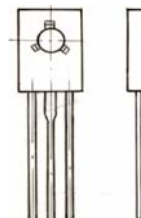


**TO-126 Plastic-Encapsulate Transistors****KSD1691** TRANSISTOR (NPN)**FEATURES**

- Low Collector-Emitter Saturation Voltage & Large Collector Current
- High Power Dissipation: $P_C = 1.3W$ ($T_a=25^\circ C$)

TO-126

1. EMITTER
2. COLLECTOR
3. BASE



1 2 3

MAXIMUM RATINGS ($T_A=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current (DC)	5	A
P_C	Collector Power Dissipation ($T_a = 25^\circ C$)	1.3	W
	Collector Power Dissipation ($T_c = 25^\circ C$)	20	W
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature	-55-150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	7			V
Collector cut-off current	I_{CBO}	$V_{CB}=50V, I_E=0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=7V, I_C=0$			10	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1V, I_C=2A$	100		400	
	$h_{FE(2)}$	$V_{CE}=1V, I_C=0.1A$	60			
	$h_{FE(3)}$	$V_{CE}=1V, I_C=5A$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2A, I_B=0.2A$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=2A, I_B=0.2A$			1.2	V
Turn ON Time	t_{on}	$V_{CC} = 10V, I_C = 2A$, $I_{B1}=-I_{B2}=0.2A, R_L=5\Omega$			1	μS
Storage Time	t_{stg}				2.5	μS
Fall Time	t_f				1	μS

CLASSIFICATION OF $h_{FE(1)}$

Rank	O	Y	G
Range	100-200	160-320	200-400

Typical Characteristics

KSD1691

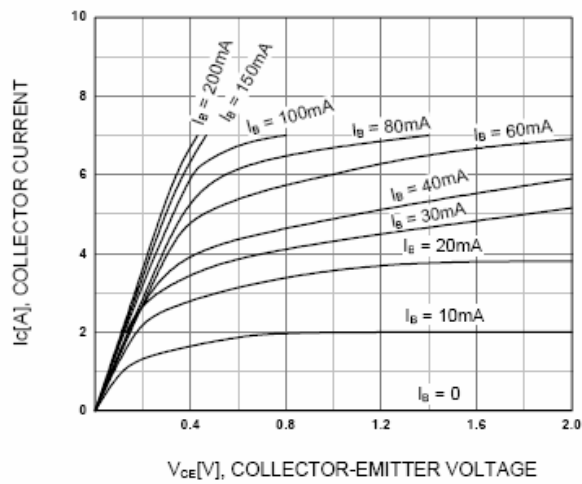


Figure 1. Static Characteristic

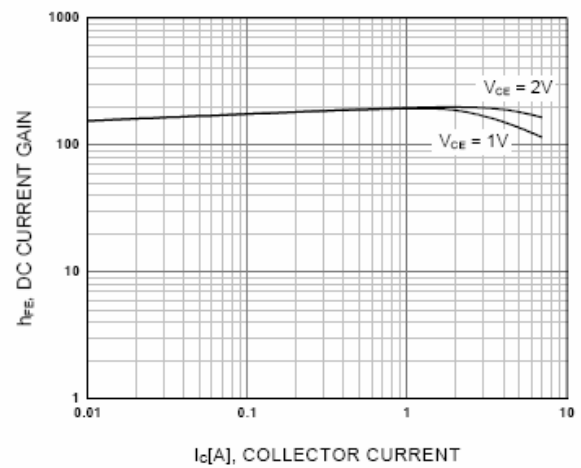


Figure 2. DC current Gain

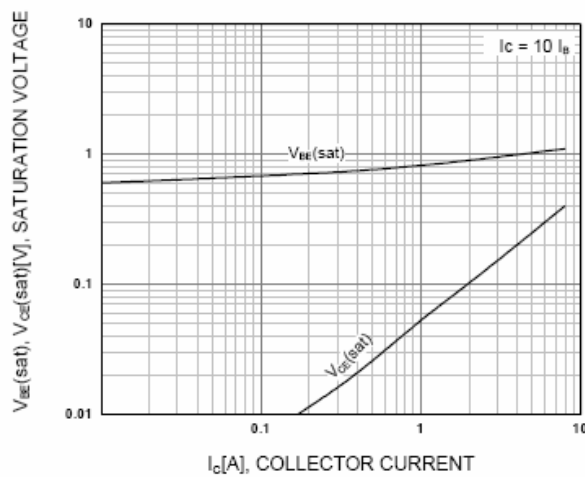


Figure 3. Collector-Emitter Saturation Voltage
Base-Emitter Saturation Voltage

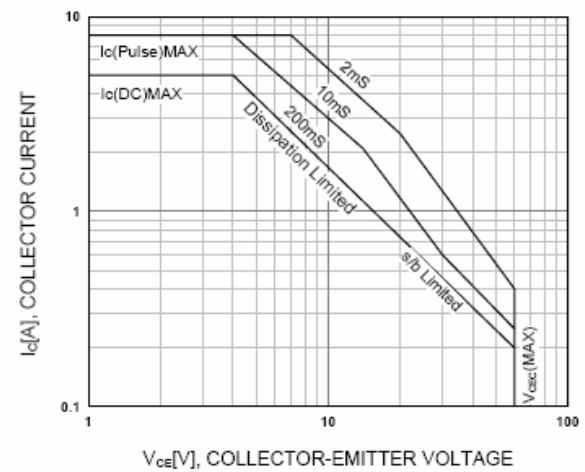


Figure 4. Forward Bias Safe Operating Area

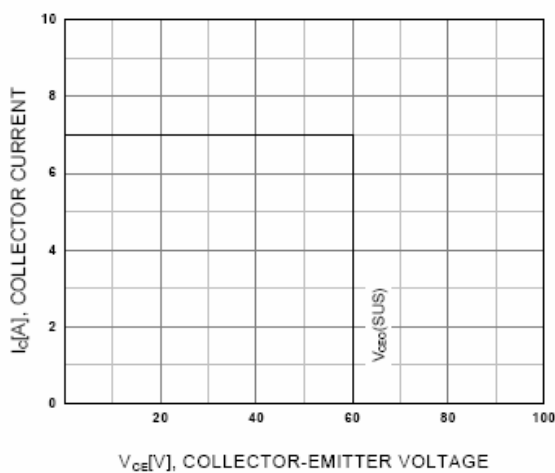


Figure 5. Reverse Bias Safe Operating Area

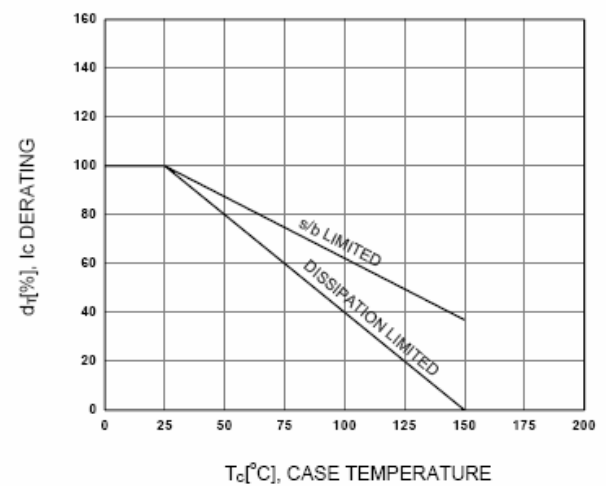


Figure 6. Derating Curve of Safe Operating Areas

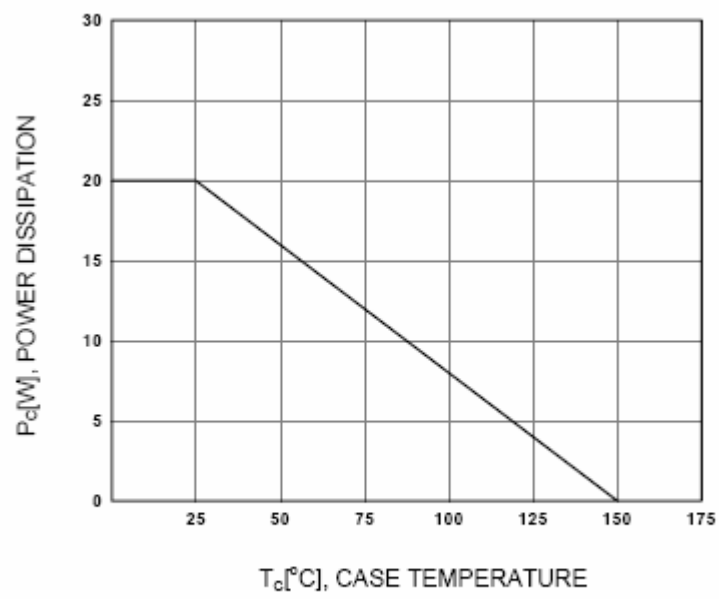


Figure 7. Power Derating