

KSD1417

NPN SILICON DARLINGTON TRANSISTOR

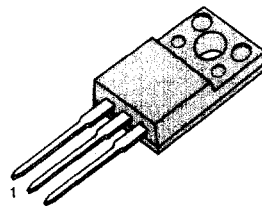
HIGH POWER SWITCHING APPLICATIONS

- High DC Current Gain
- Low Collector Emitter Saturation Voltage
- Complement to KSB1022

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	60	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	7	A
Collector Current (Pulse)	I_C	10	A
Base Current	I_B	0.7	A
Collector Dissipation ($T_A=25^\circ\text{C}$)	P_C	2	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	$^\circ\text{C}$

TO-220F

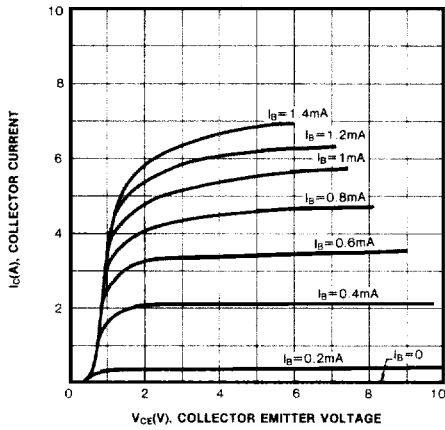


1. Base 2. Collector 3. Emitter

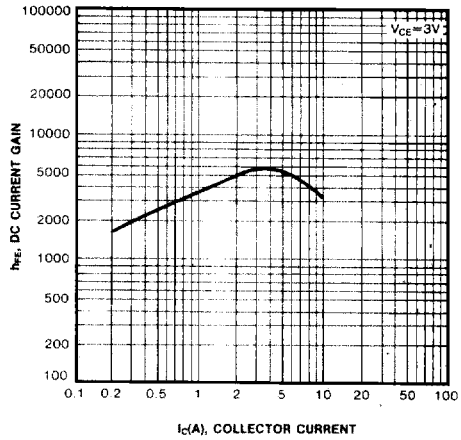
ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Emitter Breakdown Voltage	BV_{CEO}	$I_C = 50\text{mA}, I_B = 0$	60			V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 60\text{V}, I_E = 0$			100	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			3	mA
DC Current Gain	h_{FE1}	$V_{CE} = 3\text{V}, I_C = 3\text{A}$	2000		15K	
	h_{FE2}	$V_{CE} = 3\text{V}, I_C = 7\text{A}$	1000			
Collector Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = 3\text{A}, I_B = 6\text{mA}$		0.9	1.5	V
	$V_{CE(sat)2}$	$I_C = 7\text{A}, I_B = 14\text{mA}$		1.2	2	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 3\text{A}, I_B = 6\text{mA}$		1.5	2.5	V
Turn On Time	t_{ON}	$I_B1 = -I_B2 = 6\text{mA}$		0.8		μS
Storage Time	t_{STG}	$V_{CC} = 45\text{V}$		3		μS
Fall Time	t_F			2.5		μS

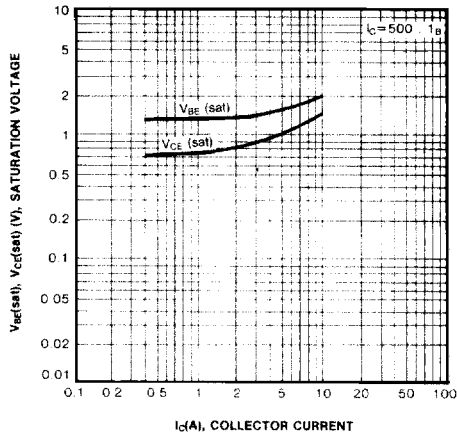
STATIC CHARACTERISTIC



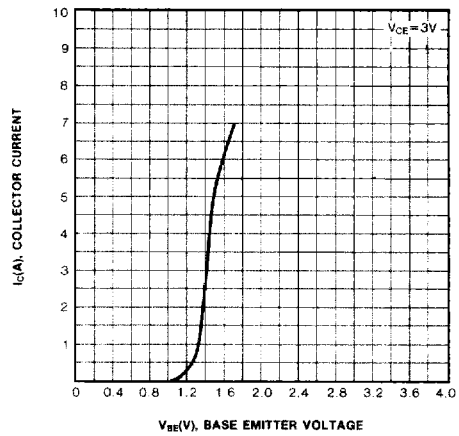
DC CURRENT GAIN



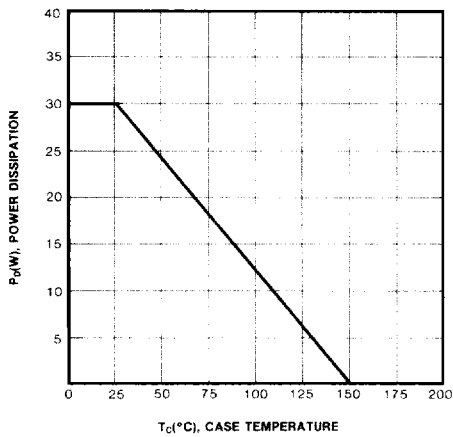
BASE EMITTER SATURATION VOLTAGE
COLLECTOR EMITTER SATURATION VOLTAGE



BASE EMITTER ON VOLTAGE



POWER DERATING



SAFE OPERATING AREA

