

# PNP Silicon Transistor KSA1156

### **Features**

- High Breakdown Voltage
- Low Collector Saturation Voltage
- High Speed Switching
- This is a Pb-Free Device

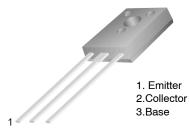
## **Applications**

- High Voltage Switching
- Low Power Switching Regulator
- DC-DC Converter

### ABSOLUTE MAXIMUM RATINGS (T<sub>C</sub> = 25°C unless otherwise noted)

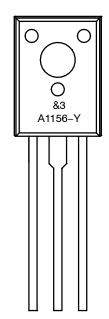
Symbol	Parameter	Ratings	Units
V <sub>CBO</sub>	Collector-Base Voltage	-400	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-400	V
V <sub>EBO</sub>	Emitter-Base Voltage	-7	V
Ι <sub>Β</sub>	Base Current	-0.25	Α
I <sub>C</sub>	Collector Current (DC)	-0.5	Α
I <sub>CP</sub>	Collector Current (Pulse)	-1	Α
P <sub>C</sub>	Collector Dissipation, $T_A = 25^{\circ}C$ $T_C = 25^{\circ}C$	1 10	W
TJ	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	<b>−55</b> ~ <b>150</b>	°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.



TO-126-3LD CASE 340AS

### **MARKING DIAGRAM**



&3 = 3-Digit Date Code A1156-Y = Specific Device Code

### **ORDERING INFORMATION**

Device	Package	Shipping	
KSA1156YS	TO-126-3LD (Pb-Free)	2000 Units / Bulk Bag	

## **KSA1156**

## **ELECTRICAL CHARACTERISTICS** ( $T_C = 25$ °C unless otherwise noted)

Symbol	Characteristic	Test Condition	Min	Max	Unit
V <sub>CEO</sub> (sus)	Collector-Emitter Sustaining Voltage	$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}, L = -20 \text{ mH}$	-400	_	V
V <sub>CEX</sub> (sus)	Collector-Emitter Sustaining Voltage	$I_C = -200 \text{ mA}, I_{B1} = I_{B2} = -20 \text{ mA},$ $V_{BE}(\text{off}) = 5 \text{ V}, L = 10 \text{ mH}$	-400	-	V
I <sub>CBO</sub>	Collector Cut-off Current	$V_{CB} = -400 \text{ V}, I_{E} = 0$	-	-100	μΑ
I <sub>EBO</sub>	Emitter Cut-off Current	$V_{EB} = -5 \text{ V}, I_C = 0$	-	-10	μΑ
I <sub>CEX1</sub>	Collector Cut-off Current	$V_{CE} = -400 \text{ V}, V_{BE}(\text{off}) = 1.5 \text{ V}$	-	-100	μΑ
I <sub>CEX2</sub>	Collector Cut-off Current	$V_{CE} = -400 \text{ V}, V_{BE}(\text{off}) = 1.5 \text{ V}, T_{C} = 125^{\circ}\text{C}$	_	-1	mA
h <sub>FE</sub>	DC Current Gain	$V_{CE} = -5 \text{ V}, I_{C} = -100 \text{ mA}$	30	200	
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$	-	-1	V
V <sub>BE</sub> (sat)	Base-Emitter Saturation Voltage	$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$	-	-1.2	V
t <sub>ON</sub>	Turn On Time	$V_{CC} = -150 \text{ V}, I_C = -100 \text{ mA}, I_{B1} = -10 \text{ mA},$	-	1	μs
t <sub>STG</sub>	Storage Time	$I_{B2}$ = 20 mA, R <sub>L</sub> = 1.5 kΩ	_	4	μS
t <sub>F</sub>	Fall Time		_	1	μs

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.

## $h_{\mbox{\scriptsize FE}}$ CLASSIFICATION

Classification	N	R	0	Υ
h <sub>FE</sub>	30 ~ 60	40 ~ 80	60 ~ 120	100 ~ 200

## KSA1156

## **TYPICAL CHARACTERISTICS**

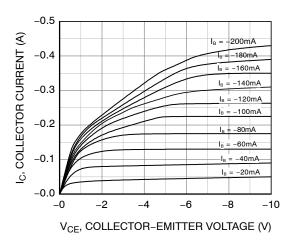


Figure 1. Static Characteristic

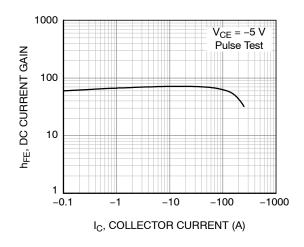


Figure 2. DC Current Gain

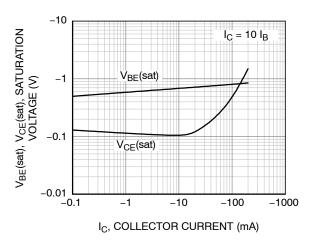


Figure 3. Collector–Emitter Saturation Voltage Base–Emitter Saturation Voltage

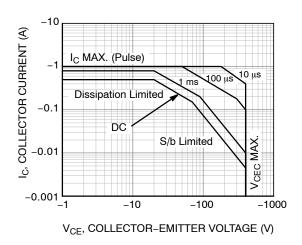


Figure 4. Safe Operating Area

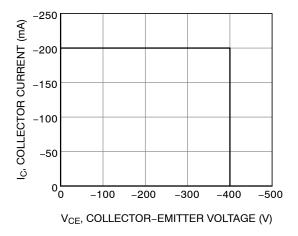


Figure 5. Reverse Bias Safe Operating Area

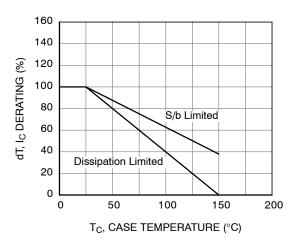


Figure 6. Derating Curve of Safe Operating Areas

## KSA1156

## TYPICAL CHARACTERISTICS (Continued)

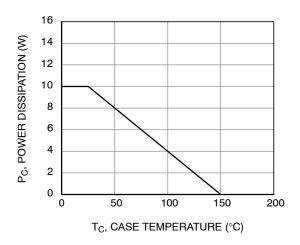
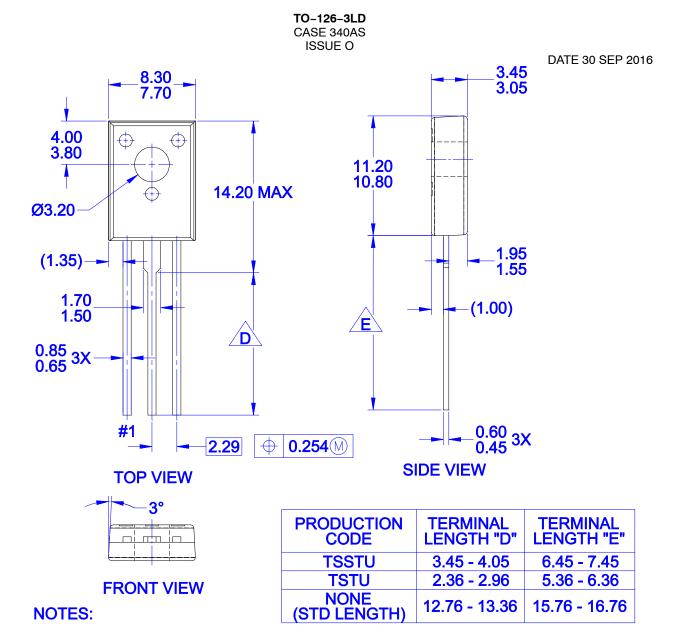


Figure 7. Power Derating





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- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS

FOR TERMINAL LENGTH "E", REFER TO TABLE



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