KSD5013

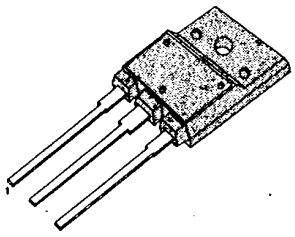
NPN TRIPLE DIFFUSED PLANAR SILICON TRANSISTOR

T-33-11

COLOR TV HORIZONTAL OUTPUT APPLICATIONS (DAMPER DIODE BUILT IN)

High Collector-Base Voltage V_{CBO}=1500V

TO-3P(F)



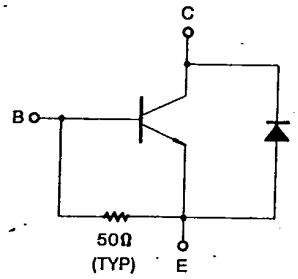
1. Base 2. Collector 3. Emitter

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	1500	V
Collector-Emitter Voltage	V_{CEO}	800	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	6	A
Collector Current (Peak)	I_C	16	A
Collector Dissipation (T_C=25°C)	P_C	60	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55~150	°C

ELECTRICAL CHARACTERISTICS (T_a=25°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			130	mA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=1A	40 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_f	I_f=6A			2	V
Fall Time	t_f	I_C=5A, I_{B1}=1A I_{B2}=−2A, V_{CC}=200V RL=40Ω			0.4	μS



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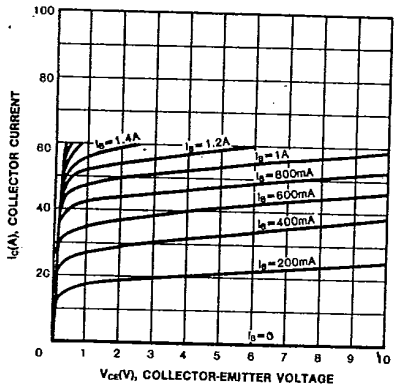
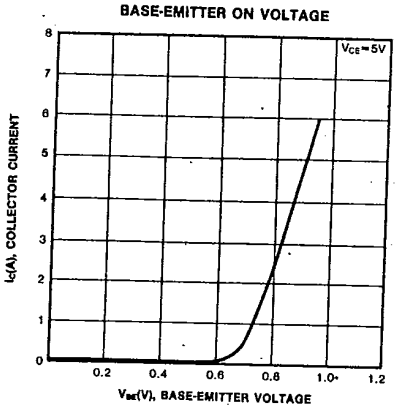
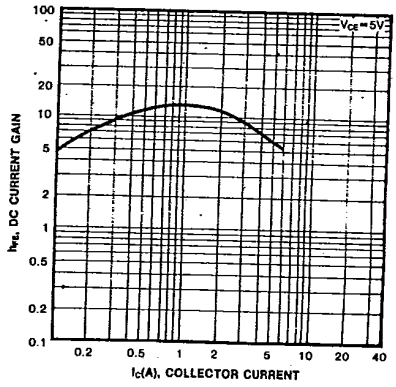
STATIC CHARACTERISTIC



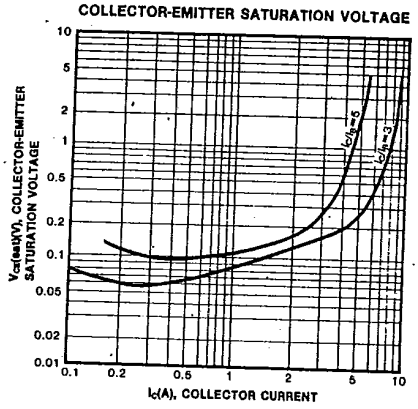
BASE-EMITTER ON VOLTAGE



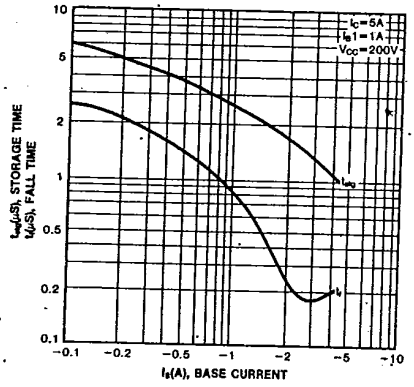
DC CURRENT GAIN



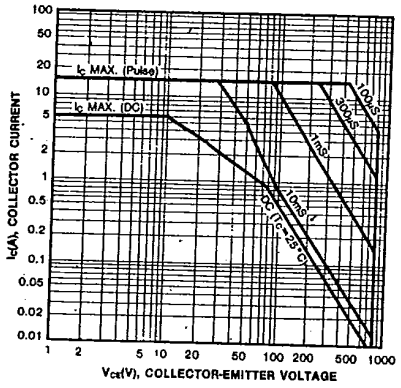
COLLECTOR-EMITTER SATURATION VOLTAGE



TURN ON TIME



SAFE OPERATING AREA



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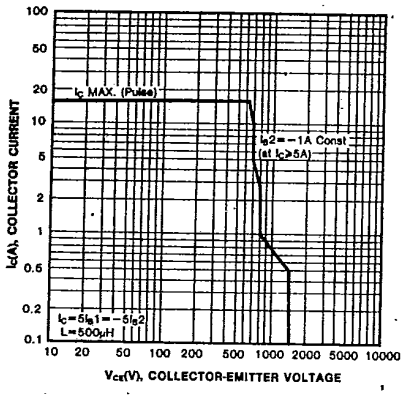
NPN TRIPLE DIFFUSED PLANAR SILICON TRANSISTOR

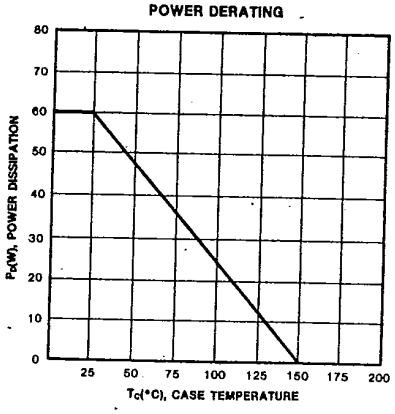
SAMSUNG SEMICONDUCTOR INC

T-33-11

REVERSE BIAS SAFE OPERATING AREA



POWER DERATING



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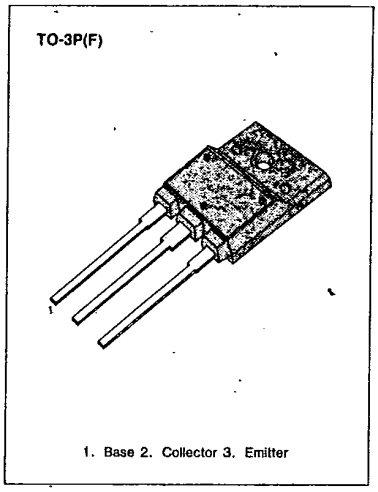
NPN TRIPLE DIFFUSED PLANAR SILICON TRANSISTOR

SAMSUNG SEMICONDUCTOR INC

T-33-11

COLOR TV HORIZONTAL OUTPUT APPLICATIONS

High Collector-Base Voltage V_{CBO}=1500V



ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	1500	V
Collector-Emitter Voltage	V_{CEO}	800	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	2.5	A
Collector Current (Peak)	I_C	10	A
Collector Dissipation (T_C=25°C)	P_C	50	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55~150	°C

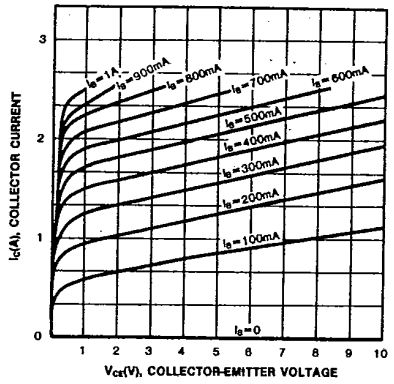
ELECTRICAL CHARACTERISTICS (T_a=25°C)

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}=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			1.5	V
Current Gain Bandwidth Product	f_T	V_{CE}=10V, I_C=0.5A		3		MHz
Fall Time	t_f	I_C=2A, I_B1=0.6A I_B2=−1.2A, RL=100Ω			0.4	μS

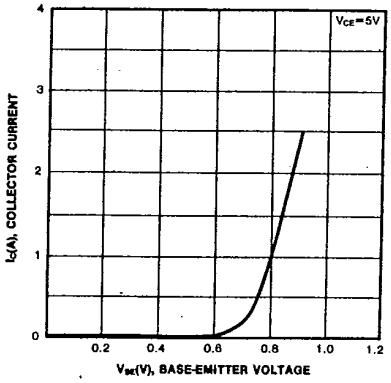
NPN TRIPLE DIFFUSED PLANAR SILICON TRANSISTOR

T-33-11

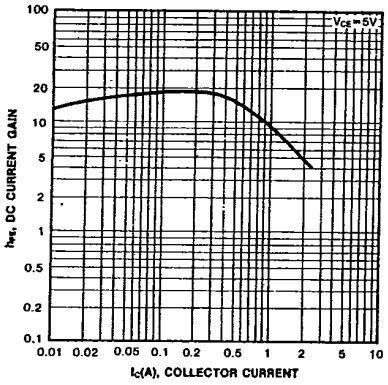
STATIC CHARACTERISTIC



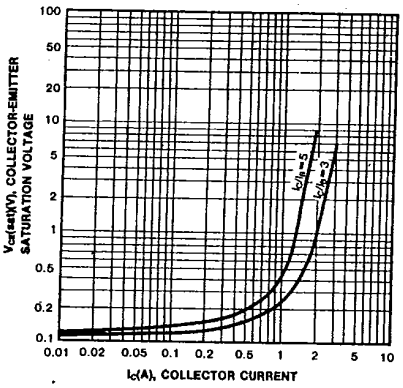
BASE-EMITTER ON VOLTAGE



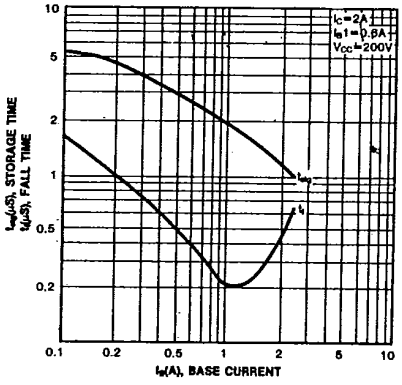
DC CURRENT GAIN



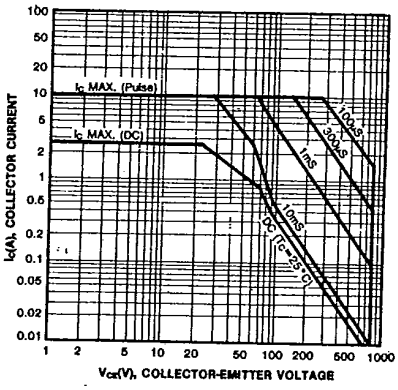
COLLECTOR-EMITTER SATURATION VOLTAGE



TURN ON TIME



SAFE OPERATING AREA



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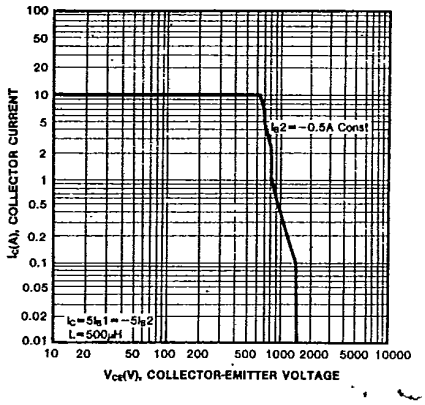
NPN TRIPLE DIFFUSED PLANAR SILICON TRANSISTOR

REVERSE BIAS SAFE OPERATING AREA



POWER DERATING