

**Description**

- Extremely low collector-to-emitter saturation voltage  
(  $V_{CE(SAT)}=0.2V$  Typ. @  $I_C/I_B=3A/150mA$  )
- Suitable for low voltage large current drivers
- Complementary pair with DP500F
- Switching Application

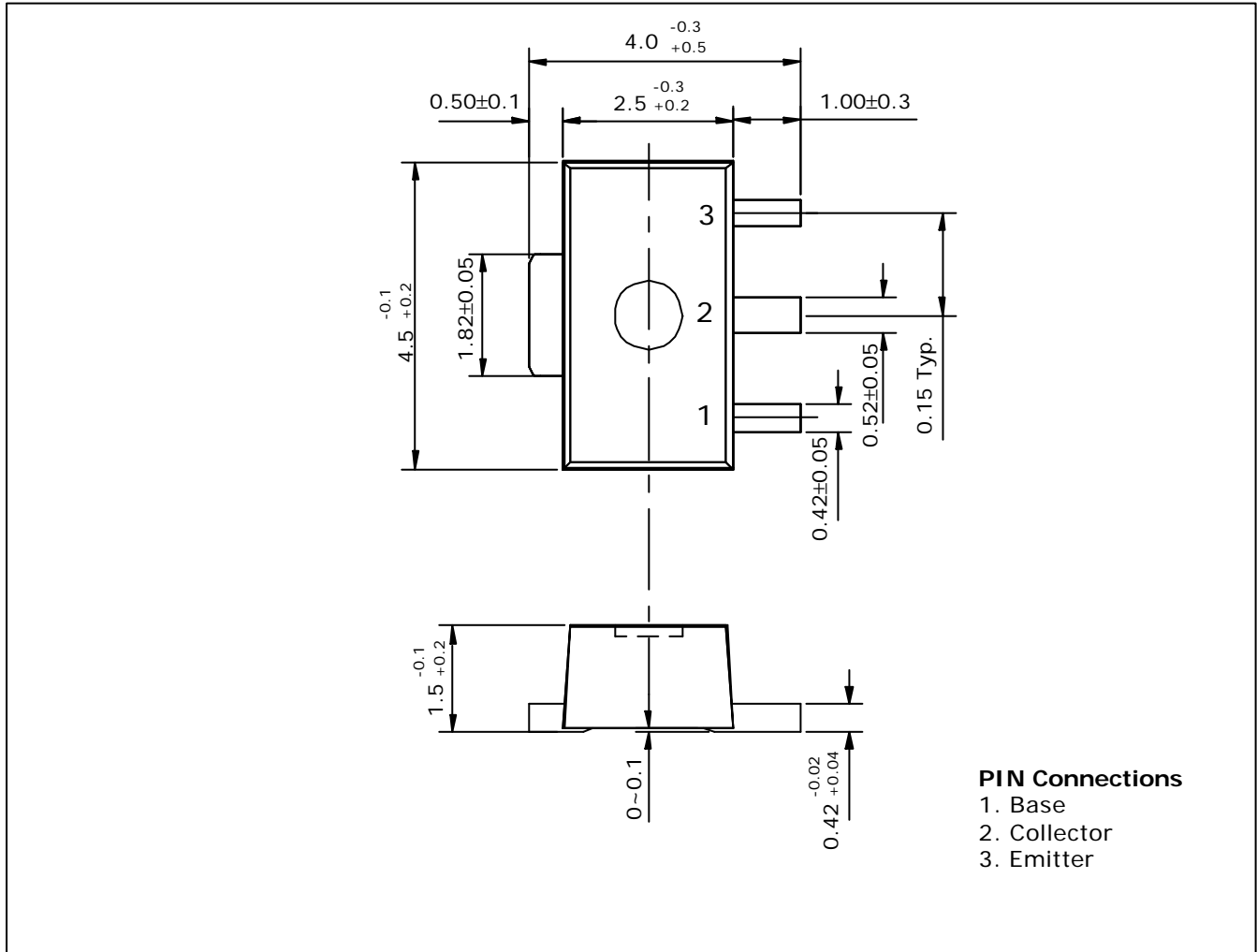
**Ordering Information**

Type NO.	Marking	Package Code
DN500F	N5□	SOT-89

□ : monthly code

**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	$I_C$	5	A
Collector dissipation	$P_C$	0.5	W
	$P_C^*$	2	
Junction temperature	$T_J$	150	°C
Storage temperature	$T_{stg}$	-55 ~ 150	°C

\* : When mounted on 40×40×0.8mm ceramic substrate

## 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	$I_{CBO}$	$V_{CB}=15V, I_E=0$	-	-	0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$	-	-	0.1	$\mu A$
DC current gain	$h_{FE1}$	$V_{CE}=2V, I_C=500mA$	160	-	320	-
	$h_{FE2}$	$V_{CE}=2V, I_C=3A$	40	-	-	-
Collector-Emitter on voltage	$V_{CE(sat)}$	$I_C=3A, I_B=150mA$	-	-	0.3	V
Base-Emitter on voltage	$V_{BE(sat)}$	$I_C=3A, I_B=150mA$	-	-	1.2	V
Transition frequency	$f_T$	$V_{CB}=5V, I_C=500mA$	-	150	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$	-	-	50	pF

Electrical Characteristic Curves

Fig. 1  $P_c - T_a$

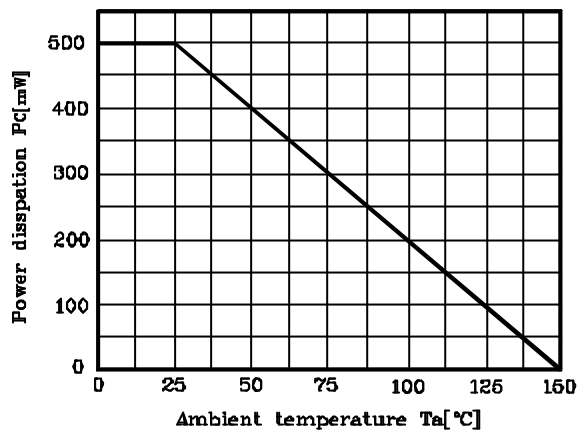


Fig. 2  $I_c - V_{BE}$

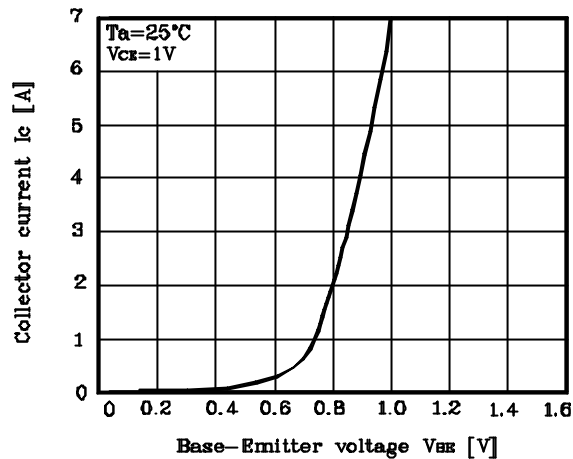


Fig. 3  $h_{FE} - I_c$

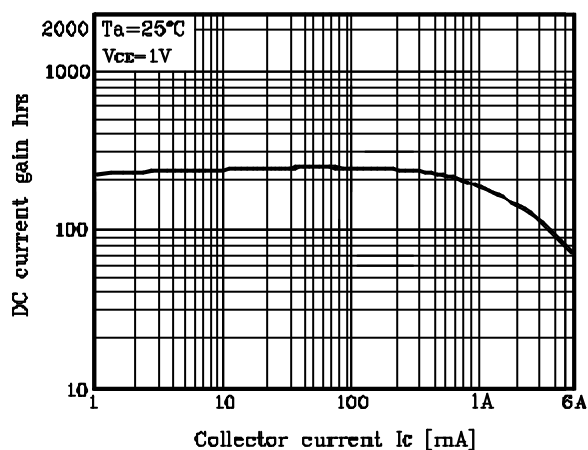


Fig. 4  $V_{CE(sat)} - I_c$

