

SAMSUNG SEMICONDUCTOR INC

14E D 7964142 0007644 2

**NPN TRIPLE DIFFUSED  
PLANAR SILICON TRANSISTOR**

**KSD5003**

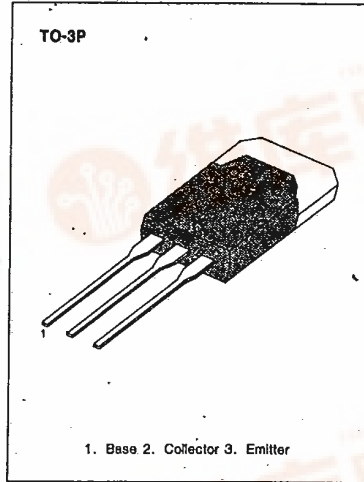
T-33-13

**COLOR TV HORIZONTAL OUTPUT  
APPLICATIONS (DAMPER DIODE BUILT IN)**

HIGH Collector-Base Voltage  $V_{CB0} = 1500V$

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

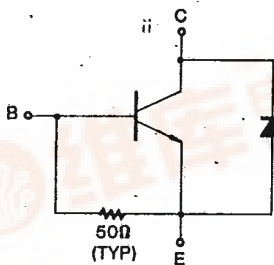
Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	1500	V
Collector-Emitter Voltage	$V_{CE0}$	800	V
Emitter-Base Voltage	$V_{EB0}$	7	V
Collector Current	$I_C$	6	A
Collector Current (Peak)	$I_{Cp}$	16	A
Collector Dissipation ( $T_c = 25^\circ C$ )	$P_C$	120	W
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55~150	$^\circ C$



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

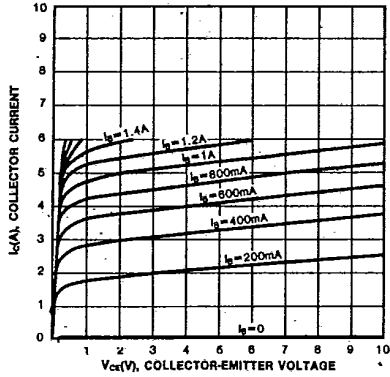
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 800V, I_E = 0$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 4V, I_C = 0$	40		130	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 5V, I_C = 1A$	8			
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5A, I_B = 1A$			5	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 5A, I_B = 1A$			1.5	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = 10V, I_C = 1A$		3		MHz
Damper Diode Turn On Voltage	$V_T$	$I_T = 6A$			2	V
Fall Time	$t_f$	$I_C = 5A, I_B = 1A$ $I_B = -2A, V_{CC} = 200V$ $R_L = 40\Omega$			0.4	$\mu S$



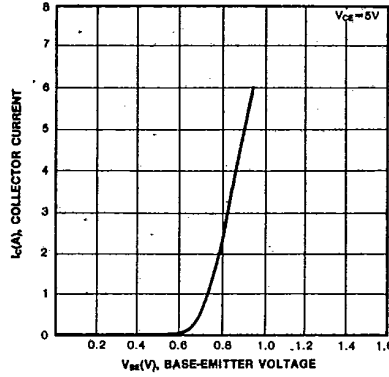
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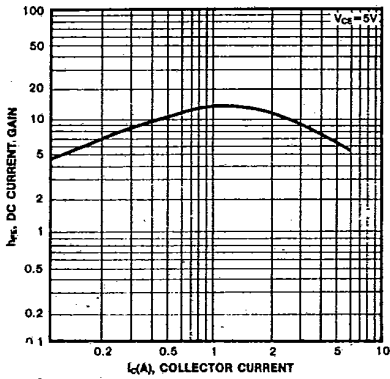
**STATIC CHARACTERISTIC**



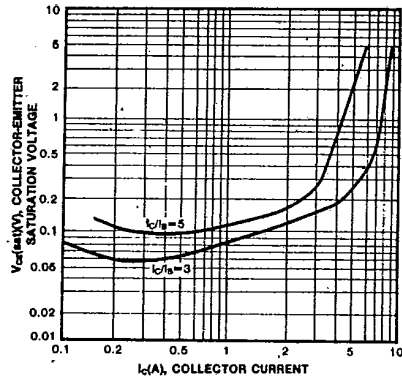
**BASE-EMITTER ON VOLTAGE**



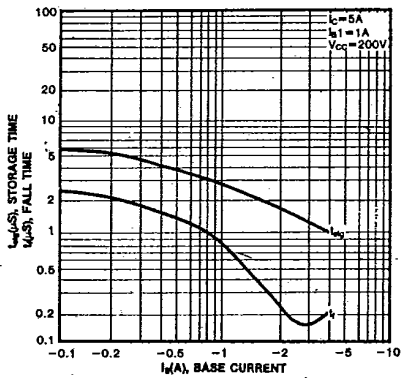
**DC CURRENT GAIN**



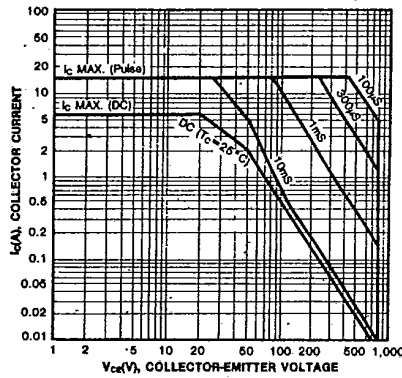
**COLLECTOR-EMITTER SATURATION VOLTAGE**



**TURN ON TIME**



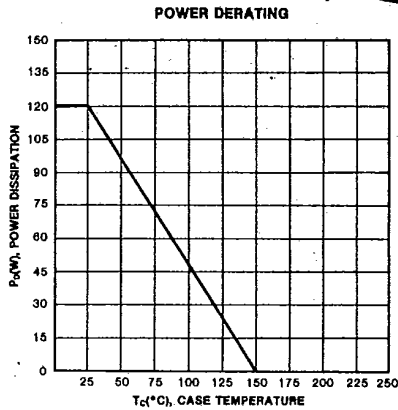
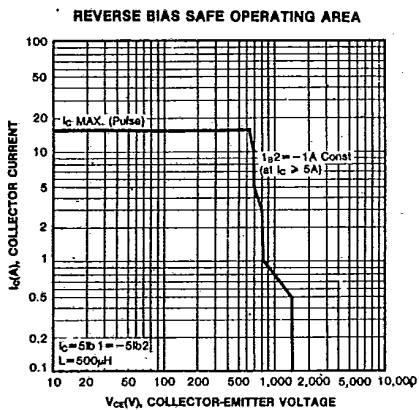
**SAFE OPERATING AREA**



**KSD5003**

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**NPN TRIPLE DIFFUSED  
PLANAR SILICON TRANSISTOR**

**KSD5004**

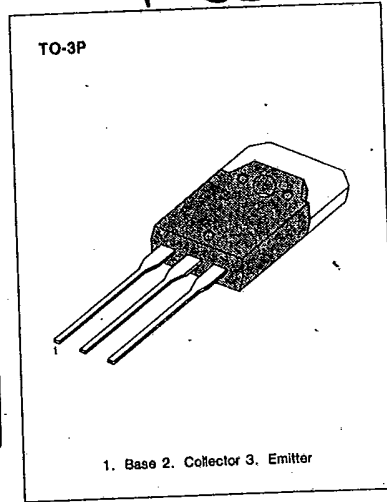
T-33-13

**COLOR TV HORIZONTAL OUTPUT  
APPLICATIONS**

HIGH Collector-Base Voltage  $V_{CBO} = 1500V$

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	1500	V
Collector-Emitter Voltage	$V_{CEO}$	800	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	2.5	A
Collector Current (Peak)	$I_{CP}$	10	A
Collector Dissipation ( $T_C = 25^\circ C$ )	$P_C$	80	W
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55~150	$^\circ C$



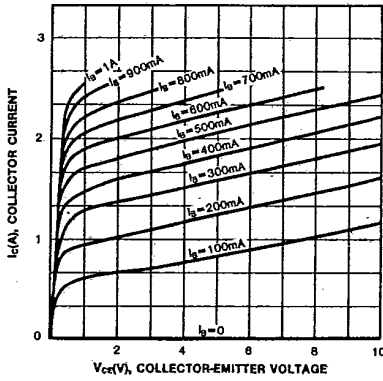
**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )**

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 800V, I_E = 0$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			1	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 5V, I_C = 0.5A$	8			
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2A, I_B = 0.6A$			8	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2A, I_B = 0.6A$		3	1.5	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = 10V, I_C = 0.5A$				MHz
Fall Time	$t_f$	$I_C = 2A, I_{B1} = 0.6A$ $I_{B2} = -1.2A, V_{CC} = 200V$ $R_L = 100\Omega$			0.4	$\mu S$

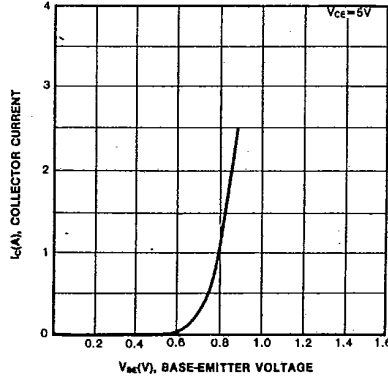
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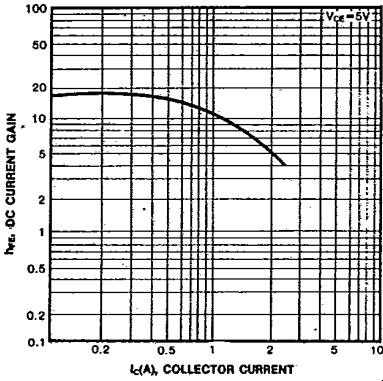
STATIC CHARACTERISTIC



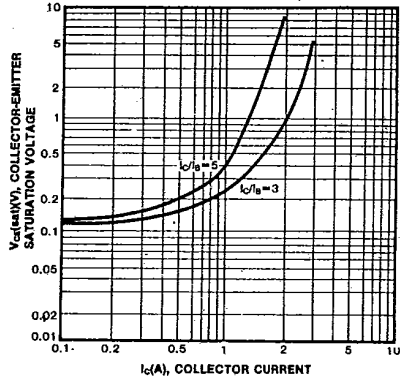
BASE-EMITTER ON VOLTAGE



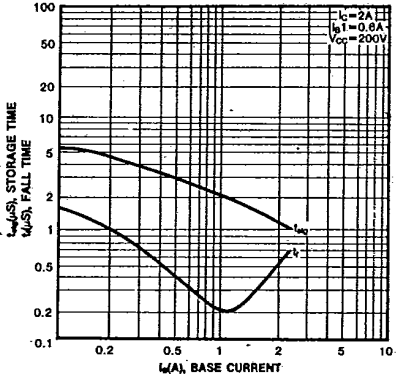
DC CURRENT GAIN



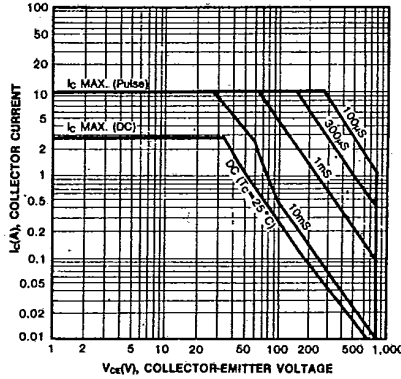
COLLECTOR-EMITTER SATURATION VOLTAGE



TURN ON TIME



SAFE OPERATING AREA



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