KODENSHI AUK

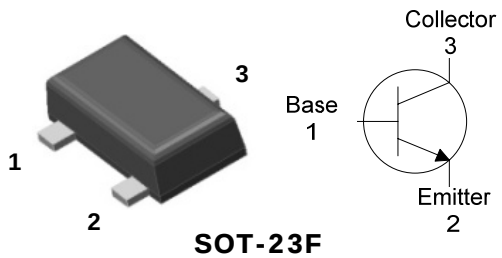
DN050S

NPN Silicon Transistor

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.

PIN Connection



SOT-23F

Ordering Information

Type NO.	Marking	Package Code
DN050S	N02 □ ① ②	SOT-23F

① Device Code ② Year&Week Code

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=50μA, 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=50μA, I_C=0	5	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=12V, I_E=0	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	0.1	μA
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

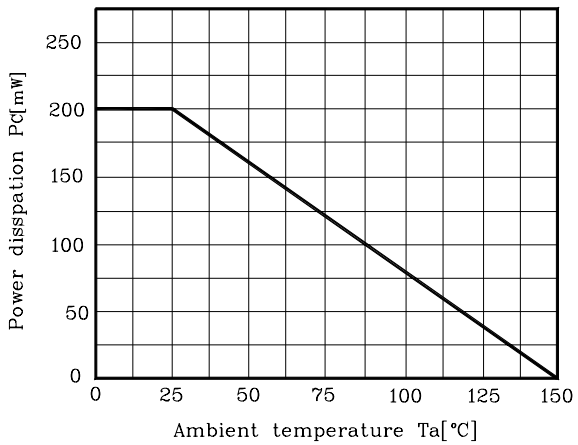


Fig. 2 I_C - V_{BE}

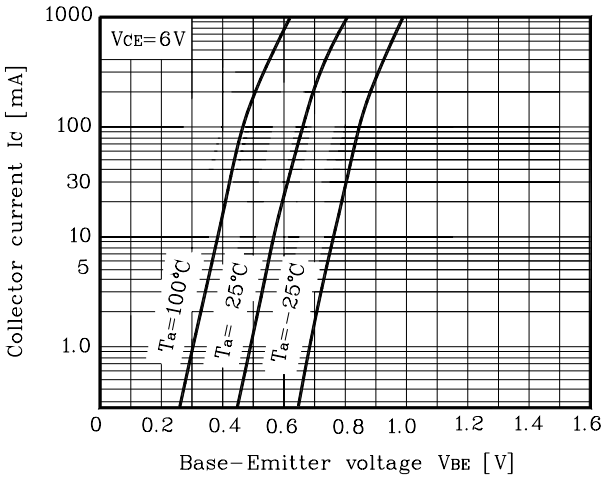


Fig. 3 h_{FE} - I_C

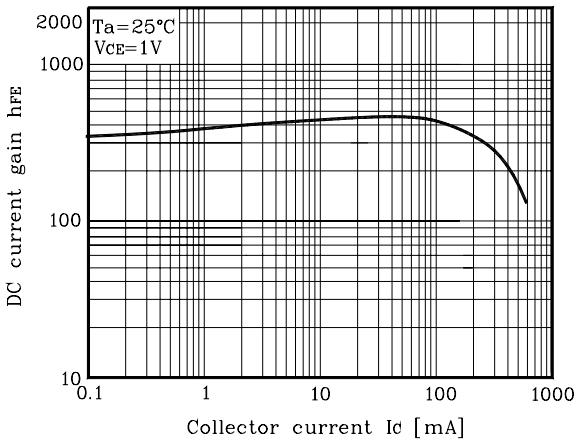


Fig. 4 I_C - V_{CE}

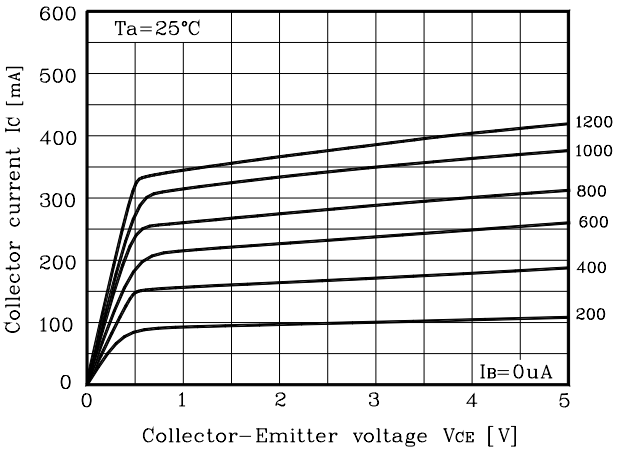
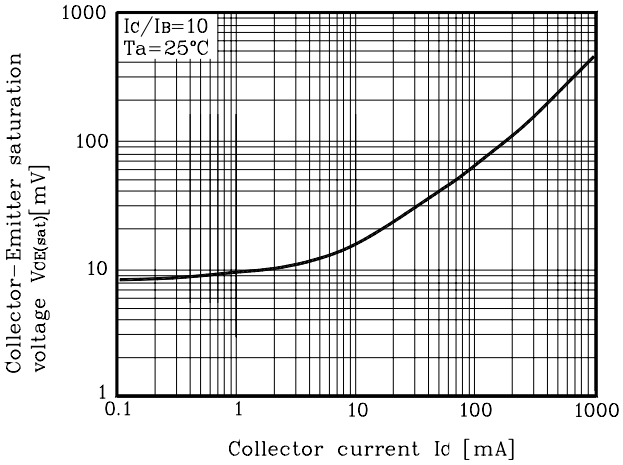
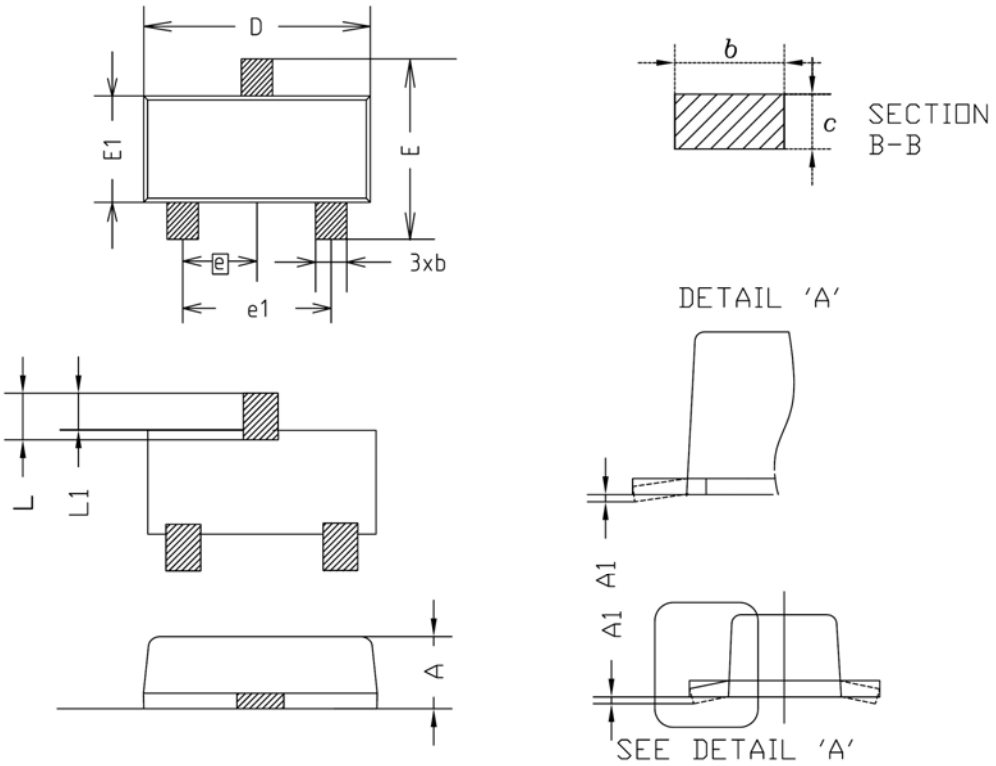


Fig. 5 $V_{CE(sat)}$ - I_C

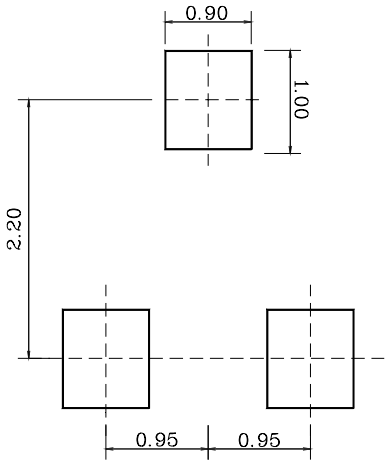


Outline Dimension



SYMBOL	MILLIMETER(mm)			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.80	0.90	1.00	
A1	0.00	–	0.10	
b	0.35	0.40	0.45	
c	0.10	0.15	0.20	
D	2.80	2.90	3.00	
E	2.30	2.40	2.50	
E1	1.50	1.60	1.70	
e	0.95BSC			
e1	1.80	1.90	2.00	
L	0.48	0.58	0.68	
L1	0.30	–	0.50	

※Recommend PCB solder land [Unit: mm]



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