

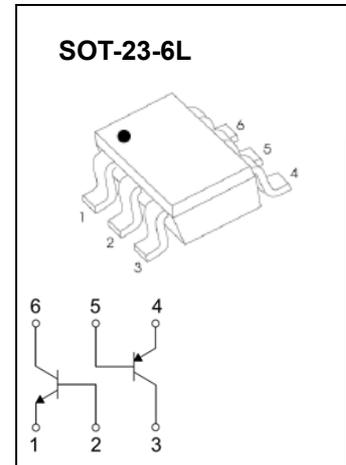
## Plastic-Encapsulate Transistors

DUAL TRANSISTOR (NPN+PNP)

### FEATURES

- High breakdown voltage
- Low collector-emitter saturation voltage
- Two (galvanic) internal isolated NPN/PNP Transistor in one package

**MAKING: S2P**



### MAXIMUM RATINGS( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-emitter voltage	$V_{\text{CEO}}$	80	V
Collector-base voltage	$V_{\text{CBO}}$	80	
Emitter-base voltage	$V_{\text{EBO}}$	4	
Collector current	$I_{\text{C}}$	500	mA
Peak collector current, $t_p \leq 10$ ms	$I_{\text{CM}}$	1	A
Base current	$I_{\text{B}}$	100	mA
Peak base current	$I_{\text{BM}}$	200	
Total power dissipation- $T_S \leq 115^{\circ}\text{C}$	$P_{\text{tot}}$	330	mW
Junction temperature	$T_{\text{j}}$	150	$^{\circ}\text{C}$
Storage temperature	$T_{\text{stg}}$	-65 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$	$\leq 105$	K/W

**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

**DC Characteristics**

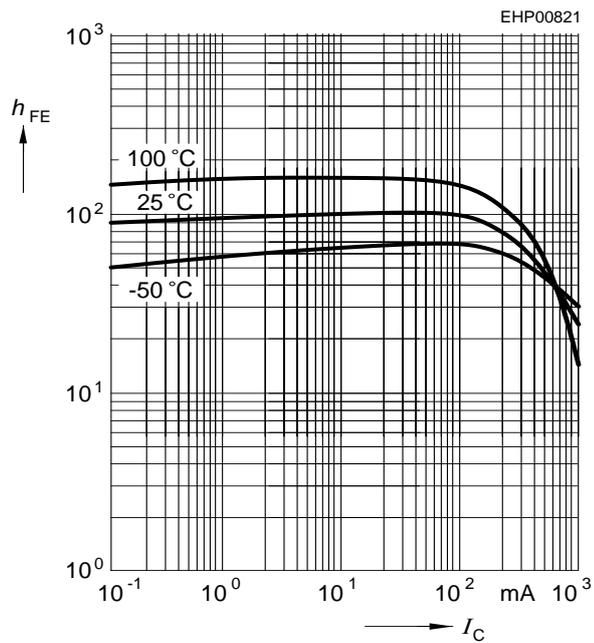
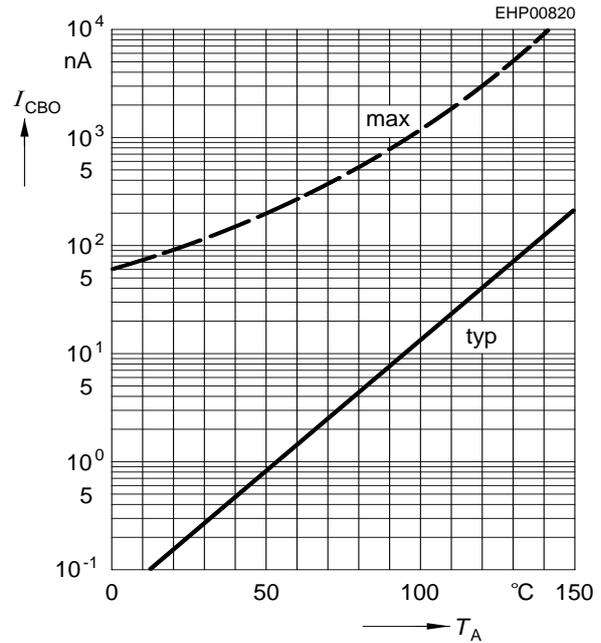
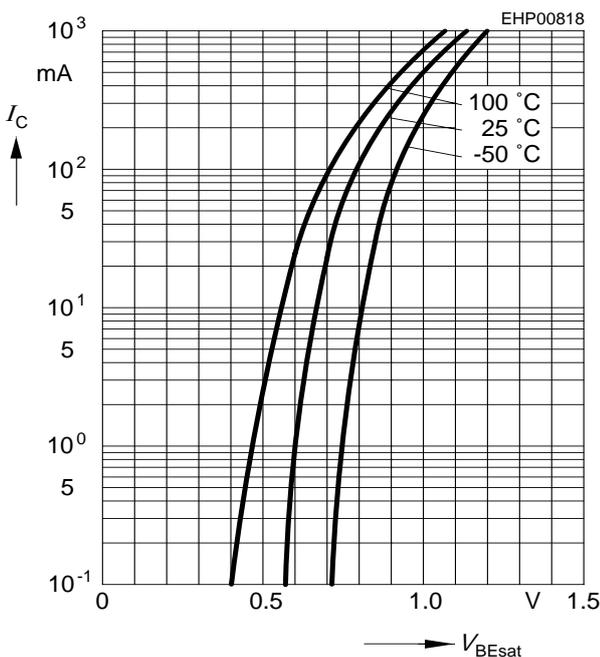
Collector-emitter breakdown voltage $I_C = 1 \text{ mA}, I_B = 0$	$V_{(BR)CEO}$	80	-	-	V
Collector-base breakdown voltage $I_C = 100 \mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	80	-	-	
Emitter-base breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	4	-	-	
Collector-base cutoff current $V_{CB} = 80 \text{ V}, I_E = 0$ $V_{CB} = 80 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	$I_{CBO}$	-	-	0.1 20	$\mu\text{A}$
Collector-emitter cutoff current $V_{CE} = 60 \text{ V}, I_B = 0$	$I_{CEO}$	-	-	100	nA
DC current gain <sup>2)</sup> $I_C = 10 \text{ mA}, V_{CE} = 1 \text{ V}$ $I_C = 100 \text{ mA}, V_{CE} = 1 \text{ V}$	$h_{FE}$	100 100	- -	- -	-
Collector-emitter saturation voltage <sup>2)</sup> $I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$	$V_{CEsat}$	-	-	0.25	V
Base-emitter voltage <sup>2)</sup> $I_C = 100 \text{ mA}, V_{CE} = 1 \text{ V}$	$V_{BE(ON)}$	-	-	1.2	

**AC Characteristics**

Transition frequency $I_C = 20 \text{ mA}, V_{CE} = 5 \text{ V}, f = 20 \text{ MHz}$	$f_T$	-	100	-	MHz
Collector-base capacitance $V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	$C_{cb}$	-	7	-	pF

<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note AN077 (Thermal Resistance Calculation)

<sup>2)</sup>Pulse test:  $t < 300\mu\text{s}; D < 2\%$

**DC current gain  $h_{FE} = f(I_C)$** 
 $V_{CE} = 1\text{ V}$ 

**Collector cutoff current  $I_{CBO} = f(T_A)$** 
 $V_{CBO} = 80\text{ V}$ 

**Base-emitter saturation voltage**
 $I_C = f(V_{BEsat}), h_{FE} = 10$ 

**Total power dissipation  $P_{tot} = f(T_S)$** 
