

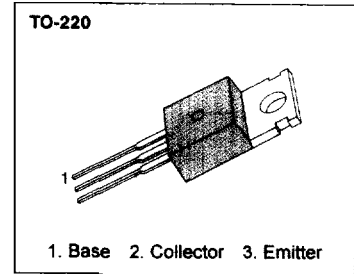
LOW FREQUENCY POWER AMPLIFIER
MEDIUM SPEED SWITCHING
INDUSTRIAL USE

- Complement to KSD560

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	- 100	V
Collector-Emitter Voltage	V_{CEO}	- 100	V
Emitter-Base Voltage	V_{EBO}	- 7	V
Collector Current (DC)	I_C	- 5	A
* Collector Current (Pulse)	I_C	- 8	A
Base Current (DC)	I_B	- 0.5	A
Collector Dissipation ($T_A=25^\circ\text{C}$)	P_C	1.5	W
Collector Dissipation ($T_C=25^\circ\text{C}$)	P_C	30	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	- 55 ~ 150	$^\circ\text{C}$

* $PW \leq 10\text{ms}$, Duty Cycle $\leq 50\%$



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

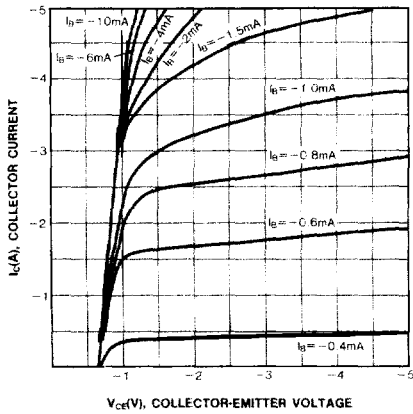
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Emitter Sustaining Voltage	$V_{CBO(sus)}$	$I_C = - 3A, I_B1 = - 3mA, L = 1mH$	- 100			V
Collector Emitter Sustaining Voltage	$V_{CEX(sus)1}$	$I_C = - 3A, I_B1 = - I_B2 = - 3mA$ $V_{BE(off)} = 5V, L = 180\mu H$ Clamped	- 100			V
Collector Emitter Sustaining Voltage	$V_{CEX(sus)2}$	$I_C = - 6A, I_B1 = - 12mA$ $I_B2 = 3mA, V_{BE(off)} = 5V$ $L = 180\mu H, \text{Clamped}$	- 100			V
Collector Cutoff Current	I_{CBO}	$V_{CB} = - 100V, I_E = 0$			- 10	μA
Collector Cutoff Current	I_{CER}	$V_{CE} = - 100V, R_{BE} = 51\Omega$ $T_A = 125^\circ\text{C}$			- 1	mA
Collector Cutoff Current	I_{CEX1}	$V_{CE} = - 100V, V_{BE(off)} = 1.5V$			- 10	μA
Collector Cutoff Current	I_{CEX2}	$V_{CE} = - 100V, V_{BE(off)} = 1.5V$ $T_A = 125^\circ\text{C}$			- 1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = - 5V, I_C = 0$			- 3	mA
*DC Current Gain	h_{FE1}	$V_{CE} = - 2V, I_C = - 3A$	2000		15000	
	h_{FE2}	$V_{CE} = - 2V, I_C = - 5A$	500			
* Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = - 3A, I_B = - 3mA$			- 1.5	V
* Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = - 3A, I_B = - 3mA$			- 2	V
Turn On Time	t_{ON}	$I_C = - 3A, R_L = 17\Omega$		0.5		μS
Storage	t_s	$I_B1 = - I_B2 = - 3mA$		1		μS
Fall time	t_f	$V_{CC} = - 50V$		1		μS

* Pulse Test : $PW \leq 350\mu S$, Duty Cycle $\leq 2\%$

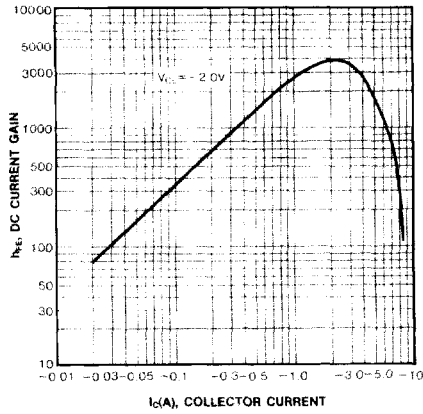
$h_{FE}(1)$ CLASSIFICATION

Classification	R	O	Y
$h_{FE}(1)$	2000-5000	3000-7000	5000-15000

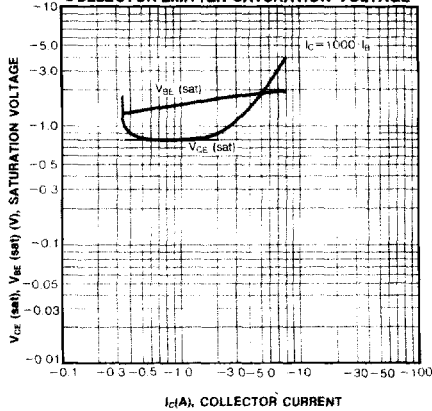
STATIC CHARACTERISTIC



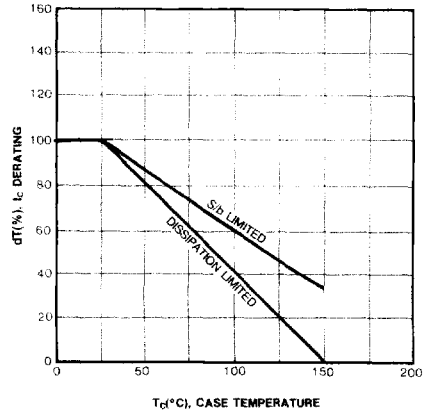
DC CURRENT GAIN



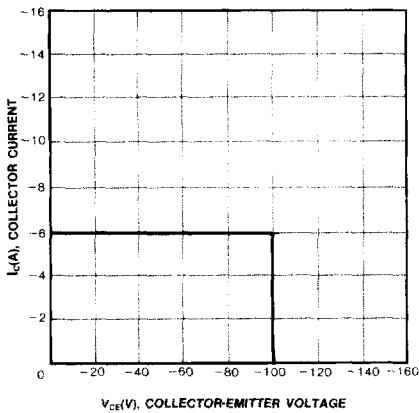
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



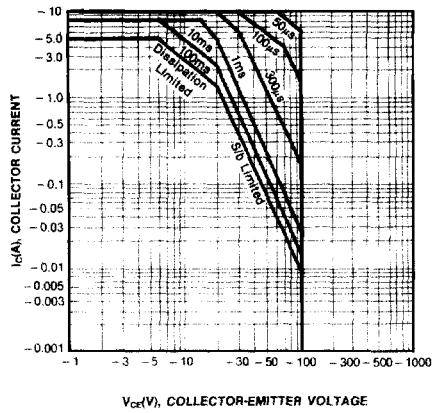
DERATING CURVE OF SAFE OPERATING AREAS

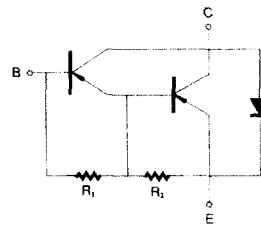
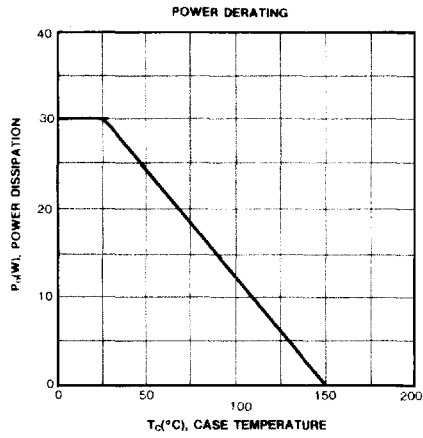


REVERSE BIAS SAFE OPERATING AREAS



SAFE OPERATING AREA





R₁ = 3kΩ
R₂ = 300Ω