



**THE DATASHEET OF  
KSC3502ES**

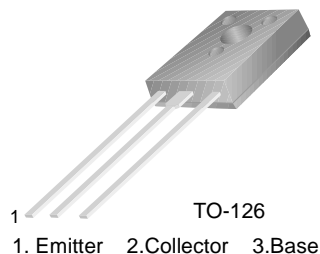


# KSC3502

KSC3502

## CRT Display, Video Output

- High Voltage :  $V_{CEO}=200V$
- Low Reverse Transfer Capacitance:  $C_{re}=1.2pF @ V_{CB}=30V$



## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	200	V
$V_{CEO}$	Collector-Emitter Voltage	200	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current (DC)	100	mA
$I_{CP}$	Collector Current (Pulse)	200	mA
$P_C$	Collector Dissipation ( $T_C=25^\circ C$ )	5	W
$P_C$	Collector Dissipation ( $T_a=25^\circ C$ )	1.2	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ C$

### Electrical Characteristics $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 10\mu A, I_E = 0$	200			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1mA, I_B = 0$	200			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu A, I_C = 0$	5			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 150V, I_E = 0$			0.1	$\mu A$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 4V, I_C = 0$			0.1	$\mu A$
$h_{FE}$	DC Current Gain	$V_{CE} = 10V, I_C = 10mA$	40		320	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 20mA, I_B = 2mA$			0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 20mA, I_B = 2mA$			1	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 30V, I_C = 10mA$		150		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 30V, f = 1MHz$		1.7		pF
$C_{re}$	Reverse Transfer Capacitance	$V_{CB} = 30V, f = 1MHz$		1.2		pF

### $h_{FE}$ Classification

Classification	C	D	E	F
$h_{FE}$	40 ~ 80	60 ~ 120	100 ~ 200	160 ~ 320

# Typical Characteristics

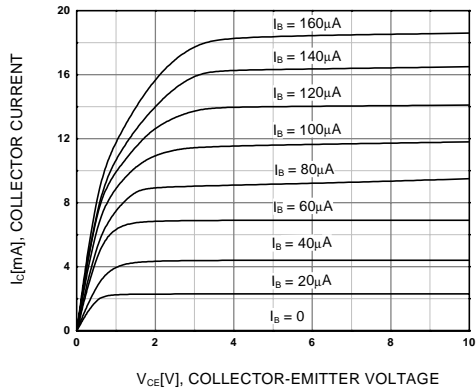


Figure 1. Static Characteristic

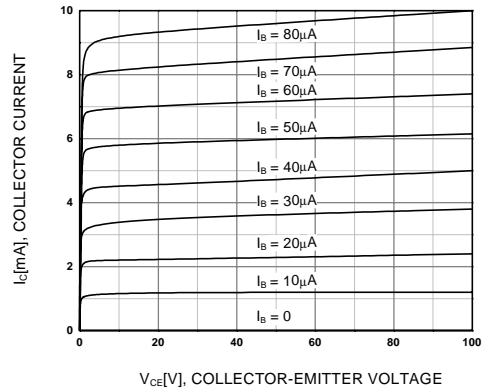


Figure 2. Static Characteristic

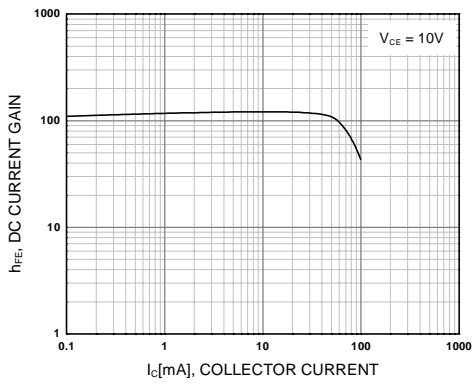


Figure 3. DC current Gain

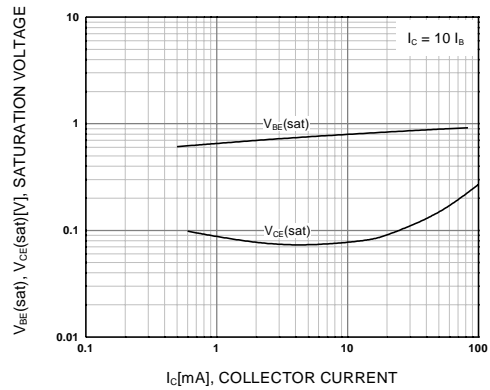


Figure 4. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

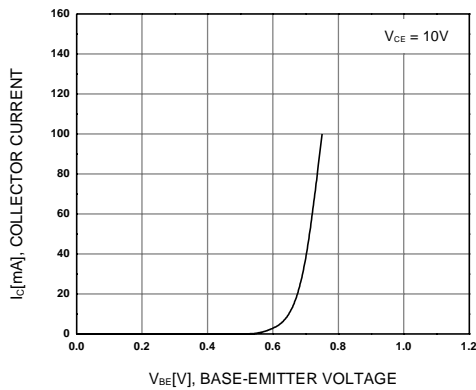


Figure 5. Base-Emitter On Voltage

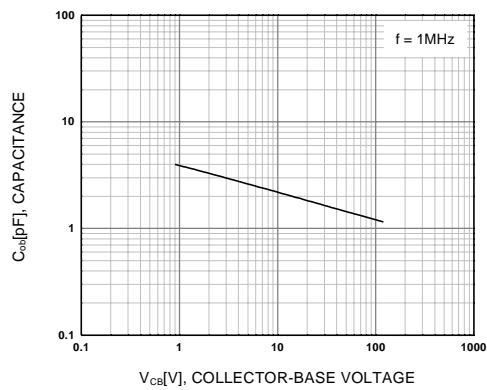


Figure 6. Collector Output Capacitance

Typical Characteristics (Continued)

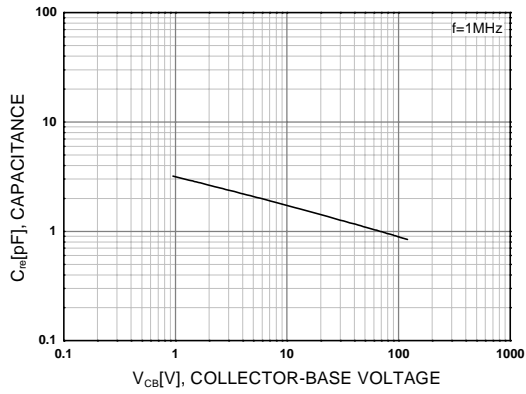


Figure 7. Reverse Transfer Capacitance

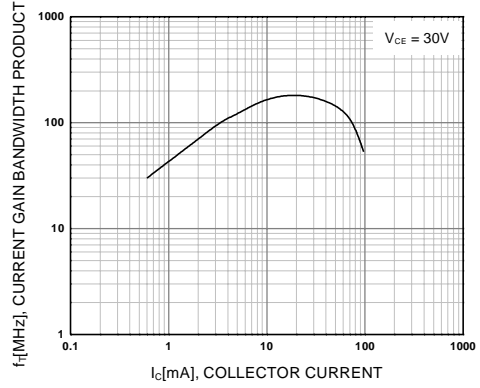


Figure 8. Current Gain Bandwidth Product

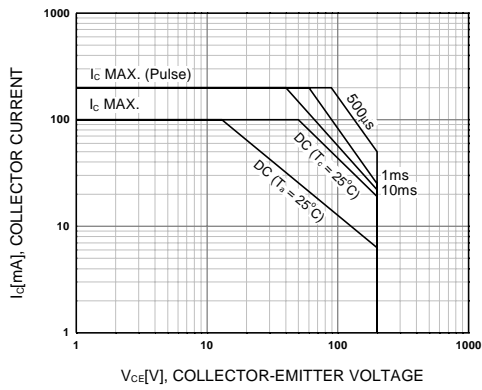


Figure 9. Safe Operating Area

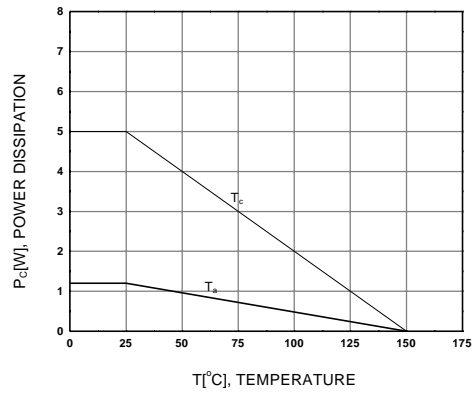


Figure 10. Power Derating

# Package Dimensions

KSC3502

## TO-126



Dimensions in Millimeters

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