Silicon PNP Transistor

BD380

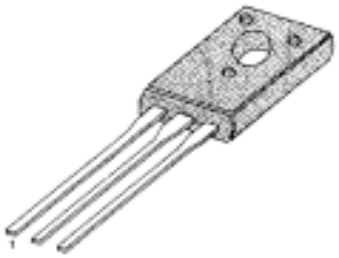
DATASHEET

Medium Power And Switching Applications

Technical Data (Short Form):

Ucb	-	100V
Uce	-	80V
Ic	-	2A
N	-	25W
F	-	-
hFE	-	40-375

Case: TO-126



1. Emitter 2. Collector 3. Base

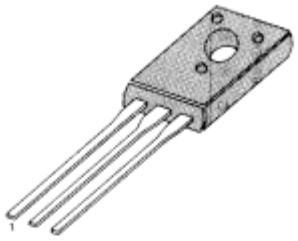
OEM: Samsung

Source: Samsung CD 1995

MEDIUM POWER LINEAR AND SWITCHING APPLICATIONS

- **Complement to BD375, BD377 and BD379 respectively**

TO-126



1. Emitter 2. Collector 3. Base

ABSOLUTE MAXIMUM RATINGS ($T_a = 25°C$)

Characteristic		Symbol	Rating	Unit
Collector Base Voltage	: BD376	V_{CBO}	− 50	V
	: BD378		− 75	V
	: BD380		− 100	V
Collector Emitter Voltage:	BD376	V_{CEO}	− 45	V
	: BD378		− 60	V
	: BD380		− 80	V
Emitter Base Voltage		V_{EBO}	− 5	V
Collector Current (DC)		I_C	− 2	A
Collector Current (Pulse)		I_C	− 3	A
Base Current		I_B	− 1	A
Collector Dissipation ($T_c = 25°C$)		P_C	25	W
Junction Temperature		Tj	150	°C
Storage Temperature		Tstg	− 55 ~ 150	°C

ELECTRICAL CHARACTERISTICS ($T_a = 25°C$)

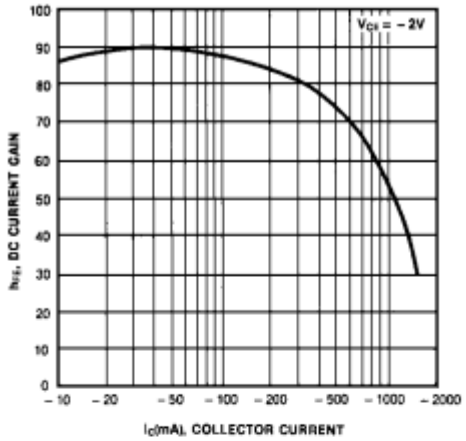
Characteristic		Symbol	Test Condition	Min	Typ	Max	Unit
*Collector Emitter Sustaining Voltage:	BD376	$V_{CEO}(sus)$	$I_C = -100mA$, $I_B = 0$	− 45			V
	: BD378			− 60			V
	: BD380			− 80			V
Collector Base Voltage	: BD376	V_{CBO}	$I_C = -100\mu A$, $I_E = 0$	− 50			V
	: BD378			− 75			V
	: BD380			− 100			V
Collector Cutoff Current	: BD376	I_{CBO}	$V_{CB} = -45V$, $I_E = 0$			− 2	μA
	: BD378		$V_{CB} = -60V$, $I_E = 0$			− 2	μA
	: BD380		$V_{CB} = -80V$, $I_E = 0$			− 2	μA
Emitter Cutoff Current		I_{EBO}	$V_{EB} = -5V$, $I_C = 0$			− 100	μA
*DC Current Gain		$h_{FE}1$	$V_{CE} = -2V$, $I_C = -0.15A$	40		375	
		$h_{FE}2$	$V_{CE} = -2V$, $I_C = -1A$	20			
*Collector Emitter Saturation Voltage		$V_{CE}(sat)$	$I_C = -1A$, $I_B = -0.1A$			− 1	V
*Base Emitter On Voltage		$V_{BE}(on)$	$V_{CE} = -2V$, $I_C = -1A$			− 1.5	V
Turn On Time		t_{on}	$V_{CC} = -30V$, $I_C = -0.5A$ $I_{B1} = -0.05A$		50		nS
Turn Off Time		t_{off}	$V_{CC} = -30V$, $I_C = -0.5A$ $I_{B1} = -I_{B2} = -0.05A$		500		nS

*Pulse Test: PW = 300μS, duty cycle = 2% pulsed

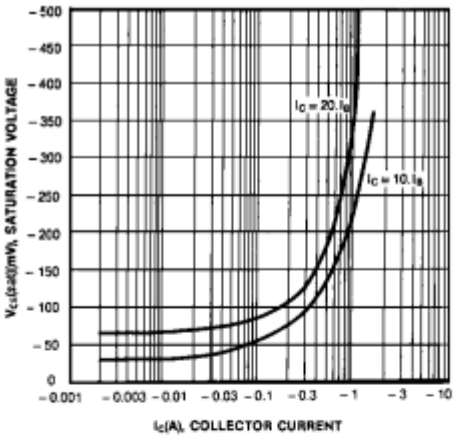
h_{FE} (1) CLASSIFICATION

Classification	6	10	16	25
$h_{FE}1$	40-100	63-160	100-250	150-375

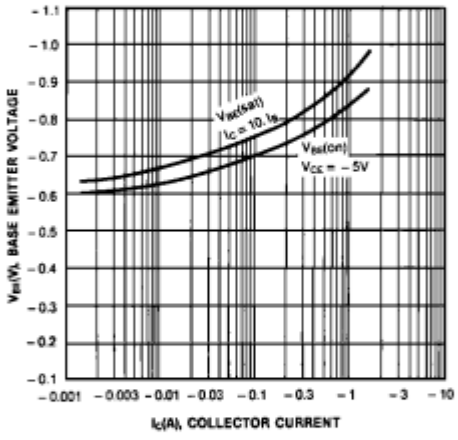
DC CURRENT GAIN



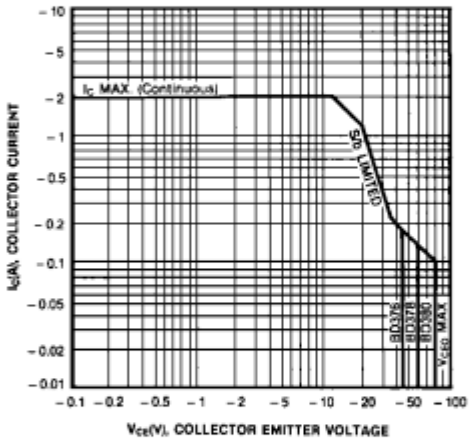
COLLECTOR EMITTER SATURATION VOLTAGE



BASE EMITTER VOLTAGE



SAFE OPERATING AREA



POWER DERATING