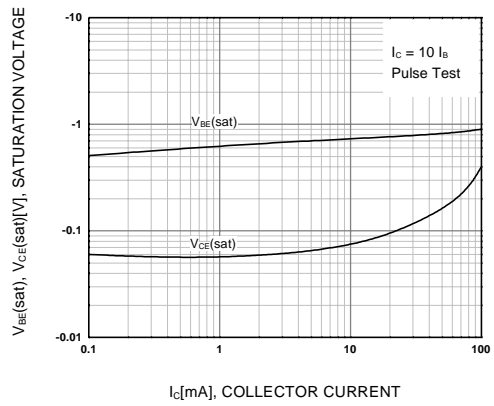


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

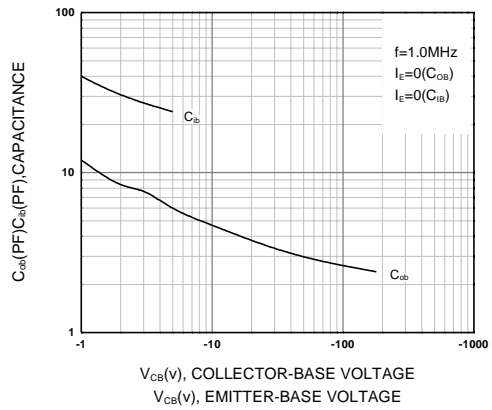


Figure 4. Collector Output Capacitance

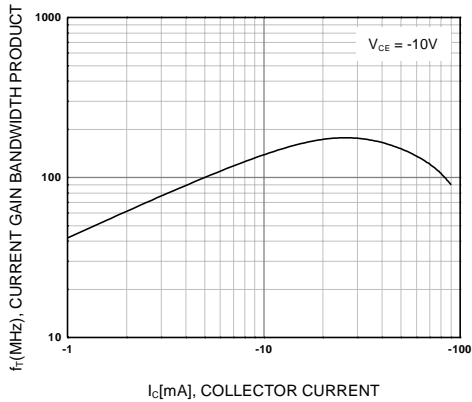


Figure 5. Current Gain Bandwidth Product

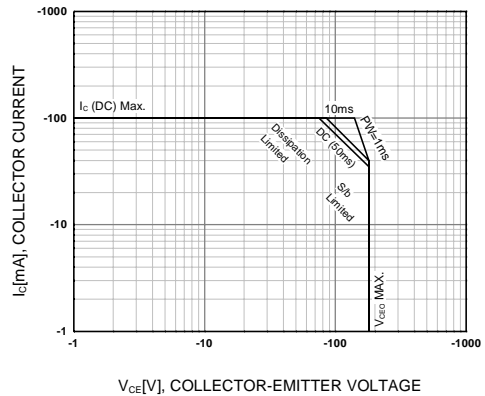


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

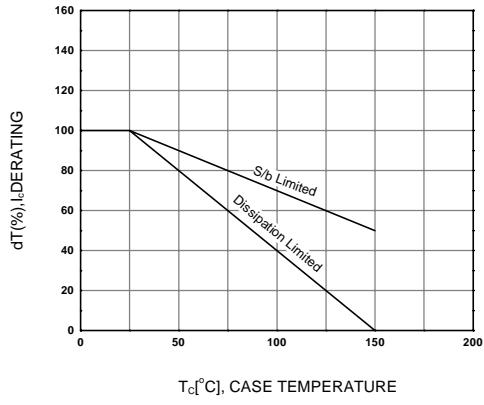


Figure 7. Derating Curve of Safe Operating Areas

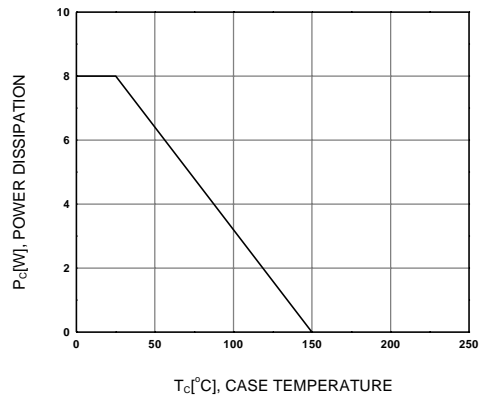
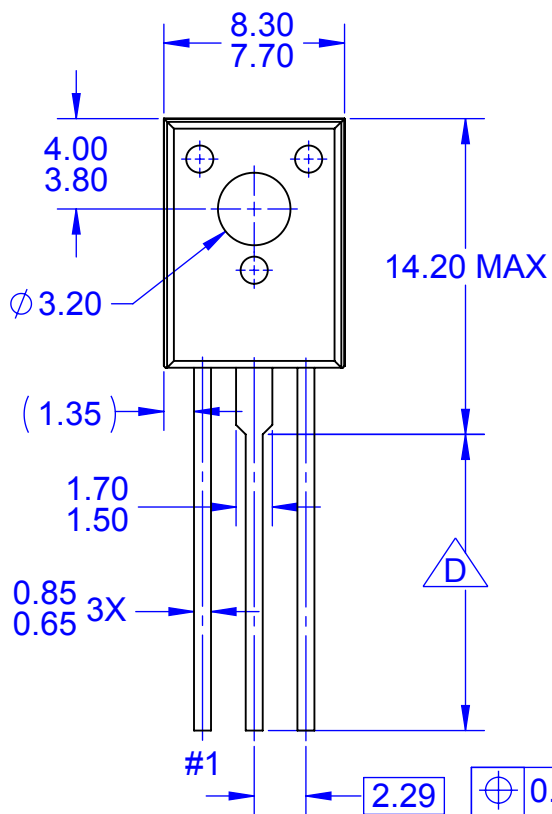
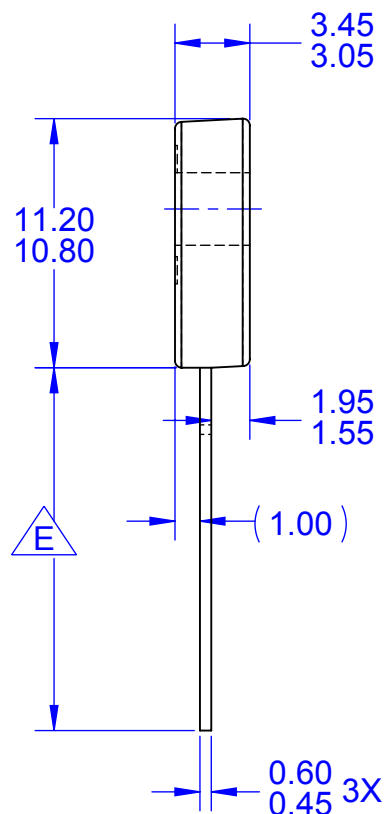


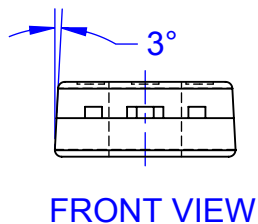
Figure 8. Power Derating



TOP VIEW



SIDE VIEW



FRONT VIEW

PRODUCTION CODE	TERMINAL LENGTH "D"	TERMINAL LENGTH "E"
TSSTU	3.45 - 4.05	6.45-7.45
TSTU	2.36 - 2.96	5.36-6.36
NONE (STD LENGTH)	12.76 - 13.36	15.76-16.76

NOTES:

- A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS

$\triangle D$ FOR TERMINAL LENGTH "D", REFER TO TABLE

$\triangle E$ FOR TERMINAL LENGTH "E", REFER TO TABLE

F. DRAWING FILENAME: MKT-TO126AArev2



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 www.onsemi.com/site/pdf/Patent-Marking.pdf. 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 nor the 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 products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor 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 use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

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