

SAMSUNG SEMICONDUCTOR INC

14E D 7964142 0007638 7

**KSD5001**

**NPN TRIPLE DIFFUSED  
PLANAR SILICON TRANSISTOR**

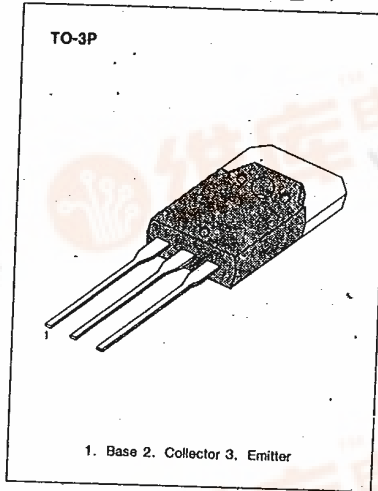
T-33-13

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

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

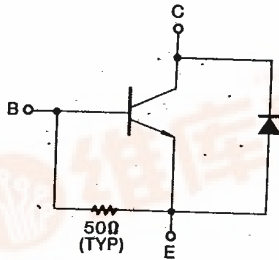
**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^{\circ}C$ )**

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	$I_c$	3.5	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	$I_{CB0}$	$V_{CB}=800V, I_E=0$			10	$\mu A$
Emitter Cutoff Current	$I_{EB0}$	$V_{EB}=4V, I_C=0$	40		130	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=5V, I_C=0.5A$	8			mA
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.5A, I_B=0.8A$			8	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=2.5A, I_B=0.8A$			1.5	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=0.5A$		3		MHz
Damper Diode Turn On Voltage	$V_T$	$I_T=3.5A$			2	V
Fall Time	$t_f$	$I_C=3A, I_{B1}=0.8A$ $I_{B2}=-1.6A, V_{CC}=200V$ $RL=66.7\Omega$			0.4	$\mu S$

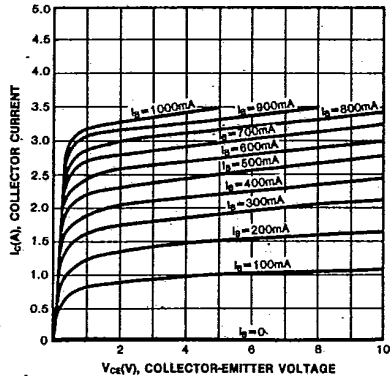


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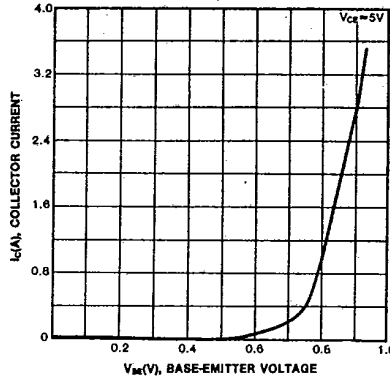
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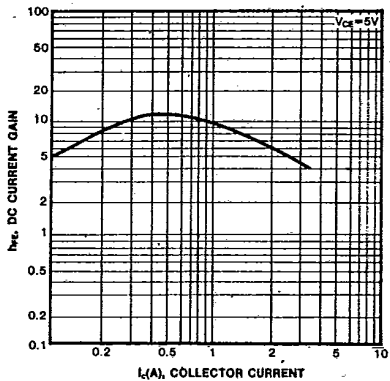
STATIC CHARACTERISTIC



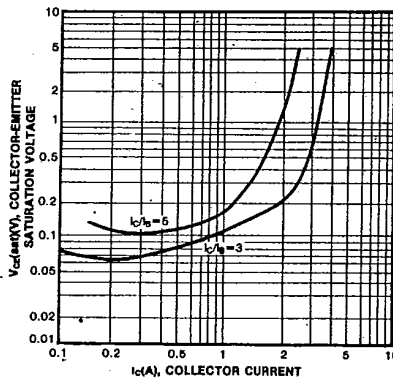
BASE-EMITTER ON VOLTAGE



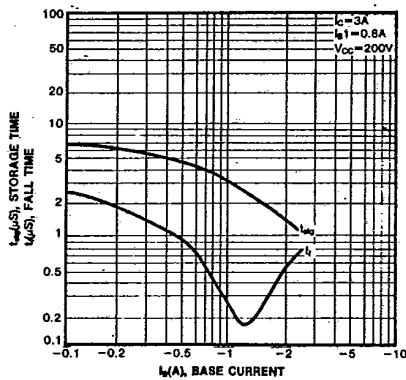
DC CURRENT GAIN



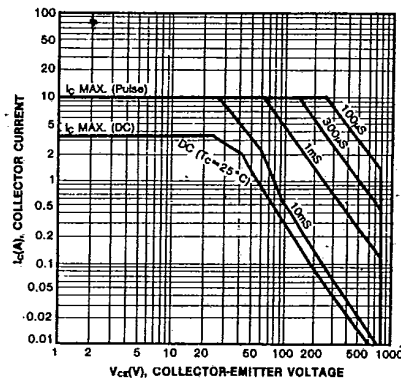
COLLECTOR-EMITTER SATURATION VOLTAGE



TURN ON TIME

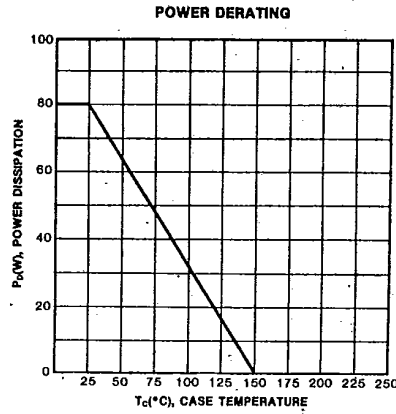
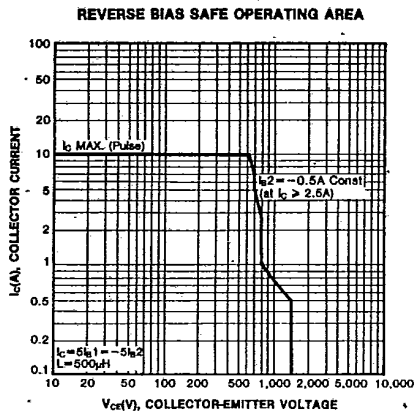


SAFE OPERATING AREAS



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**KSD5002**

**NPN TRIPLE DIFFUSED  
PLANAR SILICON TRANSISTOR**

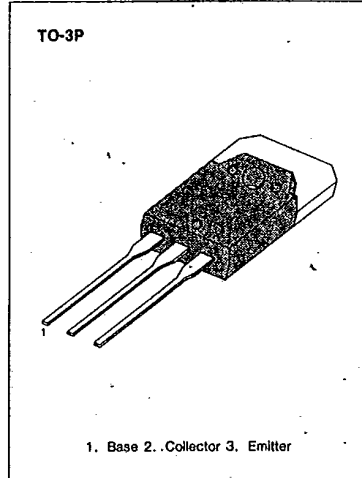
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**COLOR TV HORIZONTAL OUTPUT  
APPLICATIONS (DAMPER DIODE BUILT IN)**

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

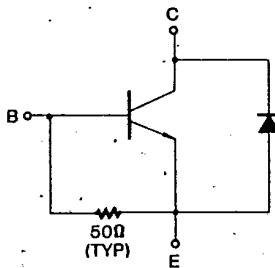
**ABSOLUTE MAXIMUM RATINGS ( $T_B=25^{\circ}C$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CSO}$	1500	V
Collector-Emitter Voltage	$V_{CES}$	800	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	5	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	$^{\circ}C$



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

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	$V_{CE(sat)}$	$I_C=4A, I_B=0.8A$			5	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=4A, I_B=0.8A$			1.5	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=1A$		3		MHz
Damper Diode Turn On Voltage	$V_f$	$I_f=5A$			2	V
Fall Time	$t_f$	$I_C=4A, I_{B1}=0.8A$ $I_{B2}=-1.6A, V_{CC}=200V$ $RL=50\Omega$			0.4	$\mu S$

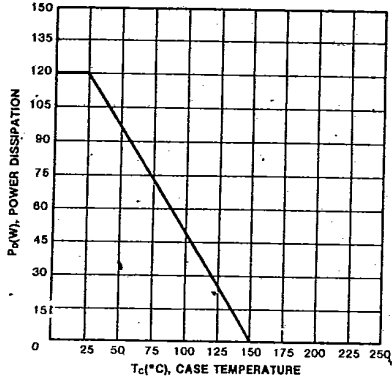


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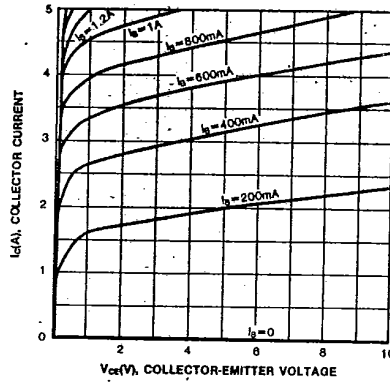
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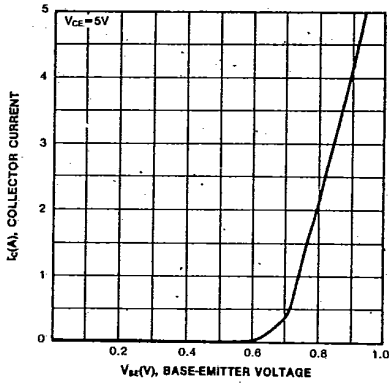
POWER DERATING



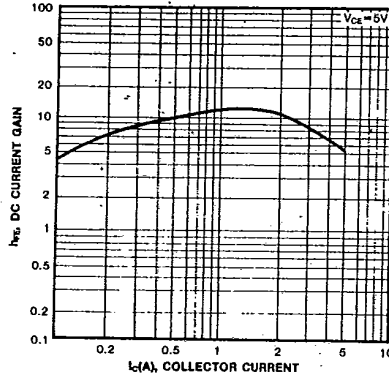
STATIC CHARACTERISTIC



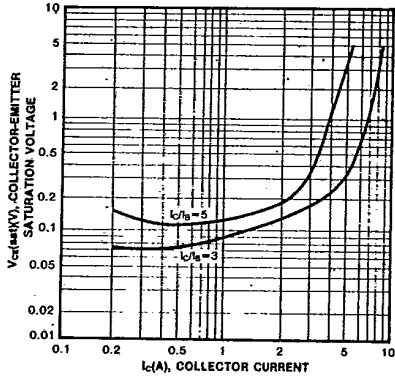
BASE-EMITTER ON VOLTAGE



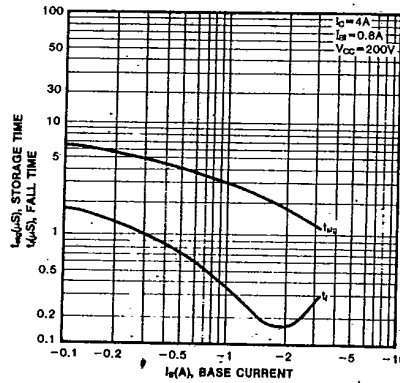
DC CURRENT GAIN



COLLECTOR-EMITTER SATURATION VOLTAGE



TURN ON TIME



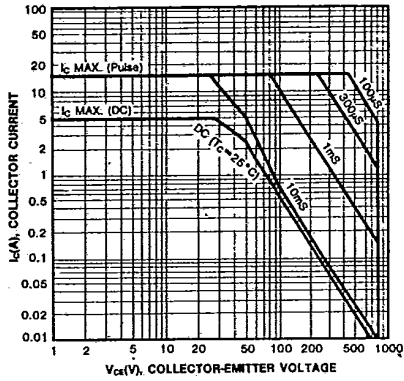
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**KSD5002**

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SAFE OPERATING AREA



REVERSE BIAS SAFE OPERATING AREA

