

PNP Silicon Transistor

KSA1156

Features

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

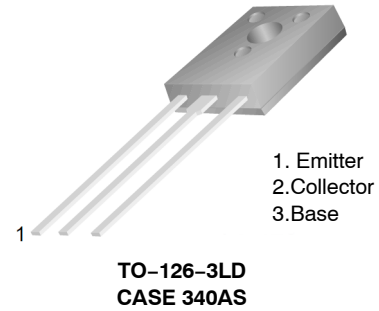
Applications

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

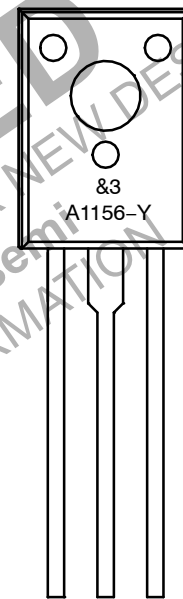
ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{CBO}	Collector-Base Voltage	-400	V
V_{CEO}	Collector-Emitter Voltage	-400	V
V_{EBO}	Emitter-Base Voltage	-7	V
I_B	Base Current	-0.25	A
I_C	Collector Current (DC)	-0.5	A
I_{CP}	Collector Current (Pulse)	-1	A
P_C	Collector Dissipation, $T_A = 25^\circ\text{C}$ $T_C = 25^\circ\text{C}$	1 10	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

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.



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

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Characteristic	Test Condition	Min	Max	Unit
$V_{CEO(sus)}$	Collector–Emitter Sustaining Voltage	$I_C = -100\text{ mA}$, $I_B = -10\text{ mA}$, $L = -20\text{ mH}$	-400	–	V
$V_{CEX(sus)}$	Collector–Emitter Sustaining Voltage	$I_C = -200\text{ mA}$, $I_{B1} = I_{B2} = -20\text{ mA}$, $V_{BE(off)} = 5\text{ V}$, $L = 10\text{ mH}$	-400	–	V
I_{CBO}	Collector Cut-off Current	$V_{CB} = -400\text{ V}$, $I_E = 0$	–	-100	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -5\text{ V}$, $I_C = 0$	–	-10	μA
I_{CEX1}	Collector Cut-off Current	$V_{CE} = -400\text{ V}$, $V_{BE(off)} = 1.5\text{ V}$	–	-100	μA
I_{CEX2}	Collector Cut-off Current	$V_{CE} = -400\text{ V}$, $V_{BE(off)} = 1.5\text{ V}$, $T_C = 125^\circ\text{C}$	–	-1	mA
h_{FE}	DC Current Gain	$V_{CE} = -5\text{ V}$, $I_C = -100\text{ mA}$	30	200	
$V_{CE(sat)}$	Collector–Emitter Saturation Voltage	$I_C = -100\text{ mA}$, $I_B = -10\text{ mA}$	–	-1	V
$V_{BE(sat)}$	Base–Emitter Saturation Voltage	$I_C = -100\text{ mA}$, $I_B = -10\text{ mA}$	–	-1.2	V
t_{ON}	Turn On Time	$V_{CC} = -150\text{ V}$, $I_C = -100\text{ mA}$, $I_{B1} = -10\text{ mA}$, $I_{B2} = 20\text{ mA}$, $R_L = 1.5\text{ k}\Omega$	–	1	μs
t_{STG}	Storage Time		–	4	μs
t_F	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_{FE} CLASSIFICATION

Classification	N	R	O	Y
h_{FE}	30 ~ 60	40 ~ 80	60 ~ 120	100 ~ 200

TYPICAL CHARACTERISTICS

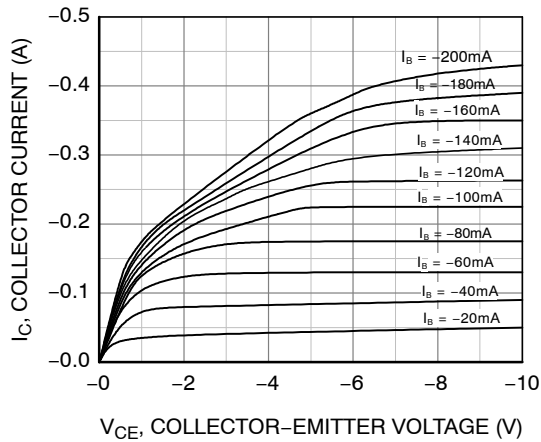


Figure 1. Static Characteristic

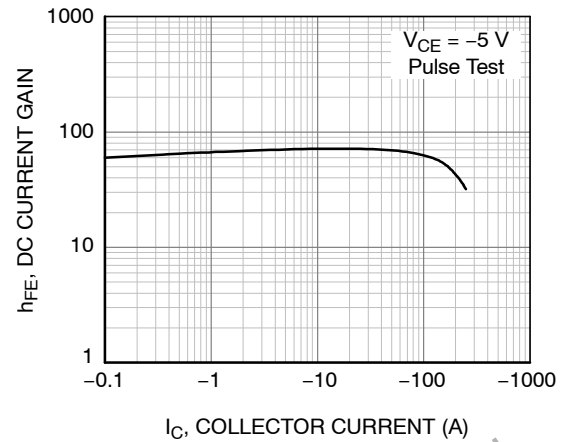


Figure 2. DC Current Gain

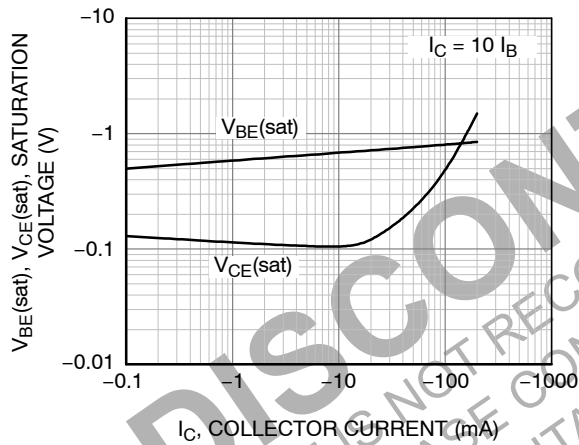
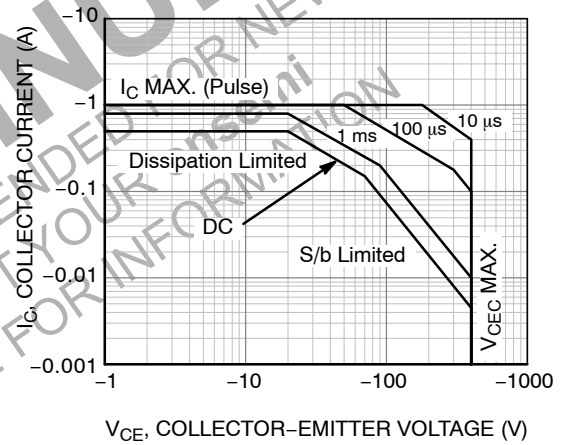
Figure 3. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

Figure 4. Safe Operating Area

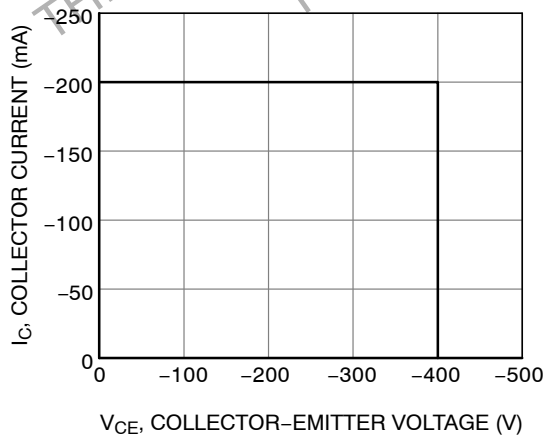
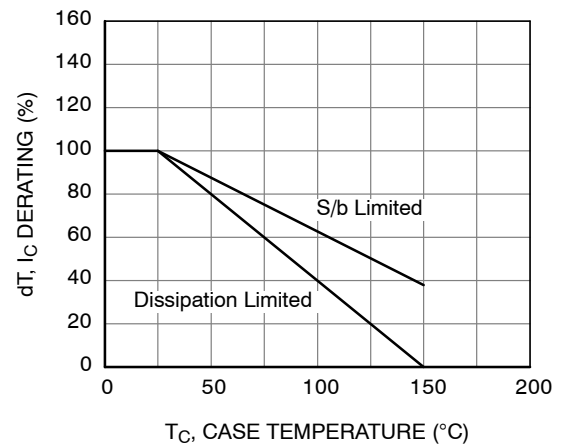


Figure 5. Reverse Bias Safe Operating Area

Figure 6. Derating Curve of Safe
Operating Areas

TYPICAL CHARACTERISTICS (Continued)

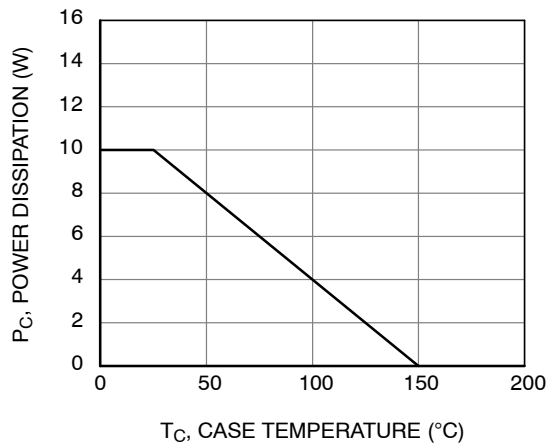
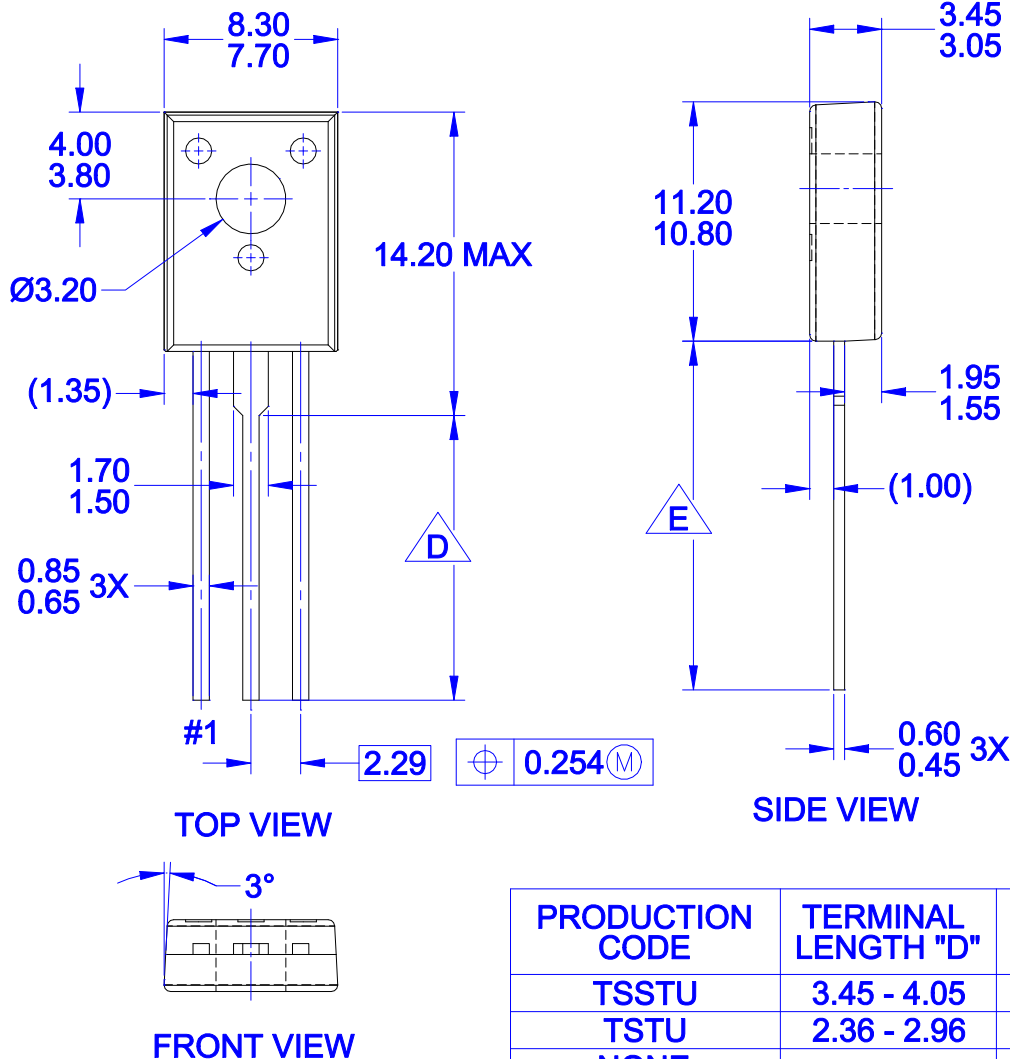


Figure 7. Power Derating

DISCONTINUED
THIS DEVICE IS NOT RECOMMENDED FOR NEW DESIGN
PLEASE CONTACT YOUR onsemi
REPRESENTATIVE FOR INFORMATION

TO-126-3LD
CASE 340AS
ISSUE O

DATE 30 SEP 2016



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

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

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