

**Features**

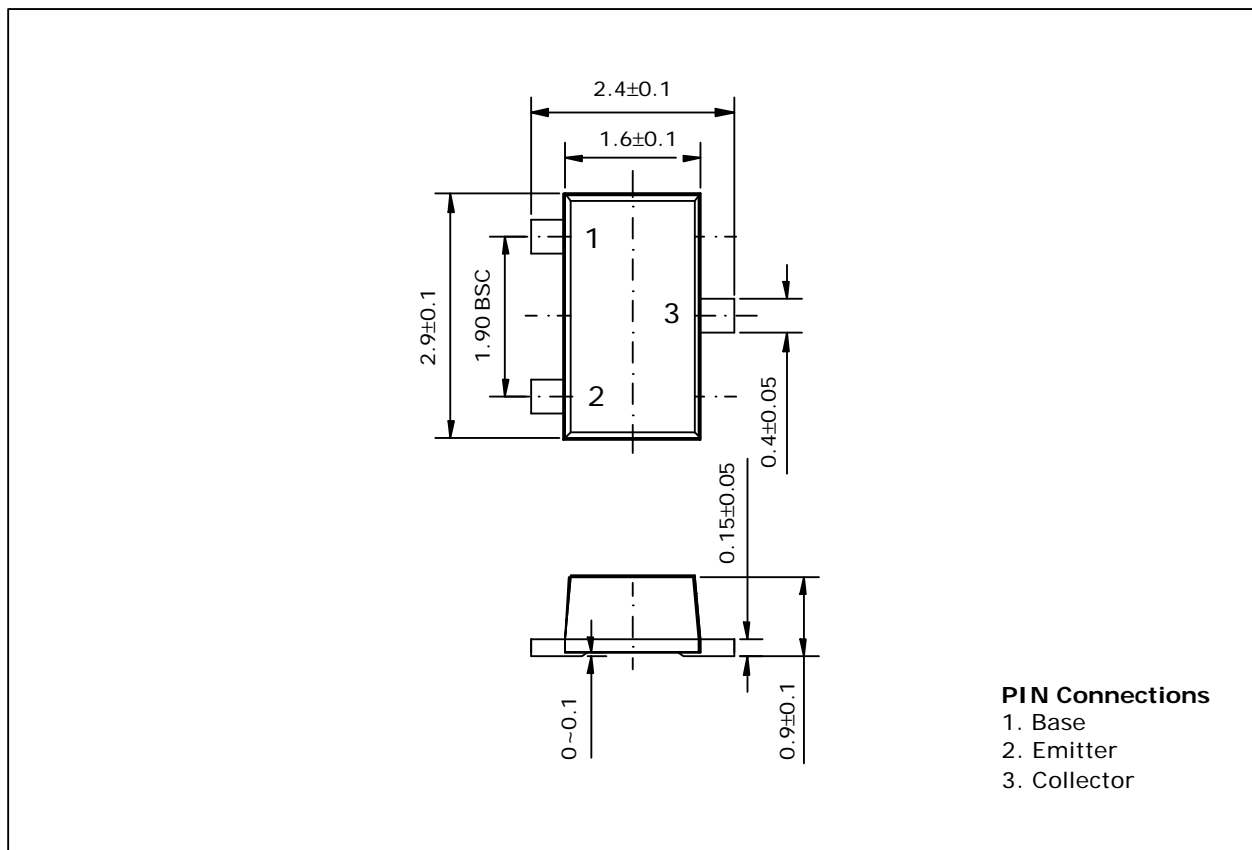
- Extremely low collector-to-emitter saturation voltage  
( $V_{CE(SAT)}=0.07V$  Typ. @ $I_C/I_B=100mA/10mA$ )
- Suitable for low voltage large current drivers
- Complementary pair with DP050S
- Switching Application.

**Ordering Information**

Type NO.	Marking	Package Code
DN050S	N02	SOT-23F

**Outline Dimensions**

unit : mm



## Absolute maximum ratings

(Ta=25° C)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CBO}$	15	V
Collector-Emitter voltage	$V_{CEO}$	12	V
Emitter-Base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	500	mA
Collector dissipation	$P_C$	200	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ 150	°C

## Electrical Characteristics

(Ta=25° C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	$BV_{CBO}$	$I_C = 50\mu A, I_E = 0$	15	-	-	V
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_C = 1mA, I_B = 0$	12	-	-	V
Emitter-Base breakdown voltage	$BV_{EBO}$	$I_E = 50\mu A, I_C = 0$	5	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 12V, I_E = 0$	-	-	0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$	-	-	0.1	$\mu A$
DC current gain	$h_{FE1}$	$V_{CE} = 1V, I_C = 100mA$	200	-	450	-
	$h_{FE2}$	$V_{CE} = 1V, I_C = 500mA$	70	-	-	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100mA, I_B = 10mA$	-	-	0.25	V
Base-Emitter saturation voltage	$V_{BE(sat)}$	$I_C = 100mA, I_B = 10mA$	-	-	1.2	V
Transition frequency	$f_T$	$V_{CE} = 5V, I_C = 20mA$	-	120	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$	-	4.5	-	pF

Electrical Characteristic Curves

Fig. 1  $P_C - T_a$

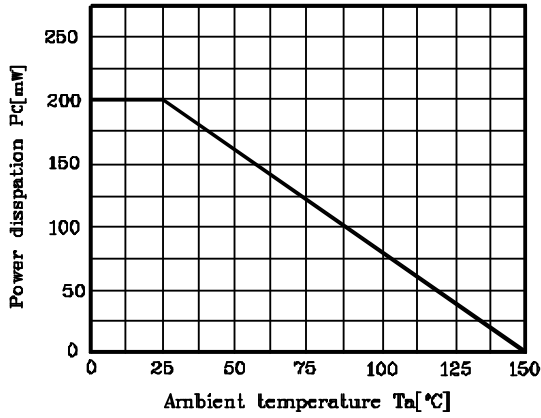


Fig. 2  $I_C - V_{BE}$

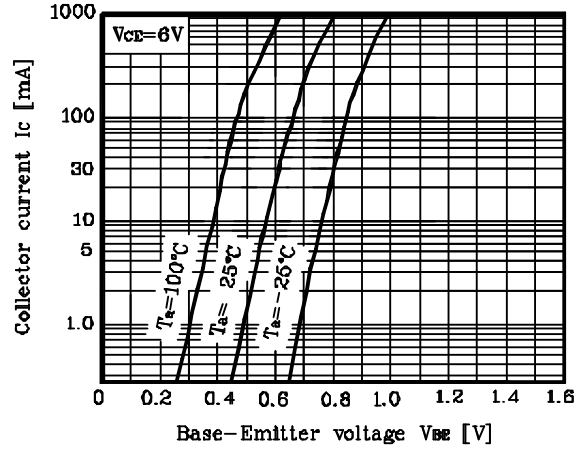


Fig. 3  $h_{FE} - I_C$

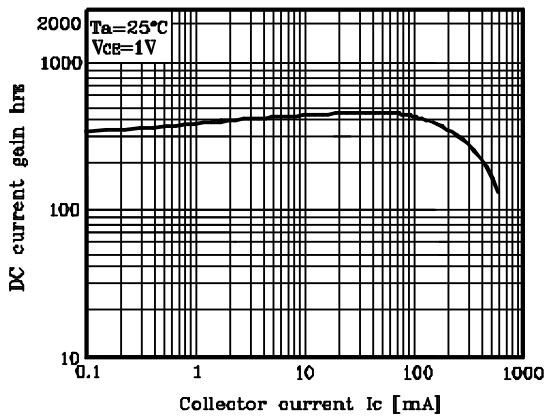


Fig. 4  $I_C - V_{CE}$

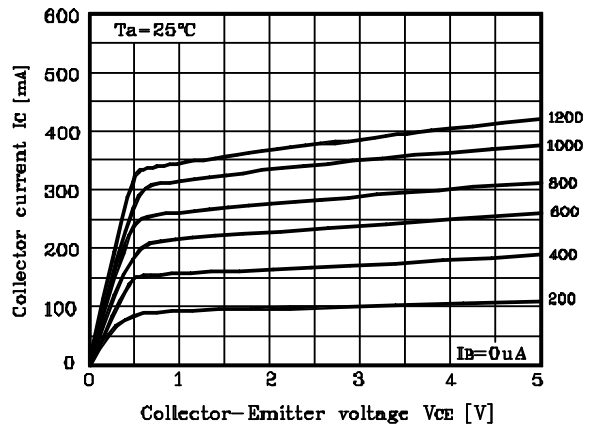


Fig. 5  $V_{CE(sat)} - I_C$

