

KSD5001

**NPN TRIPLE DIFFUSED
PLANAR SILICON TRANSISTOR**

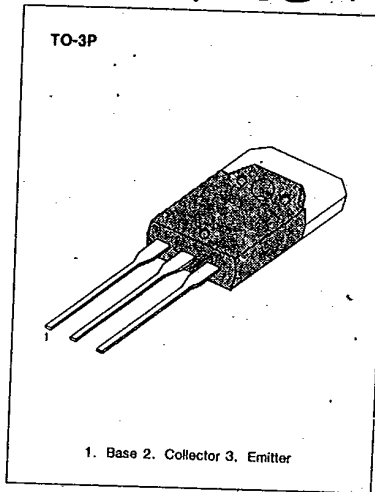
T-33-1 3

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

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

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

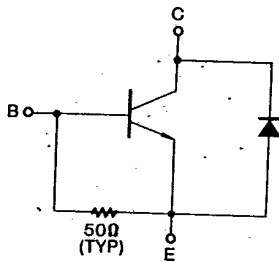
Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	1500	V
Collector-Emitter Voltage	V_{CE0}	800	V
Emitter-Base Voltage	V_{EB0}	7	V
Collector Current	I_c	3.5	A
Collector Current (Peak)	I_c	10	A
Collector Dissipation ($T_c=25^{\circ}C$)	P_c	80	W
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{stg}	-55~150	$^{\circ}C$



3

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	μA
Emitter Cutoff Current	I_{EB0}	$V_{EB}=4V, I_C=0$			130	mA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=0.5A$	40			
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.5A, I_B=0.8A$	8			V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=2.5A, I_B=0.8A$			8	V
Current Gain Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.5A$		3	1.5	MHz
Damper Diode Turn On Voltage	V_f	$I_f=3.5A$			2	V
Fall Time	t_f	$I_C=3A, I_{B1}=0.8A$ $I_{B2}=-1.8A, V_{CC}=200V$ $RL=66.7\Omega$			0.4	μS

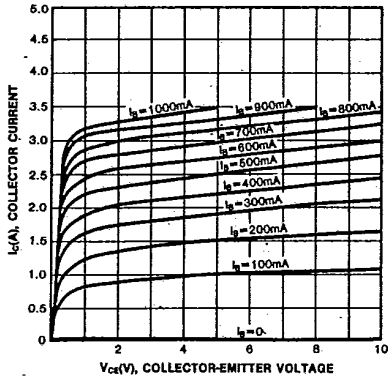


**NPN TRIPLE DIFFUSED
PLANAR SILICON TRANSISTOR**

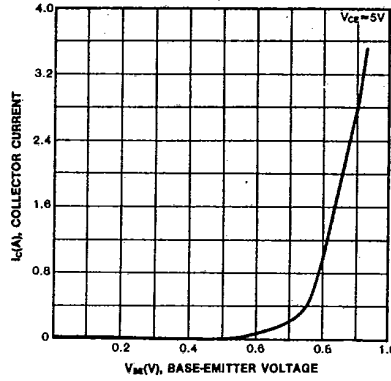
KSD5001

T-33-13

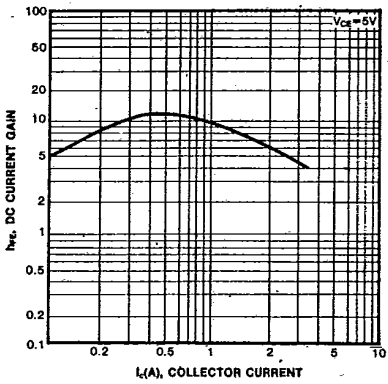
STATIC CHARACTERISTIC



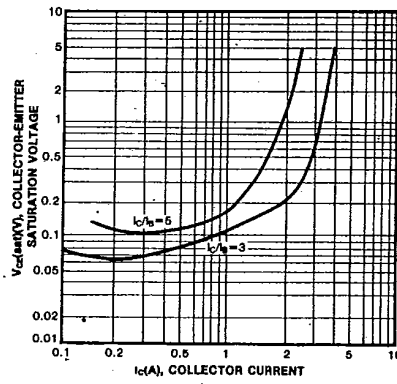
BASE-EMITTER ON VOLTAGE



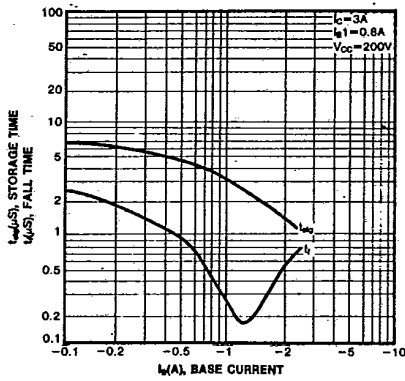
DC CURRENT GAIN



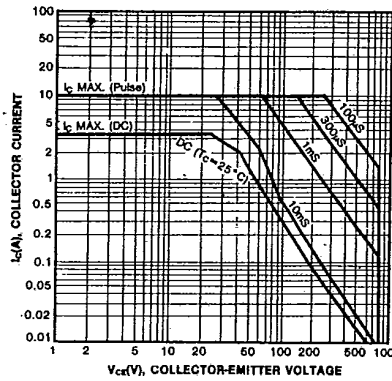
COLLECTOR-EMITTER SATURATION VOLTAGE



TURN ON TIME



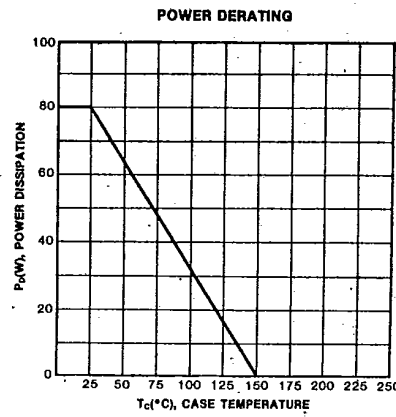
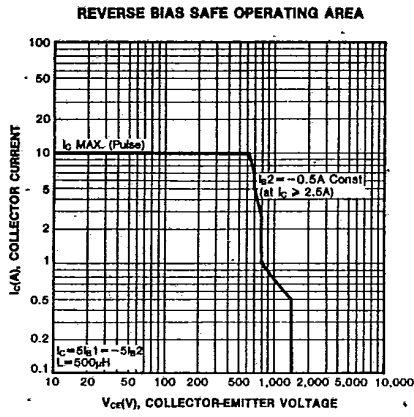
SAFE OPERATING AREAS



KSD5001

NPN TRIPLE DIFFUSED
PLANAR SILICON TRANSISTOR

T-33-13



3

KSD5002

**NPN TRIPLE DIFFUSED
PLANAR SILICON TRANSISTOR**

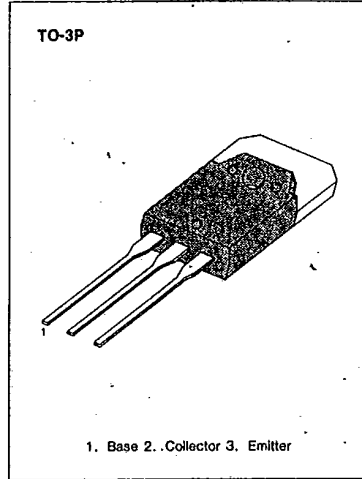
T-33-13

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

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

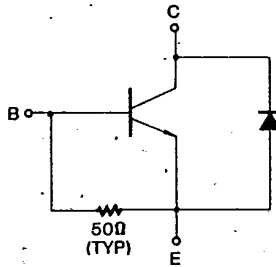
ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

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	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 ($T_a = 25^\circ C$)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 800V, I_E = 0$			10	μA
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_t	$I_t = 5A$			2	V
Fall Time	t_f	$I_C = 4A, I_{B1} = 0.8A$ $I_{B2} = -1.6A, V_{CC} = 200V$ $R_L = 50\Omega$			0.4	μS

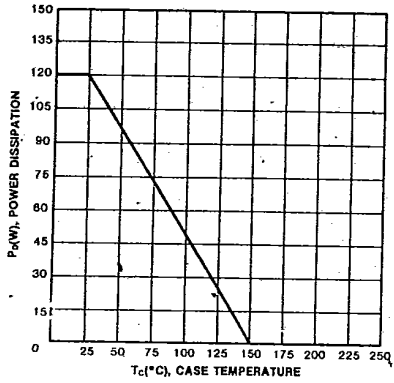


**NPN TRIPLE DIFFUSED
PLANAR SILICON TRANSISTOR**

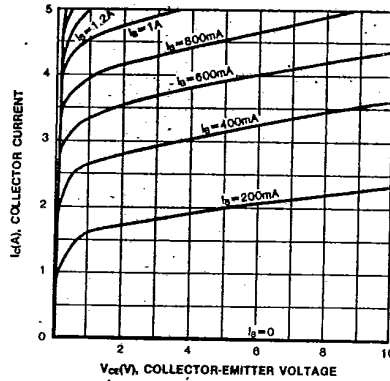
KSD5002

T-33-13

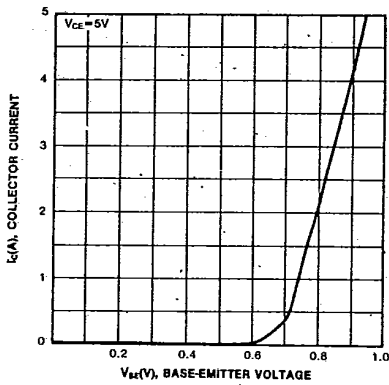
POWER DERATING



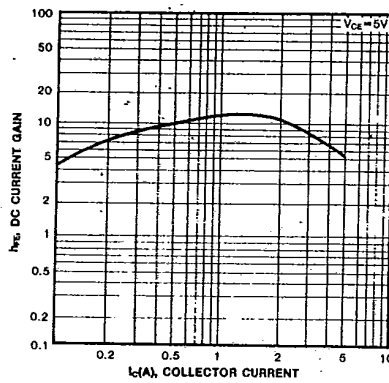
STATIC CHARACTERISTIC



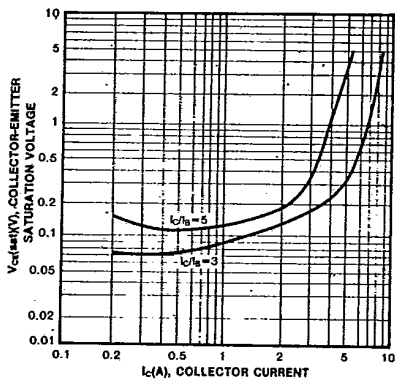
BASE-EMITTER ON VOLTAGE



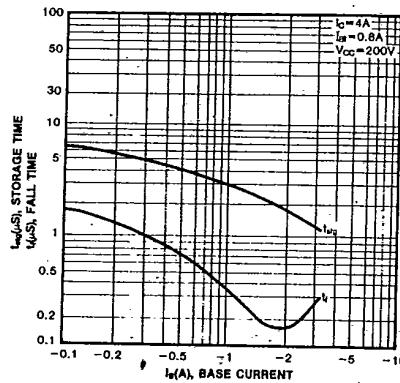
DC CURRENT GAIN



COLLECTOR-EMITTER SATURATION VOLTAGE



TURN ON TIME



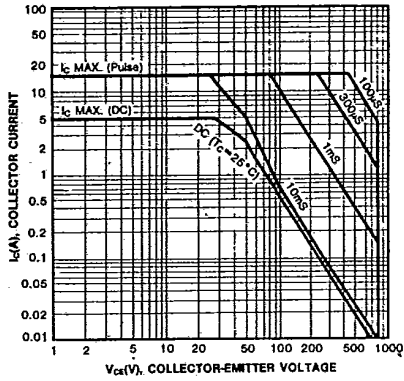
3

KSD5002

NPN TRIPLE DIFFUSED
PLANAR SILICON TRANSISTOR

T-33-13

SAFE OPERATING AREA



REVERSE BIAS SAFE OPERATING AREA

