

**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
- Excellent  $h_{FE}$  Linearity
- Complementary pair with DN500F

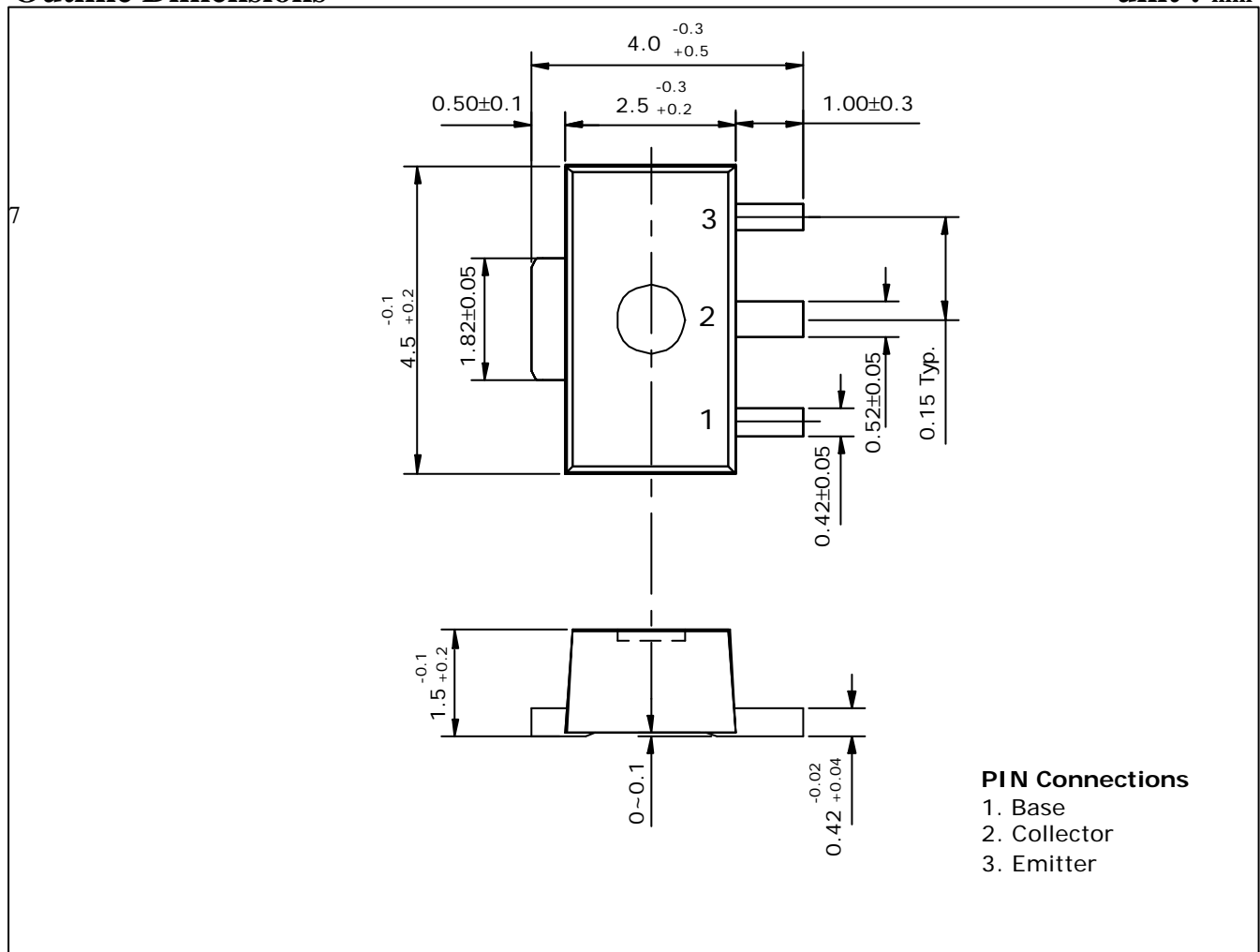
**Ordering Information**

Type NO.	Marking	Package Code
DP500F	P5□□	SOT-89

□□ :  $h_{FE}$  rank, 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 substate

## 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	$I_{CBO}$	$V_{CB} = -12V, I_E = 0$	-	-	-1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5V, I_C = 0$	-	-	-1	$\mu A$
DC current gain	$h_{FE1}^*$	$V_{CE} = -1V, I_C = -100mA$	120	-	700	-
	$h_{FE2}$	$V_{CE} = -1V, I_C = -3A$	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

\* :  $h_{FE}$  rank / O : 120 ~ 240, Y : 200 ~ 400, G : 350 ~ 700

Electrical Characteristic Curves

Fig. 1  $P_c - T_a$

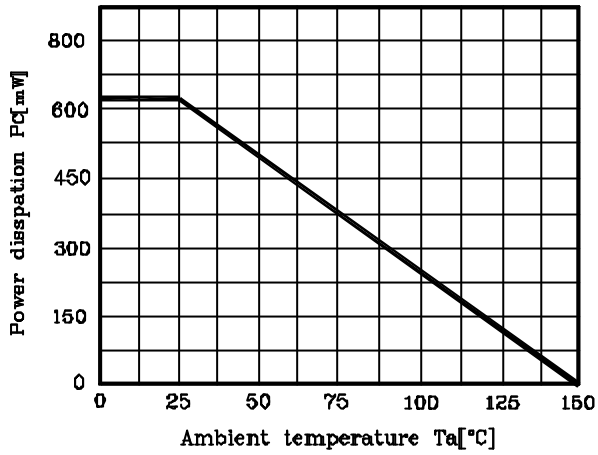


Fig. 2  $I_c - V_{BE}$

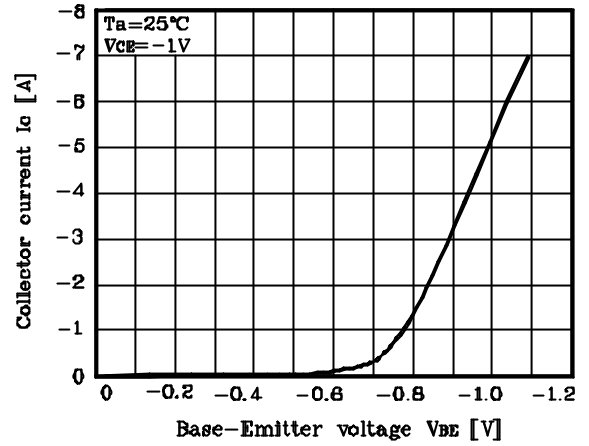


Fig. 3  $h_{FE} - I_c$

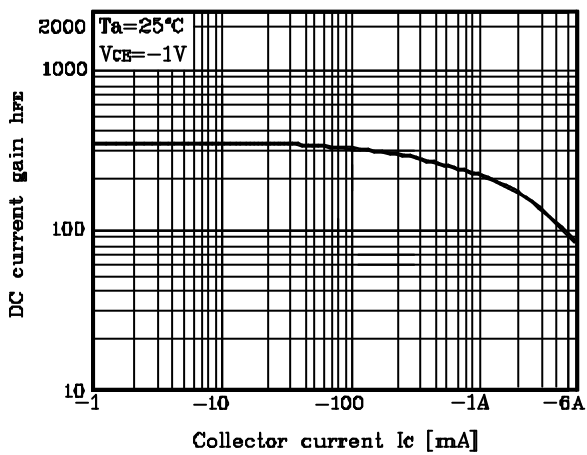


Fig. 4  $V_{CE(sat)} - I_c$

