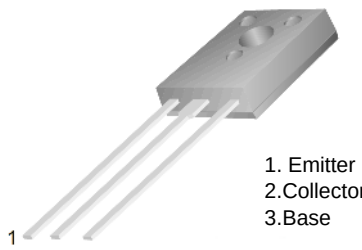
PNP Epitaxial Silicon Transistor

KSA1381



1. Emitter
2.Collector
3.Base

TO−126−3LD
CASE 340AS

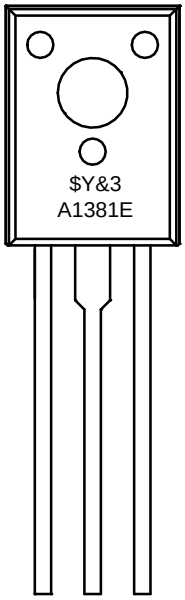
Features

- High Voltage: V_{CEO} = −300 V
- Low Reverse Transfer Capacitance: C_{re} = 2.3 pF at V_{CB} = −30 V
- Excellent Gain Linearity for Low THD
- High Frequency: 150 MHz
- Full Thermal and Electrical Spice Models are Available
- Complement to KSC3503
- This is a Pb−Free Device

Applications

- Audio, Voltage Amplifier and Current Source
- CRT Display, Video Output
- General Purpose Amplifier

MARKING DIAGRAM



$Y = Logo
&3 = 3−Digit Date Code
A1381E = Specific Device Code

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C unless otherwise noted)

Symbol	Parameter	Ratings	Units
BV_{CBO}	Collector−Base Voltage	−300	V
BV_{CEO}	Collector−Emitter Voltage	−300	V
BV_{EBO}	Emitter−Base Voltage	−5	V
I_C	Collector Current (DC)	−100	mA
I_{CP}	Collector Current (Pulse)	−200	mA
P_C	Total Device Dissipation, T_C=25°C T_C = 125°C	7 1.2	W W
T_J, T_{STG}	Junction and Storage Temperature	−55~+150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS (Note 1)

(T_a = 25°C unless otherwise noted)

Symbol	Parameter	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	17.8	°C/W

1. Device mounted on minimum pad size.

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

ELECTRICAL CHARACTERISTICS (Note 2) (T_a = 25°C unless otherwise noted)

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
BV_{CBO}	Collector−Base Breakdown Voltage	I_C = −10 μA, I_E = 0	−300	−	−	V
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = −1 mA, I_B = 0	−300	−	−	V
BV_{EBO}	Emitter−Base Breakdown Voltage	I_E = −10 μA, I_C = 0	−5	−	−	V
I_{CBO}	Collector Cut−off Current	V_{CB} = −200 V, I_E = 0	−	−	−0.1	μA
I_{EBO}	Emitter Cut−off Current	V_{EB} = −4 V, I_C = 0	−	−	−0.1	μA
h_{FE}	DC Current Gain	V_{CE} = −10 V, I_C = −10 mA	100	−	200	
V_{CE}(sat)	Collector−Emitter Saturation Voltage	I_C = −20 mA, I_B = −2 mA	−	−	−0.6	V
V_{BE}(sat)	Base−Emitter Saturation Voltage	I_C = −20 mA, I_B = −2 mA	−	−	−1	V
f_T	Current Gain Bandwidth Product	V_{CE} = −30 V, I_C = −10 mA	−	150	−	MHz
C_{ob}	Output Capacitance	V_{CB} = −30 V, f = 1 MHz	−	3.1	−	pF
C_{re}	Reverse Transfer Capacitance	V_{CB} = −30 V, f = 1 MHz	−	2.3	−	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%

ORDERING INFORMATION

Part Number (Note 3, 4)	Marking	Package	Shipping	Remarks
KSA1381ESTU	A1381E	TO−126−3LD (Pb−Free)	1920 Units / Tube	HFE1 E Grade

3. Affix “−S−” means the standard TO126 Package.(see package dimensions). If the affix is “−STS−” instead of “−S−”, that mean the short−lead TO126 package.
4. Suffix “−TU” means the tube packing, The Suffix “TU” could be replaced to other suffix character as packing method.

TYPICAL CHARACTERISTICS

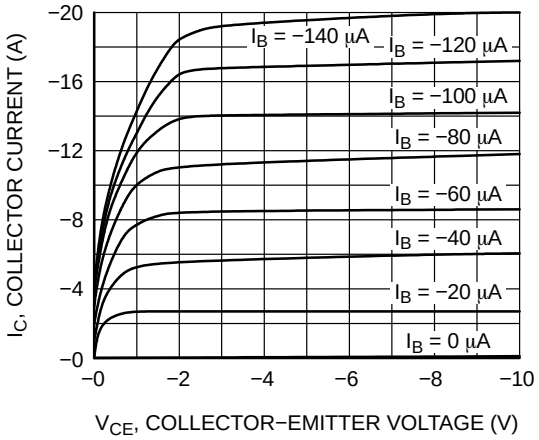


Figure 1. Static Characteristic

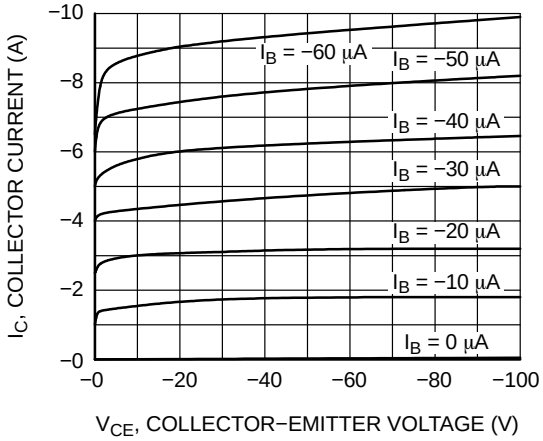


Figure 2. Static Characteristic

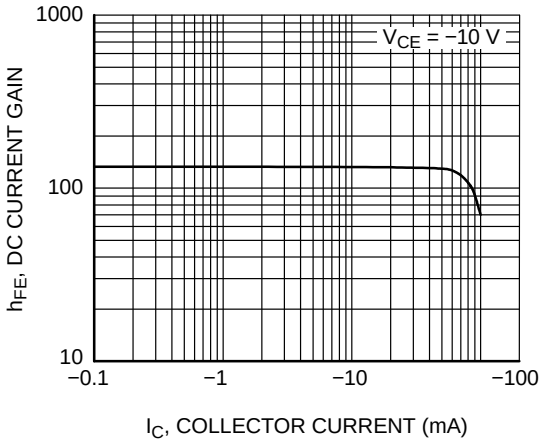


Figure 3. DC Current Gain

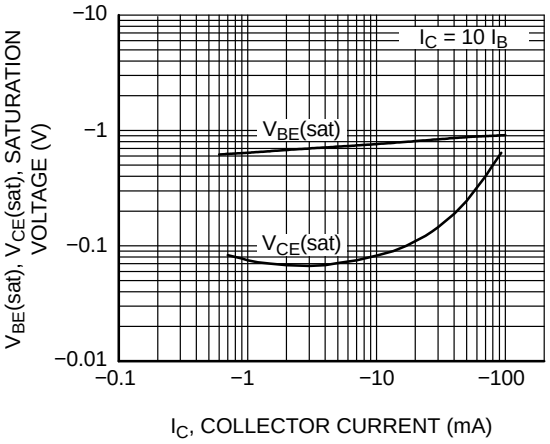


Figure 4. Base−Emitter Saturation Voltage Collector−Emitter Saturation Voltage

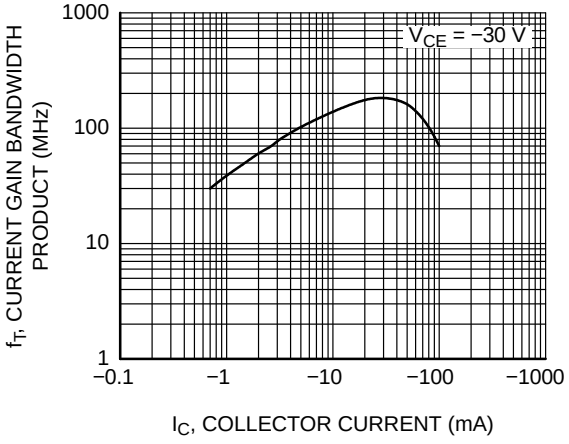


Figure 5. Current Gain Bandwidth Product

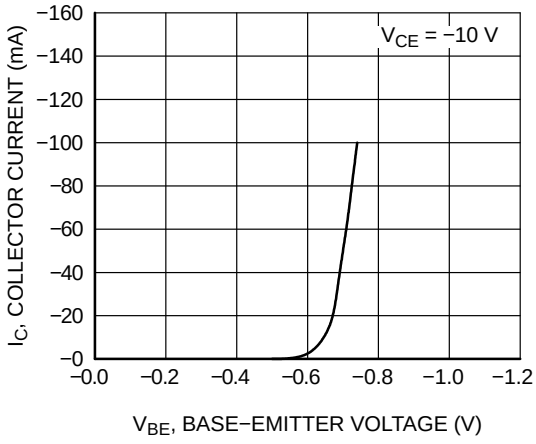


Figure 6. Base−Emitter On Voltage

TYPICAL CHARACTERISTICS (Continued)

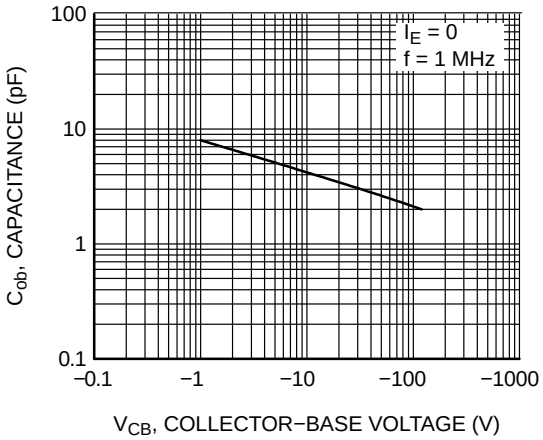


Figure 7. Collector Output Capacitance

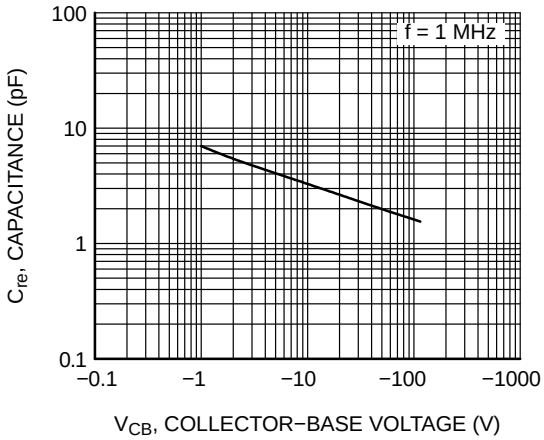


Figure 8. Reverse Transfer Capacitance

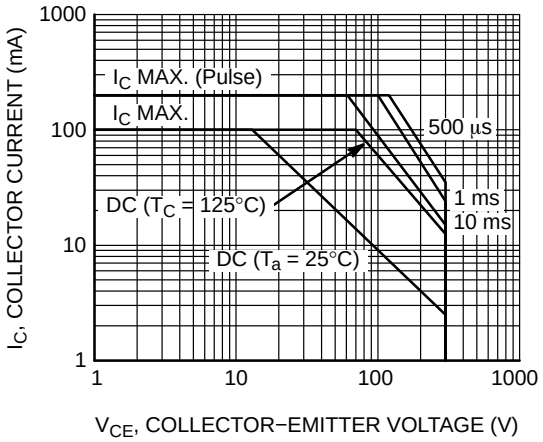


Figure 9. Safe Operating Area

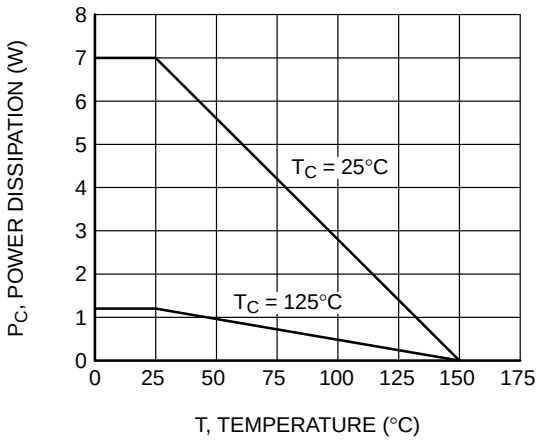


Figure 10. Power Derating

TO−126−3LD
CASE 340AS
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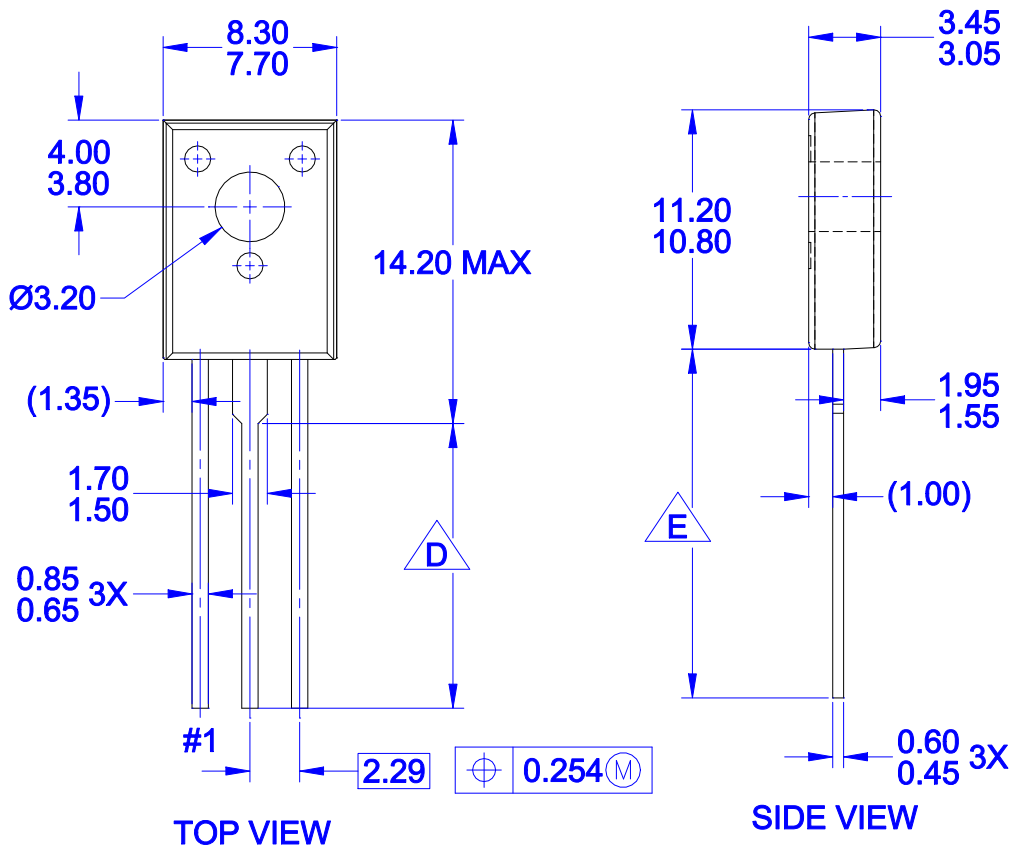
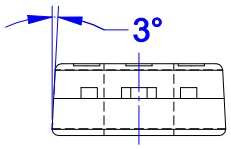
DATE 30 SEP 2016





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

D FOR TERMINAL LENGTH "D", REFER TO TABLE

E FOR TERMINAL LENGTH "E", REFER TO TABLE

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