

NPN Epitaxial Silicon Transistor

KSC3503

Features

• High Voltage: $V_{CEO} = 300 \text{ V}$

• Low Reverse Transfer Capacitance: $C_{re} = 1.8 \text{ pF}$ at $V_{CB} = 30 \text{ V}$

• Excellent Gain Linearity for Low THD

• High Frequency: 150 MHz

• Full Thermal and Electrical Spice Models are Available

• Complement to KSA1381

• These Devices are Pb-Free and are RoHS Compliant

Applications

Audio, Voltage Amplifier and Current Source

• CRT Display, Video Output

• General Purpose Amplifier

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

Parameter	Symbol	Ratings	Units
Collector-Base Voltage	BV _{CBO}	300	V
Collector-Emitter Voltage	BV _{CEO}	300	V
Emitter-Base Voltage	BV _{EBO}	5	(V)
Collector Current (DC)	lo	100	mA
Collector Current (Pulse)	I _{CP}	200	mA
Total Device Dissipation, $T_C = 25^{\circ}C$ $T_C = 125^{\circ}C$	Pc	7,1,2	W W
Junction and Storage Temperature	TJ, T _{STG}	-50 ~ +150	°C

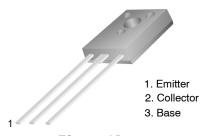
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS (Note 1)

 $(T_A = 25^{\circ}C \text{ unless otherwise noted})$

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

1. Device mounted on minimum pad size.



TO-126-3LD CASE 340AS

MARKING DIAGRAM



ORDERING INFORMATION

= Assembly Lot

= Specific Device Code

77

C3503D

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

KSC3503

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

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
BV _{CBO}	Collector-Base Breakdown Voltage	$I_C = 10 \mu A, I_E = 0$	300			V
BV _{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 1 \text{ mA}, I_B = 0$	300			V
BV _{EBO}	Emitter-Base Breakdown Voltage	$I_E = 10 \mu A, I_C = 0$	5			V
I _{CBO}	Collector Cut-Off Current	V _{CB} = 200 V, I _E = 0			0.1	μΑ
I _{EBO}	Emitter Cut-Off Current	$V_{EB} = 4 \text{ V}, I_{C} = 0$			0.1	μΑ
h _{FE}	DC Current Gain	$V_{CE} = 10 \text{ V}, I_{C} = 10 \text{ mA}$	60		120	
V _{CE} (sat)	Collector-Emitter Saturation Voltage	$I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$			0.6	V
V _{BE} (sat)	Base-Emitter Saturation Voltage	$I_C = 20 \text{ mA}, I_B = 2 \text{ mA}$			1	V
f _T	Current Gain Bandwidth Product	$V_{CE} = 30 \text{ V}, I_{C} = 10 \text{ mA}$		150		MHz
C _{ob}	Output Capacitance	V _{CB} = 30 V, f = 1 MHz		2.6		pF
C _{ob}	Output Capacitance	V _{CB} = 30 V, f = 1 MHz		1.8		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.

ORDERING INFORMATION

Part Number*	Marking	Package	Shipping
KSC3503DS	C3503D	TO-126-3LD (Pb-Free)	2000 Units / Bulk Box
KSC3503DSTU	C3503D	TO-126-3LD (Pb-Free)	1920 Units / Tube
*Suffix "-TU" means the tube pa	cking, The Suffix "TU" could be in	replaced to other suffix character as pack	ing method.

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

KSC3503

TYPICAL CHARACTERISTICS

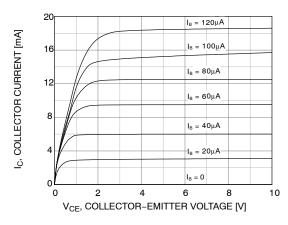


Figure 1. Static Characteristic

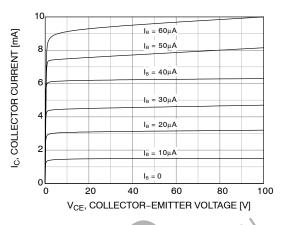


Figure 2. Static Characteristic

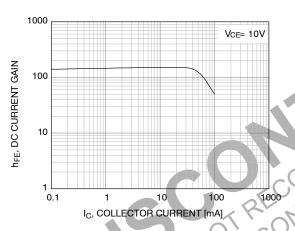


Figure 3. DC Current Gain

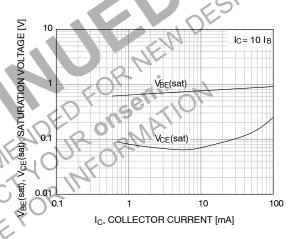


Figure 4. Base–Emitter Saturation Voltage Collector–Emitter Saturation Voltage

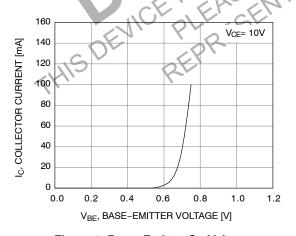


Figure 5. Base-Emitter On Voltage

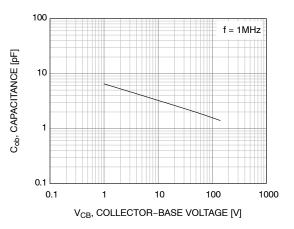


Figure 6. Collector Output Capacitance

KSC3503

TYPICAL CHARACTERISTICS

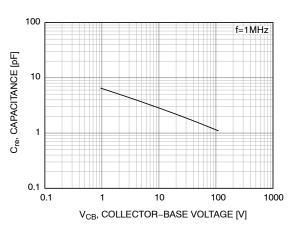


Figure 7. Reverse Transfer Capacitance

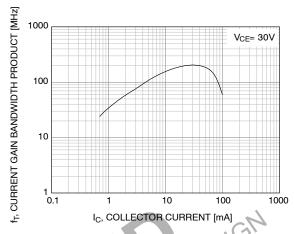
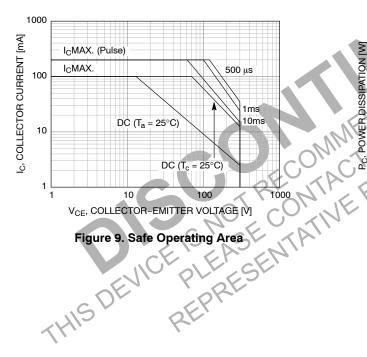


Figure 8. Current Gain Bandwidth Product



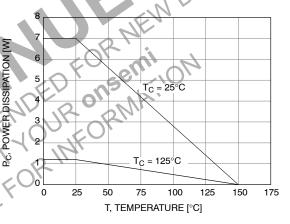
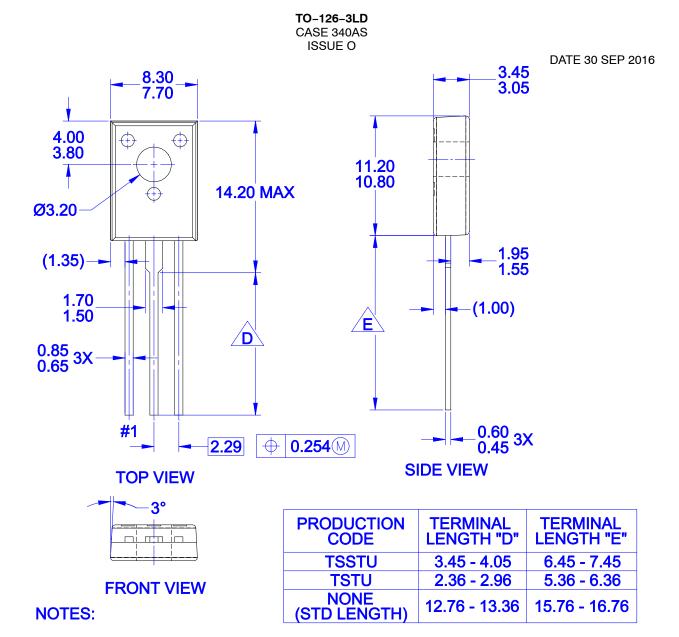


Figure 10. Power Derating





- 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



E FOR TERMINAL LENGTH "E", REFER TO TABLE

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DESCRIPTION:	TO-126-3LD		PAGE 1 OF 1

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