

# NPN Epitaxial Silicon Transistor

## KSC2690A

### Features

- Complement to KSA1220A
- This is a Pb-Free Device

### Applications

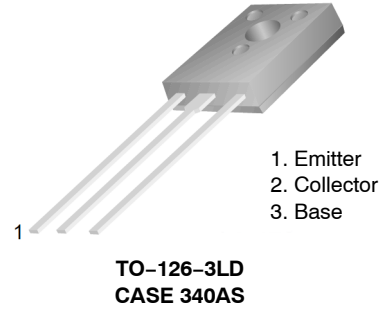
- Audio Frequency
- High Frequency Power Amplifier

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

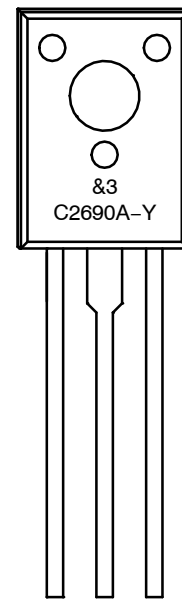
Symbol	Parameter	Ratings	Units
V <sub>CB0</sub>	Collector-Base Voltage	160	V
V <sub>CEO</sub>	Collector-Emitter Voltage	160	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current (DC)	1.2	A
I <sub>CP</sub>	Collector Current (Pulse) *	2.5	A
I <sub>B</sub>	Base Current (DC)	0.3	A
P <sub>C</sub>	Collector Dissipation, T <sub>A</sub> = 25°C T <sub>C</sub> = 25°C	1.2 20	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	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.

\*PW ≤ 10 ms, Duty Cycle ≤ 50%



### MARKING DIAGRAM



&3 = 3-Digit Date Code  
C2690A-Y = Specific Device Code

### ORDERING INFORMATION

Device	Package	Shipping
KSC2690AYS	TO-126-3LD (Pb-Free)	2000 Units / Bulk Bag
KSC2690AYSTU	TO-126-3LD (Pb-Free)	1920 Units / Tube

# KSC2690A

## ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted)

Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> = 120 V, I <sub>E</sub> = 0			1	μA
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = 3 V, I <sub>C</sub> = 0			1	μA
h <sub>FE1</sub> h <sub>FE2</sub>	DC Current Gain*	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 5 mA V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.3 A	35 60	105 140	320	
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage*	I <sub>C</sub> = 1 A, I <sub>B</sub> = 0.2 A		0.4	0.7	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage*	I <sub>C</sub> = 1 A, I <sub>B</sub> = 0.2 A		1	1.3	V
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.2 A		155		MHz
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz		19		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.

\*Pulse Test: PW ≤ 350 μs, Duty Cycle ≤ 2% Pulsed

## h<sub>FE</sub> CLASSIFICATION

Classification	R	O	Y
h <sub>FE2</sub>	60 ~ 120	100 ~ 200	160 ~ 320

TYPICAL CHARACTERISTICS

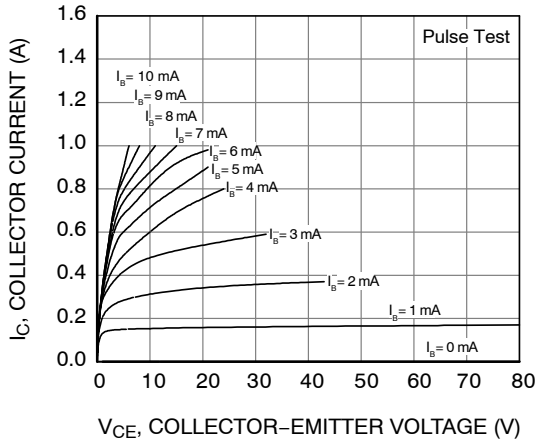


Figure 1. Static Characteristic

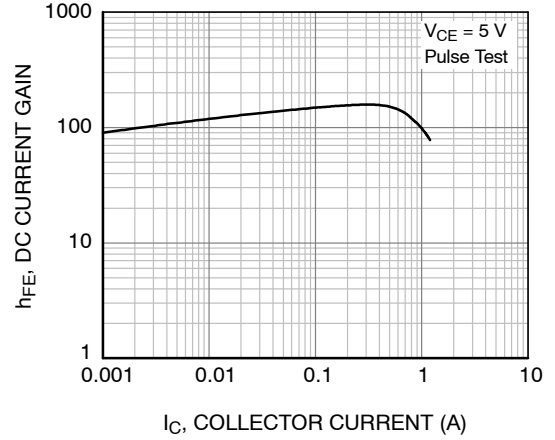


Figure 2. DC Current Gain

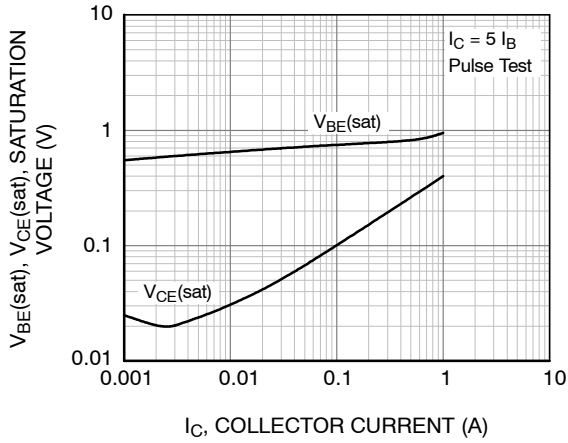


Figure 3. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

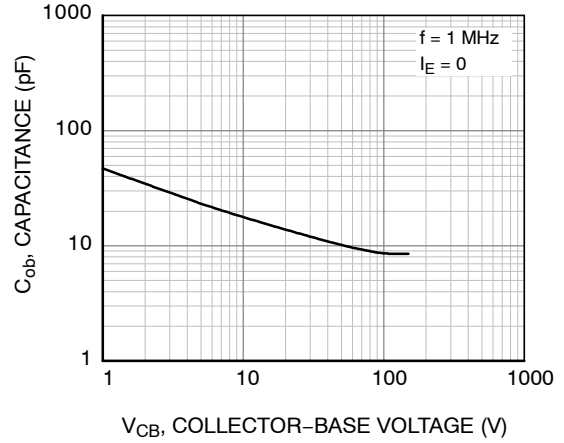


Figure 4. Collector Output Capacitance

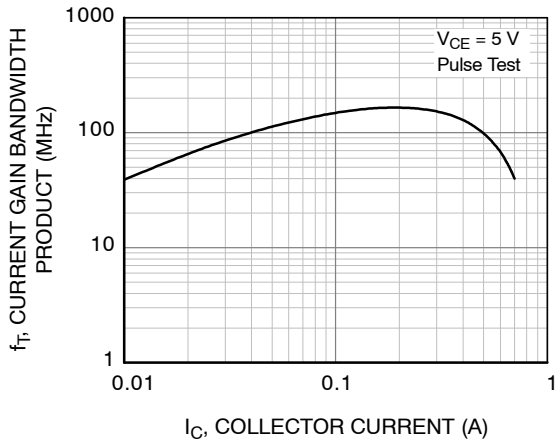


Figure 5. Current Gain Bandwidth Product

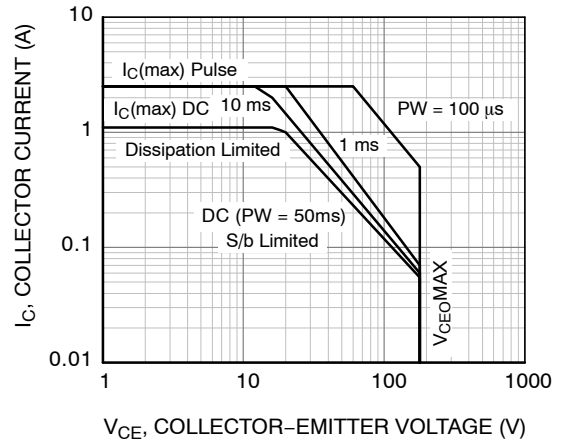


Figure 6. Safe Operating Area

TYPICAL CHARACTERISTICS (Continued)

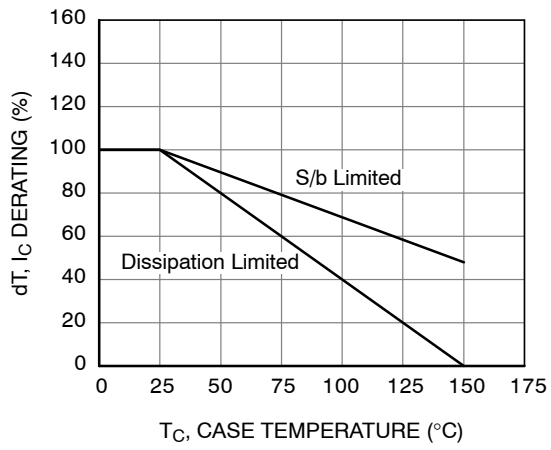


Figure 7. Derating Curve of Safe Operating Areas

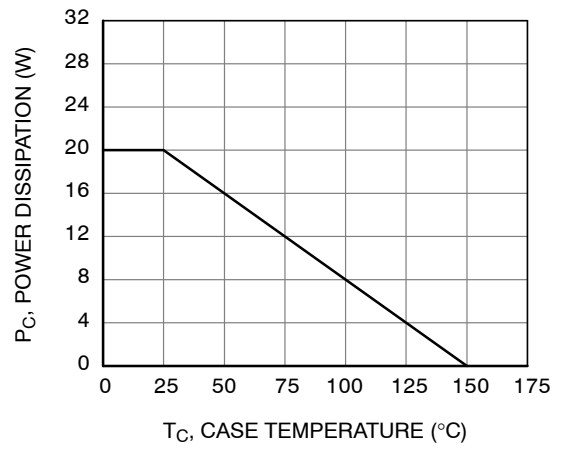


Figure 8. Power Derating

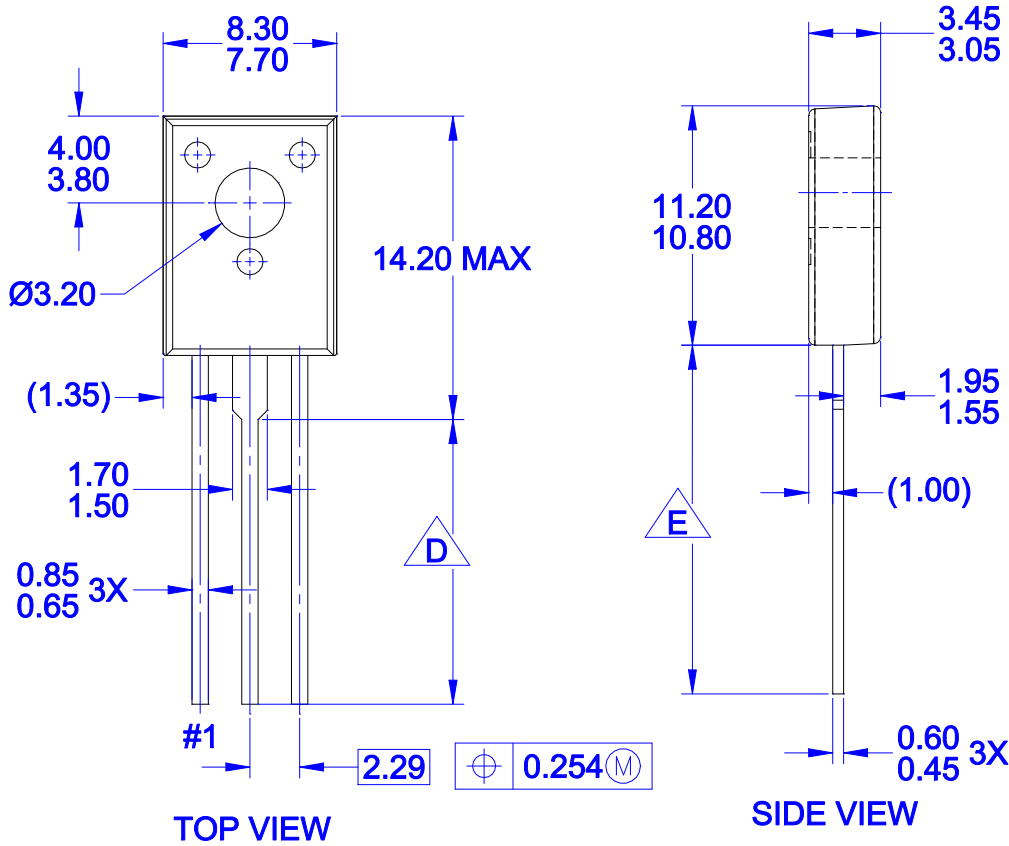
**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

ON Semiconductor®



TO-126-3LD  
CASE 340AS  
ISSUE 0

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:**

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- 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

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