

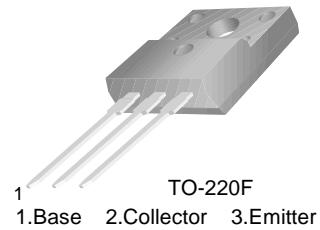


KSD1589

KSD1589

Low Frequency Power Amplifier Low Speed Switching Industrial Use

- Complement to KSB1098

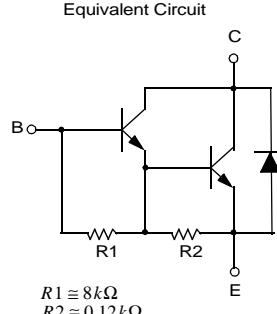


NPN Silicon Darlington Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	5	A
I_{CP}	*Collector Current (Pulse)	8	A
I_B	Base Current	0.5	A
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1.5	W
	Collector Dissipation ($T_C=25^\circ\text{C}$)	20	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

* PW≤10ms, Duty Cycle≤50%



Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	$V_{CB} = 100V$, $I_E = 0$			1	μA
h_{FE1} h_{FE2}	*DC Current Gain	$V_{CE} = 2V$, $I_C = 3A$ $V_{CE} = 2V$, $I_C = 5A$	2K 500	6K	15K	
$V_{CE(\text{sat})}$	*Collector-Emitter Saturation Voltage	$I_C = 3A$, $I_B = 3mA$		0.9	1.5	V
$V_{BE(\text{sat})}$	Base-Emitter Saturation Voltage	$I_C = 3A$, $I_B = 3mA$		1.6	2	V
t_{ON}	Turn On Time	$V_{CC} = 50V$, $I_C = 3A$ $I_{B1} = -I_{B2} = 3mA$ $R_L = 16.7\Omega$		1		μs
t_{stg}	Storage Time			3.5		μs
t_f	Fall Time			1.2		μs

* Pulse Test: PW≤350μs, Duty Cycle≤2% Pulsed

h_{FE} Classification

Classification	R	O	Y
h_{FE1}	2000 ~ 5000	3000 ~ 7000	5000 ~ 15000

Typical Characteristics

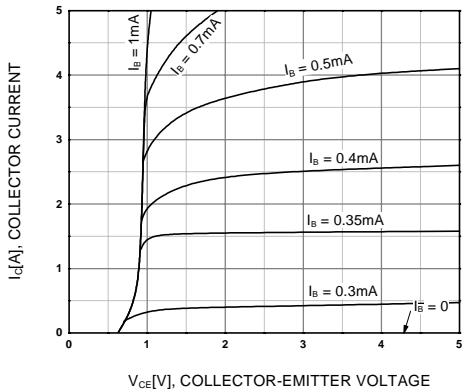


Figure 1. Static Characteristic

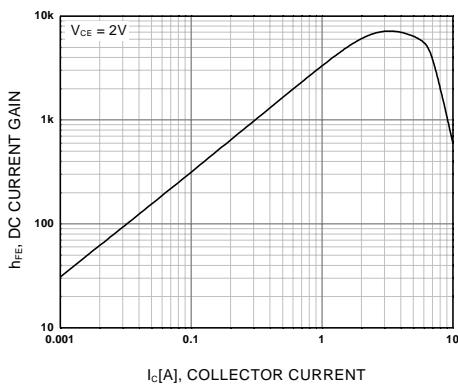
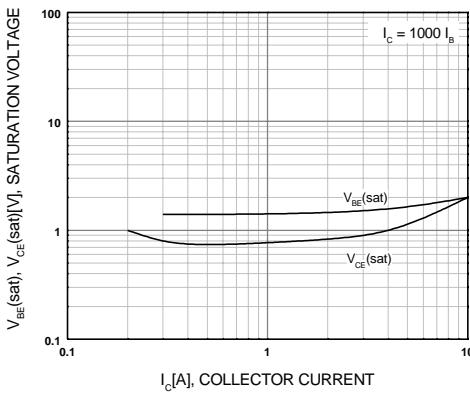


Figure 2. DC current Gain



**Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage**

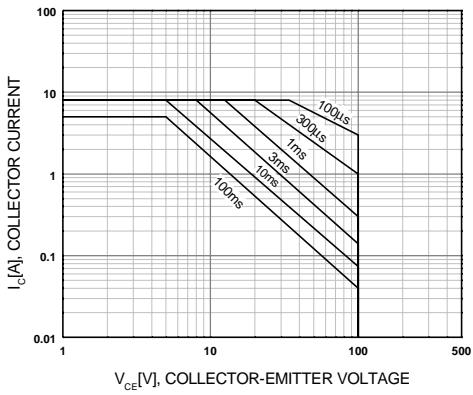


Figure 4. Safe Operating Area

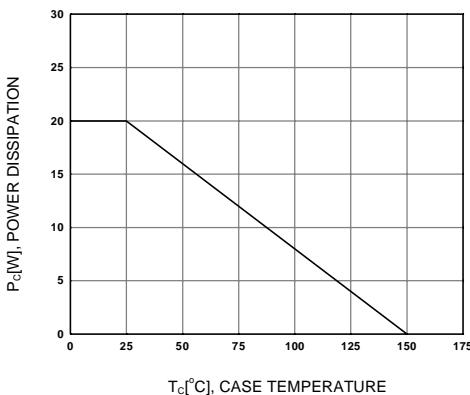


Figure 5. Power Derating