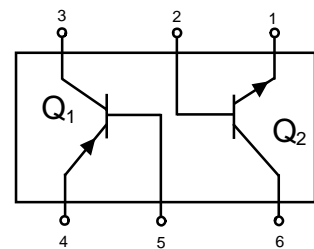
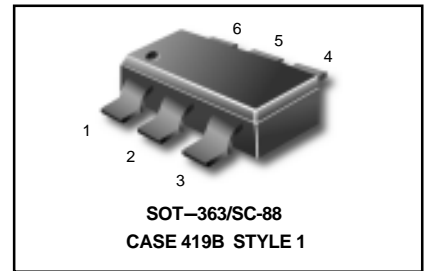
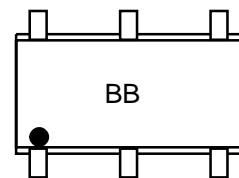


NPN/PNP Silicon AF Transistor Arrays

- For AF input stage and driver applications
- High current gain
- Low collector-emitter saturation voltage
- Two (galvanic) internal isolated NPN/PNP transistor in one package



DEVICE MARKING



Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	65	V
Collector-emitter voltage	V_{CES}	80	
Collector-base voltage	V_{CBO}	80	
Emitter-base voltage	V_{EBO}	6	
Collector current	I_C	100	mA
Peak collector current	I_{CM}	200	
Total power dissipation- $T_S \leq 115^\circ\text{C}$	P_{tot}	250	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}	≤ 140	K/W

¹For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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 $I_C = 10\text{ mA}, I_B = 0$	$V_{(BR)CEO}$	65	-	-	V
Collector-base breakdown voltage $I_C = 10\text{ }\mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	80	-	-	
Collector-emitter breakdown voltage $I_C = 10\text{ }\mu\text{A}, V_{BE} = 0$	$V_{(BR)CES}$	80	-	-	
Emitter-base breakdown voltage $I_E = 1\text{ }\mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	6	-	-	
Collector-base cutoff current $V_{CB} = 50\text{ V}, I_E = 0$ $V_{CB} = 30\text{ V}, I_E = 0, T_A = 150\text{ }^\circ\text{C}$	I_{CBO}	- -	- -	0.015 5	μA
DC current gain- $I_C = 10\text{ }\mu\text{A}, V_{CE} = 5\text{ V}$ $I_C = 2\text{ mA}, V_{CE} = 5\text{ V}$	h_{FE}	- 200	250 290	- 450	-
Collector-emitter saturation voltage ¹⁾ $I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$ $I_C = 100\text{ mA}, I_B = 5\text{ mA}$	V_{CEsat}	- -	90 200	300 650	mV
Base emitter saturation voltage- ¹⁾ $I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$ $I_C = 100\text{ mA}, I_B = 5\text{ mA}$	V_{BEsat}	- -	700 900	- -	
Base-emitter voltage- ¹⁾ $I_C = 2\text{ mA}, V_{CE} = 5\text{ V}$ $I_C = 10\text{ mA}, V_{CE} = 5\text{ V}$	$V_{BE(ON)}$	580 -	660 -	750 820	

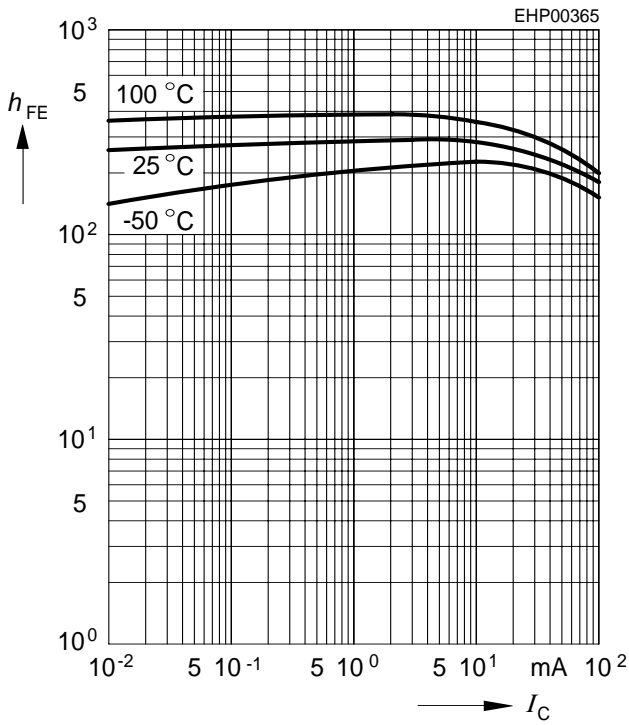
¹⁾Pulse test: $t = 300\mu\text{s}, D = 2\%$

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Transition frequency $I_C = 10\text{ mA}, V_{CE} = 5\text{ V}, f = 100\text{ MHz}$	f_T	-	100	-	MHz
Collector-base capacitance $V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	C_{cb}	-	4.5	-	pF
Emitter-base capacitance $V_{EB} = 0.5\text{ V}, f = 1\text{ MHz}$	C_{eb}	-	8	-	
Short-circuit input impedance $I_C = 2\text{ mA}, V_{CE} = 5\text{ V}, f = 1\text{ kHz}$	h_{11e}	-	4.5	-	k Ω
Open-circuit reverse voltage transf. ratio $I_C = 2\text{ mA}, V_{CE} = 5\text{ V}, f = 1\text{ kHz}$	h_{12e}	-	2	-	10^{-4}
Short-circuit forward current transf. ratio $I_C = 2\text{ mA}, V_{CE} = 5\text{ V}, f = 1\text{ kHz}$	h_{21e}	-	330	-	-
Open-circuit output admittance $I_C = 2\text{ mA}, V_{CE} = 5\text{ V}, f = 1\text{ kHz}$	h_{22e}	-	30	-	μS

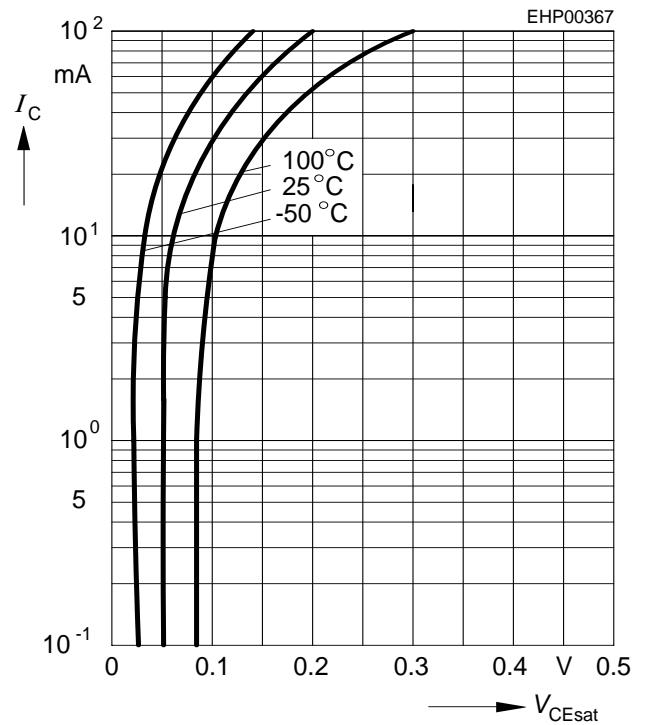
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 5\text{ V}$



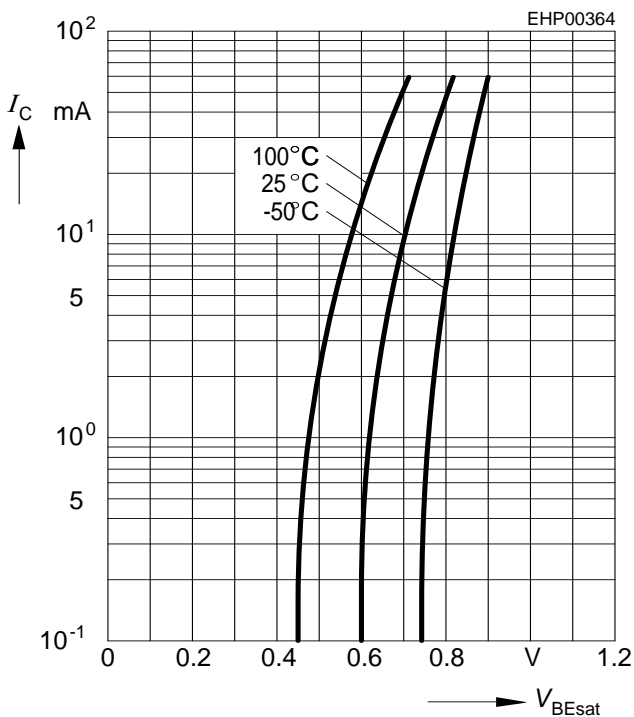
Collector-emitter saturation voltage

$I_C = f(V_{CEsat}), h_{FE} = 20$



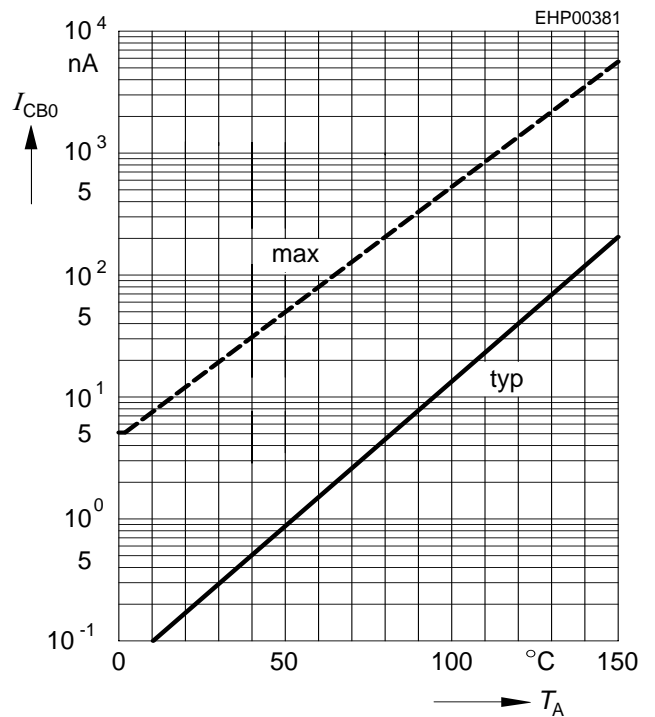
Base-emitter saturation voltage

$I_C = f(V_{BEsat}), h_{FE} = 20$



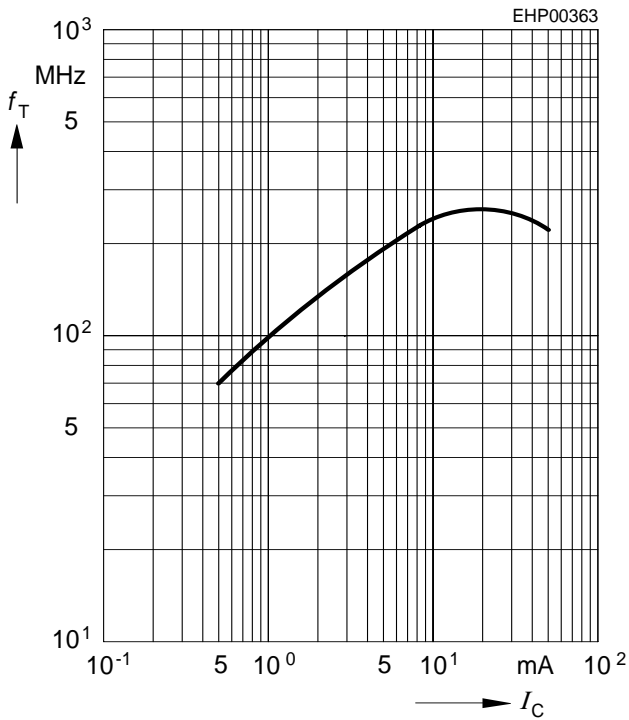
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CBO} = 30\text{ V}$



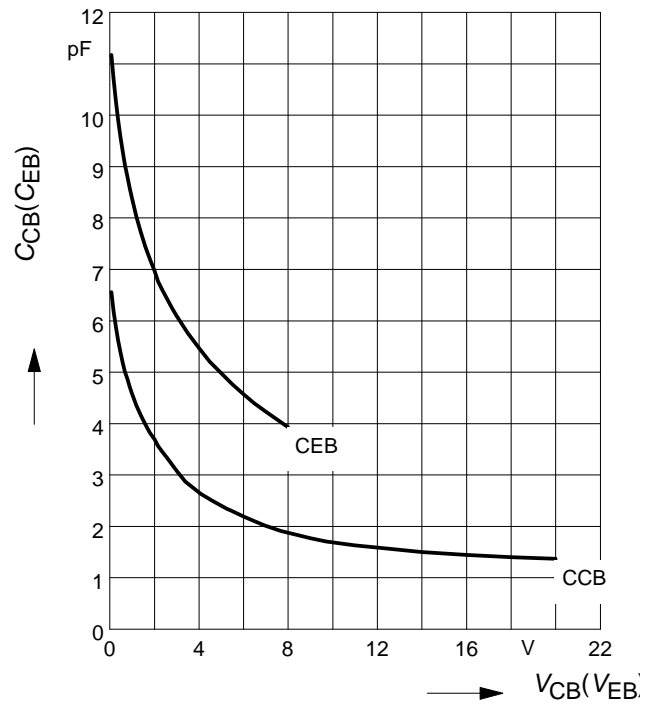
Transition frequency $f_T = f(I_C)$

$V_{CE} = 5\text{ V}, f = 100\text{ MHz}$

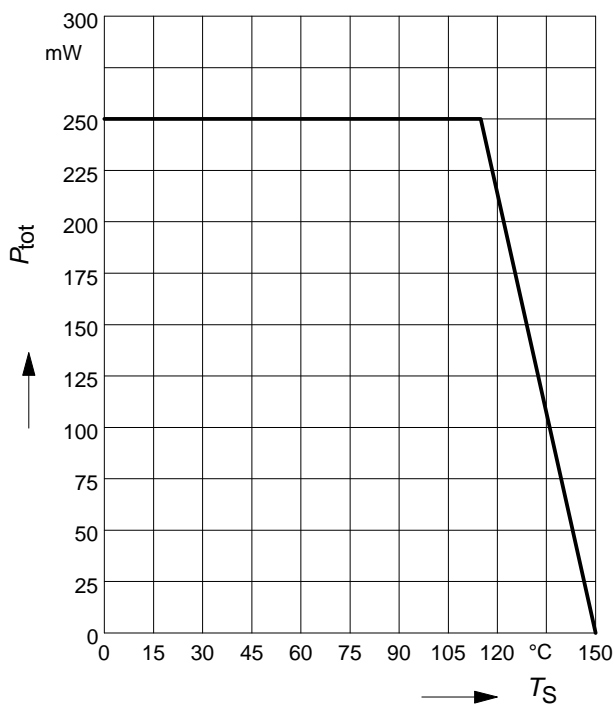


Collector-base capacitance $C_{cb} = f(V_{CB})$

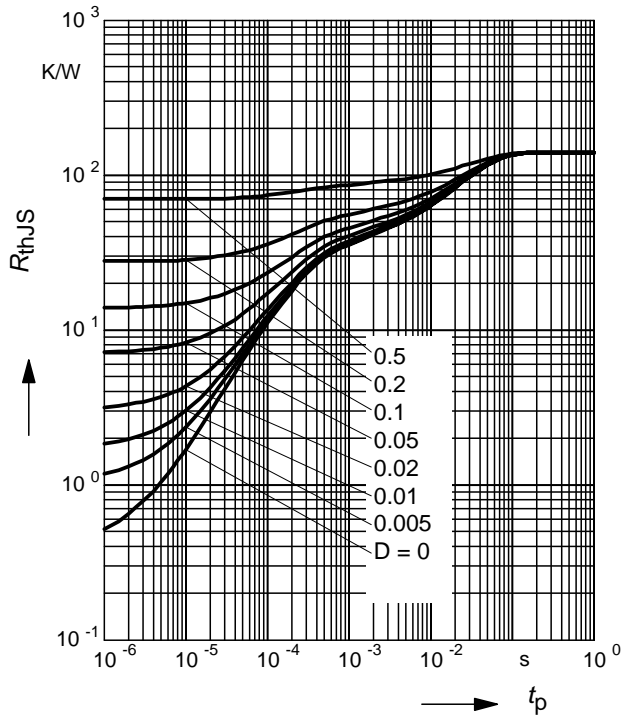
Emitter-base capacitance $C_{eb} = f(V_{EB})$



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

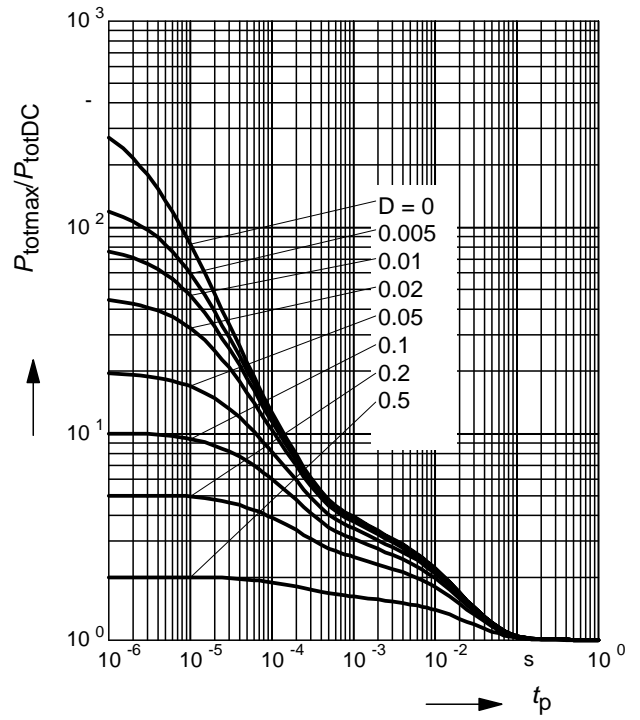


Permissible Pulse Load $R_{thJS} = f(t_p)$



Permissible Pulse Load

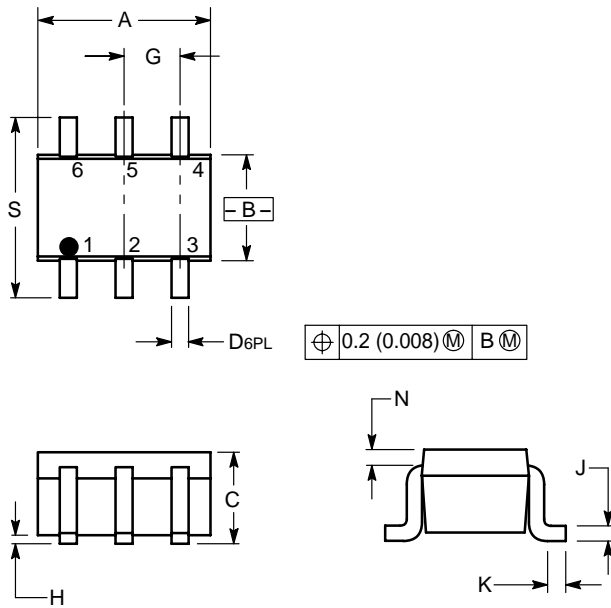
$P_{totmax}/P_{totDC} = f(t_p)$



SC-88/SOT-363

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	---	0.004	---	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20

- PIN 1. EMITTER 2
- 2. BASE 2
- 3. COLLECTOR 1
- 4. EMITTER 1
- 5. BASE 1
- 6. COLLECTOR 2

