



DN500F

NPN Silicon Transistor

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

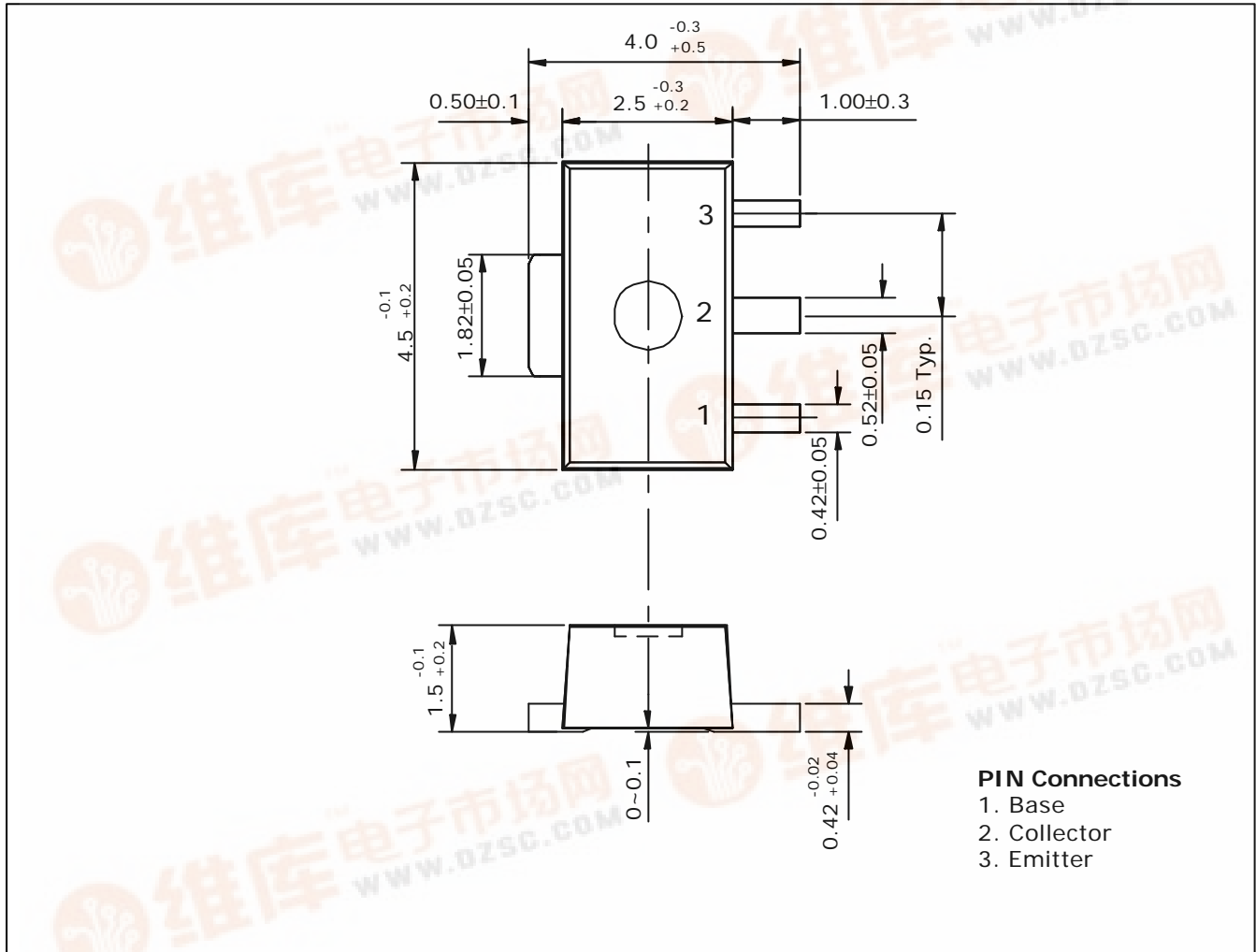
Ordering Information

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 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}	$V_{CB}=15V, I_E=0$	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4V, I_C=0$	-	-	0.1	μA
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	$V_{CE(sat1)}$	$I_C=3A, I_B=150mA$	-	-	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 $P_c - T_a$

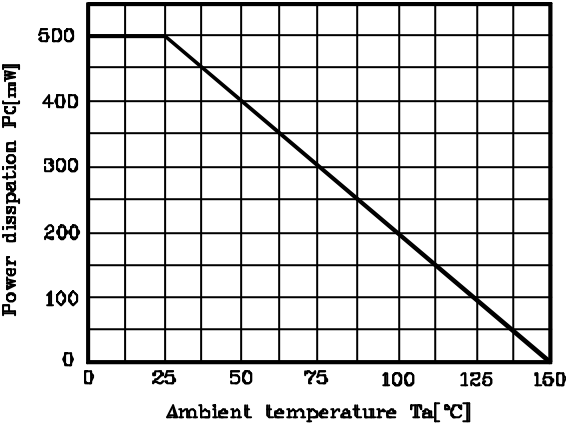


Fig. 2 $I_c - V_{BE}$

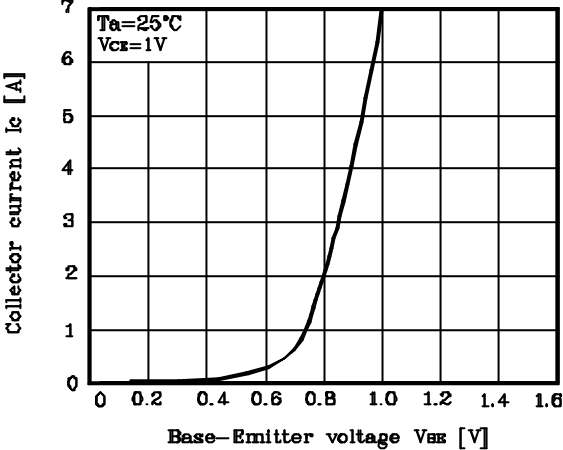


Fig. 3 $h_{FE} - I_c$

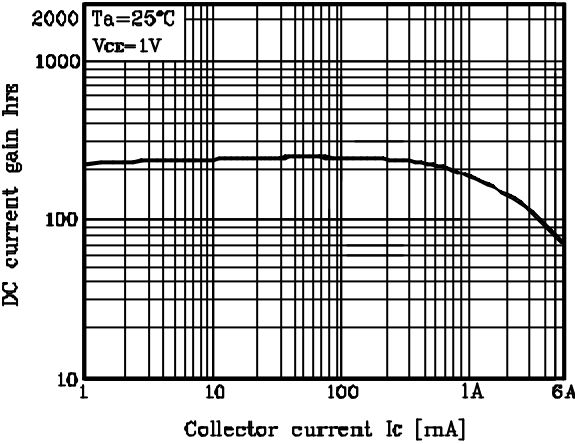


Fig. 4 $V_{CE(sat)} - I_c$

