



**THE DATASHEET OF
KSC3953DSTU**

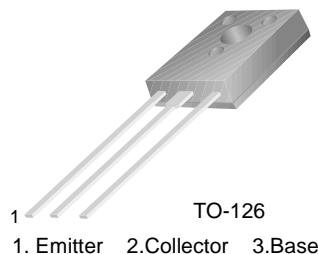


KSC3953

KSC3953

CRT Display Video Output

- High Current Gain Bandwidth Product : $f_T=400\text{MHz(Typ.)}$
- High Collector-Emitter Voltage : $V_{CE0}=120\text{V}$
- Low Reverse Transfer Capacitance : $C_{re}=1.7\text{pF(Typ.)}$



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current (DC)	200	mA
I_{CP}	Collector Current (Pulse)	400	mA
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1.3	W
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	8	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}, I_B = 0$	120			V
BV_{EBO}	Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}, R_{BE} = \infty$	120			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 100\mu\text{A}, I_C = 0$	3			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 80\text{V}, I_E = 0$			0.1	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 2\text{V}, I_C = 0$			1.0	μA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$ $V_{CE} = 10\text{V}, I_C = 100\text{mA}$	40 20		120	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 30\text{mA}, I_B = 3\text{mA}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 30\text{mA}, I_B = 3\text{mA}$			1.0	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$		400		MHz
C_{ob}	Output Capacitance	$V_{CB} = 30\text{V}, f = 1\text{MHz}$		2.1		pF
C_{re}	Reverse Transfer Capacitance	$V_{CB} = 30\text{V}, f = 1\text{MHz}$		1.7		pF

h_{FE} Classification

Classification	C	D
h_{FE1}	40 ~ 80	60 ~ 120

Typical Characteristics

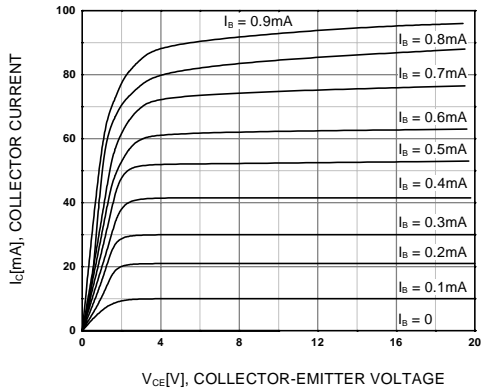


Figure 1. Static Characteristic

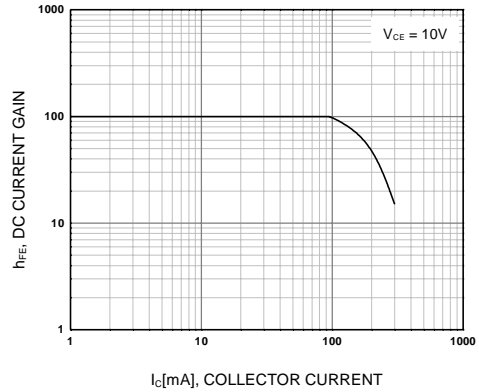


Figure 2. DC current Gain

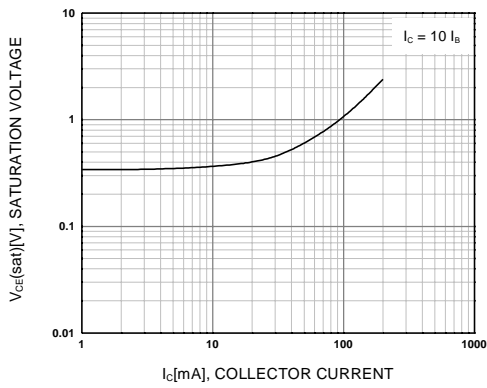


Figure 3. Collector-Emitter Saturation Voltage

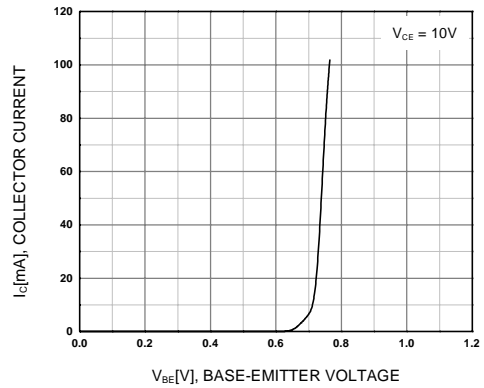


Figure 4. Base-Emitter On Voltage

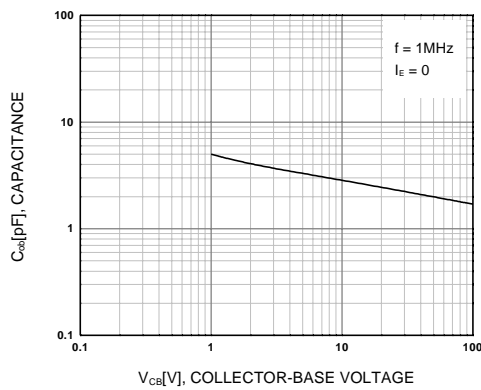


Figure 5. Collector Output Capacitance

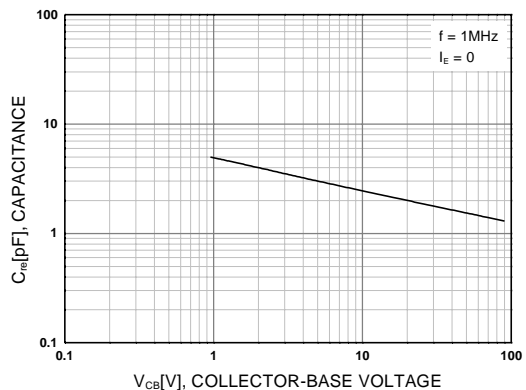


Figure 6. Reverse Capacitance

Typical Characteristics (Continued)

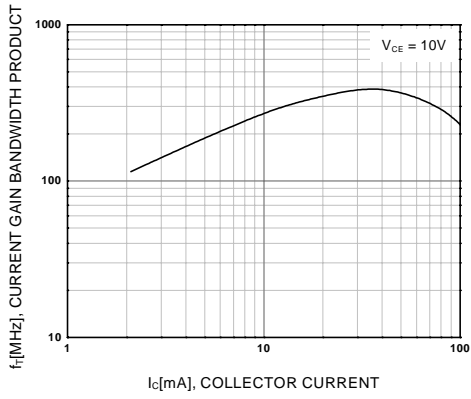


Figure 7. Current Gain Bandwidth Product

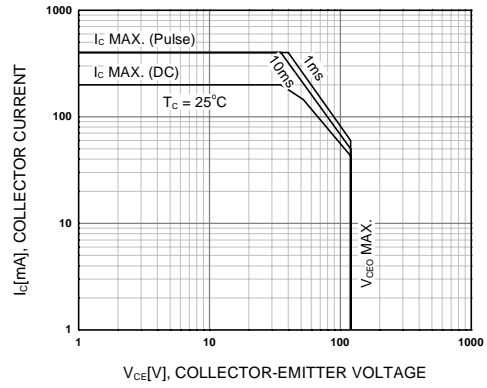


Figure 8. Safe Operating Area

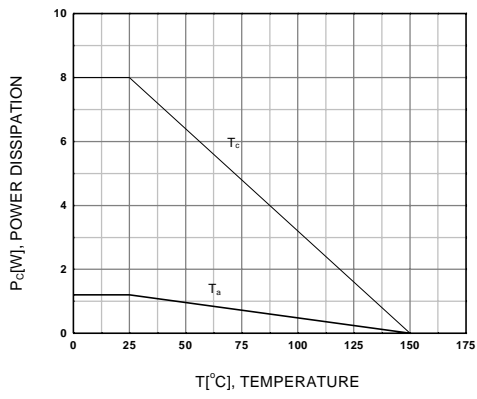


Figure 9. Power Derating

Package Dimensions

KSC3953

TO-126



Dimensions in Millimeters

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