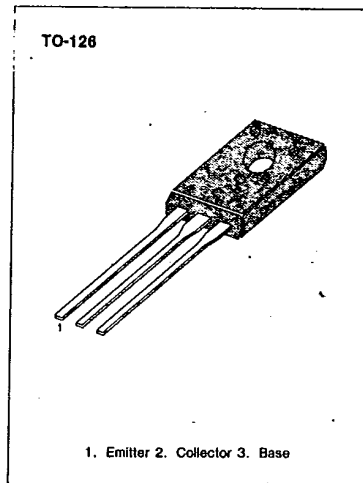


**KSC2682****NPN EPITAXIAL SILICON TRANSISTOR****AUDIO FREQUENCY POWER AMPLIFIER**

• Complement to KSA1142

**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	180	V
Collector-Emitter Voltage	$V_{CE0}$	180	V
Emitter-Base Voltage	$V_{EB0}$	5	V
Collector Current	$I_C$	100	mA
Collector Dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	1.2	W
Collector Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	8	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$



3

**ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )**

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CB0}$	$V_{CB}=180\text{V}, I_E=0$			1.0	$\mu\text{A}$
Emitter Cutoff Current	$I_{EB0}$	$V_{EB}=3\text{V}, I_C=0$			1.0	$\mu\text{A}$
*DC Current Gain	$h_{FE1}$	$V_{CE}=5\text{V}, I_C=1\text{mA}$	90	190		
	$h_{FE2}$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	100	200	320	
*Collector Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C=50\text{mA}, I_B=5\text{mA}$		0.12	0.5	V
*Base Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C=50\text{mA}, I_B=5\text{mA}$		0.8	1.5	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=20\text{mA}$		200		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0$ $f=1\text{MHz}$		3.2	5.0	pF
Noise Figure	NF	$V_{CE}=10\text{V}, I_C=1\text{mA}$ $R_S=10\text{k}\Omega, f=1\text{kHz}$		4		dB

• Pulse Test:  $PW \leq 350\mu\text{s}$ , Duty Cycle  $\leq 2\%$  **$h_{FE}(2)$  CLASSIFICATION**

Classification	O	Y
$h_{FE}(2)$	100-200	160-320

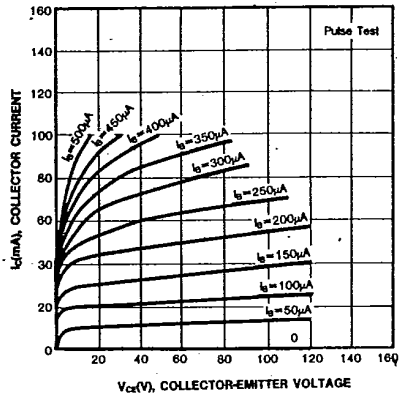


KSC2682

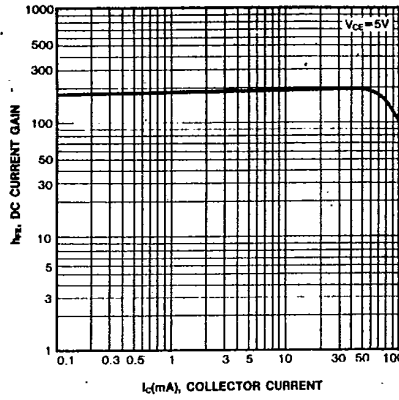
NPN EPITAXIAL SILICON TRANSISTOR

T-33-05

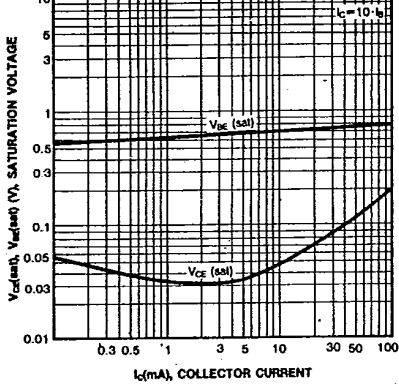
STATIC CHARACTERISTIC



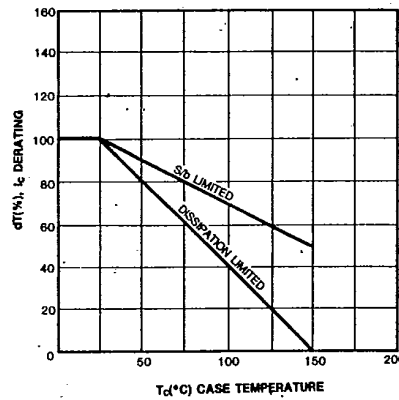
DC CURRENT GAIN



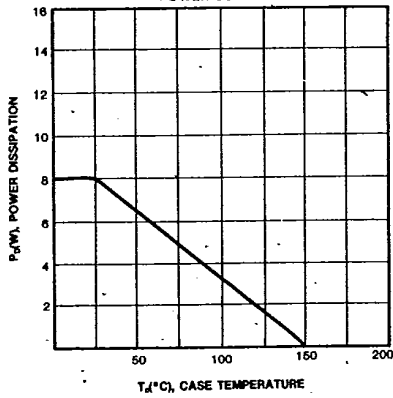
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



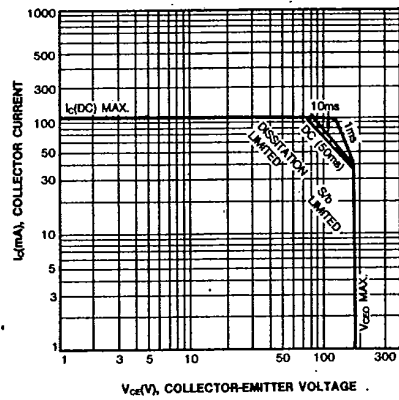
DERATING CURVE OF SAFE OPERATING AREAS



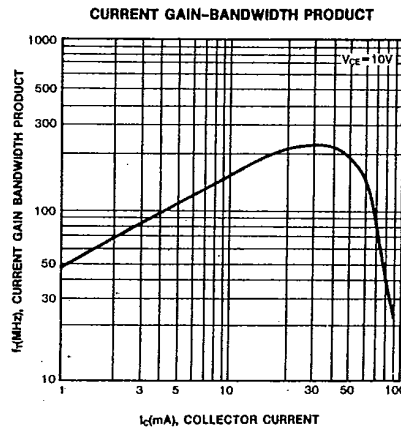
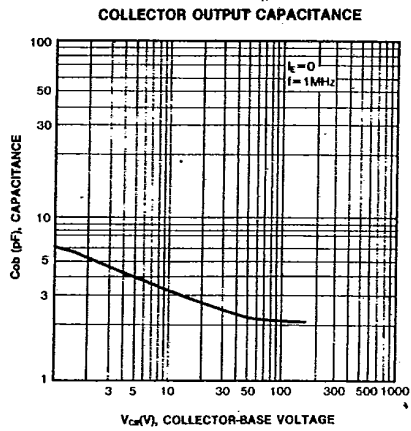
POWER DERATION



SAFE OPERATING AREA



T-33-05



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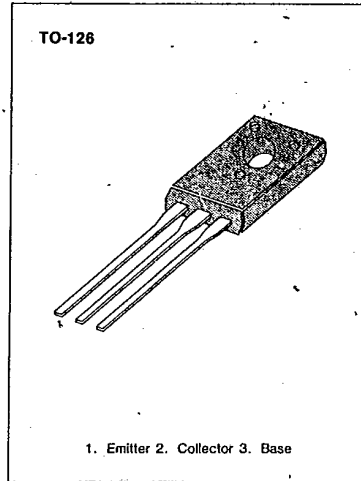
**KSC2688****NPN EPITAXIAL SILICON TRANSISTOR**

T-33-07

COLOR TV CHROMA OUTPUT  
VIDEO OUTPUT

**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	300	V
Collector-Emitter Voltage	$V_{CEO}$	300	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	200	mA
Collector Dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	1.25	W
Collector Dissipation ( $T_c=25^\circ\text{C}$ )	$P_C$	10	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )**

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{CBO}$	$I_C=0.1\text{mA}, I_E=0$	300			V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	$I_C=5\text{mA}, I_B=0, R_{BE}=\infty$	300			V
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_E=0.1\text{mA}, I_C=0$	5			V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=200\text{V}, I_E=0$			100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			100	nA
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	40		250	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=5\text{mA}$			1.5	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=30\text{V}, I_E=-10\text{mA}$	50	80		MHz
Feed Back Capacitance	$C_{re}$	$V_{CB}=30\text{V}, I_E=0$ $f=1\text{MHz}$			3	pF

\* Pulse Test:  $PW \leq 350\mu\text{s}$ , Duty Cycle  $\leq 2\%$  **$h_{FE}$  CLASSIFICATION**

Classification	R	O	Y	G
$h_{FE}$	40-80	60-120	100-200	160-250

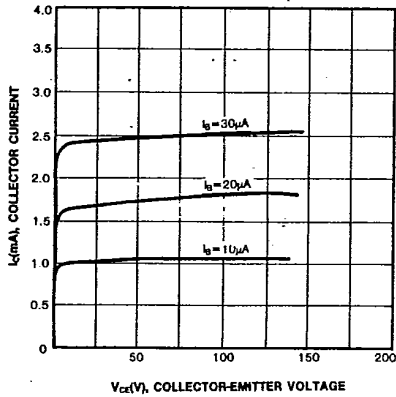


KSC2688

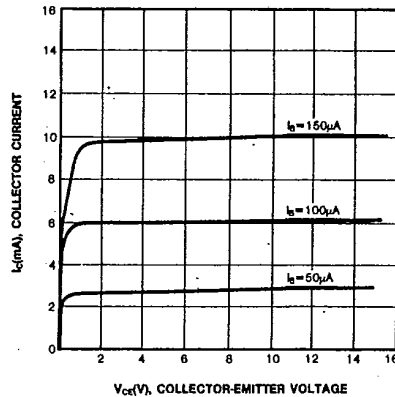
NPN EPITAXIAL SILICON TRANSISTOR

T-33-07

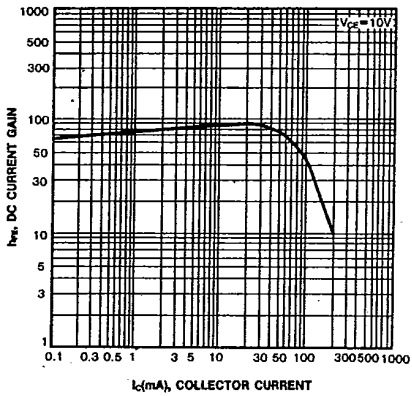
STATIC CHARACTERISTIC



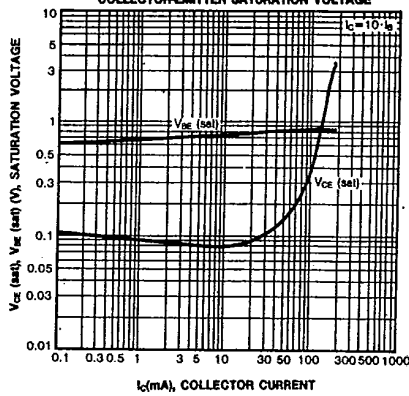
STATIC CHARACTERISTIC



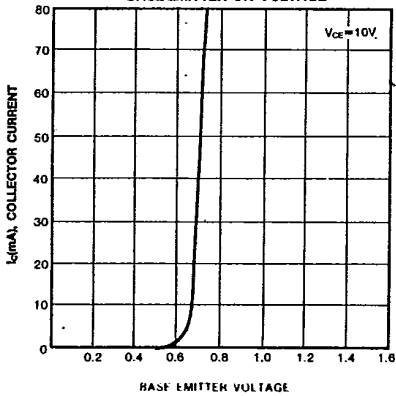
DC CURRENT GAIN



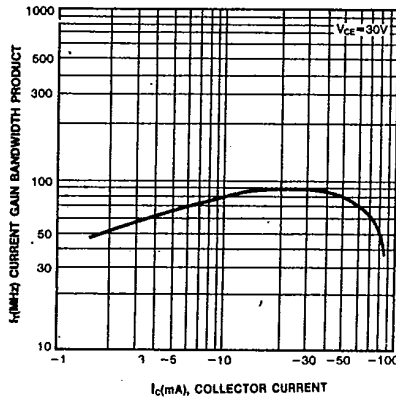
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



BASE-EMITTER ON VOLTAGE



CURRENT GAIN BANDWIDTH PRODUCT



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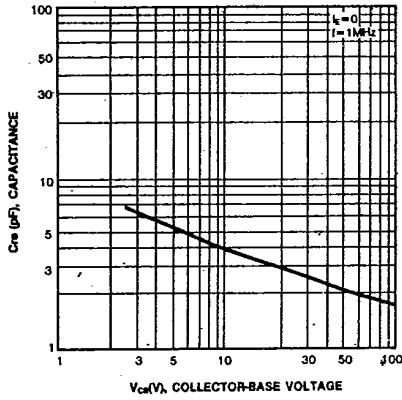


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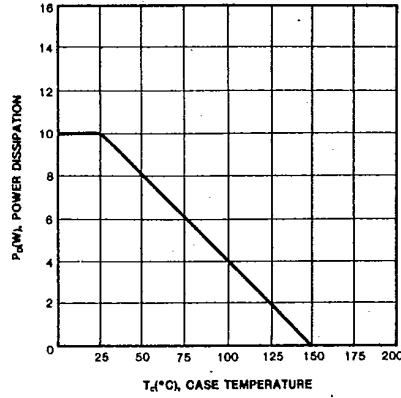
NPN EPITAXIAL SILICON TRANSISTOR

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FEEDBACK CAPACITANCE



POWER DERATING



POWER DERATING

