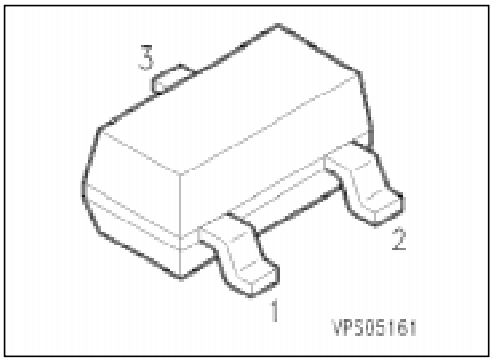
SIEMENS

PNP Silicon AF and Switching Transistors

BCX 42
BSS 63

- For general AF applications
- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary types: BCX 41, BSS 64 (NPN)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	Package[1]
BCX 42 BSS 63	DKs BMs	Q62702-C1485 Q62702-S534	B	E	C	SOT-23

Maximum Ratings

Parameter	Symbol	Values BSS 63	Values BCX 42	Unit
Collector-emitter voltage	V_{CE0}	100	125	V
Collector-base voltage	V_{CB0}	110	125	
Emitter-base voltage	V_{EB0}	5	5	
Collector current	I_C	800		mA
Peak collector current	I_{CM}	1		A
Base current	I_B	100		mA
Peak base current	I_{BM}	200		
Total power dissipation, T_S = 79 °C	P_{tot}	330		mW
Junction temperature	T_j	150		°C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient[2]	$R_{th\ JA}$	≤ 285	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 215	

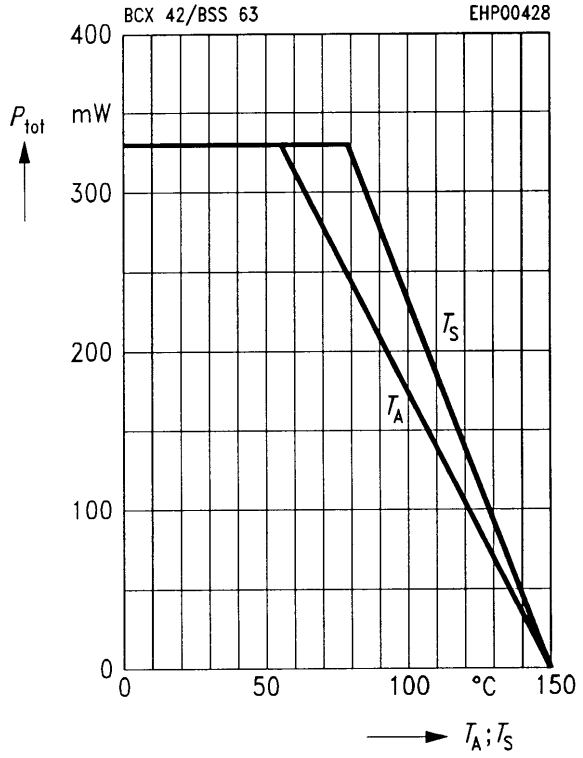
1) For detailed information see chapter Package Outlines.
2) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

Electrical Characteristics
at T_A = 25 ˚C, unless otherwise specified.

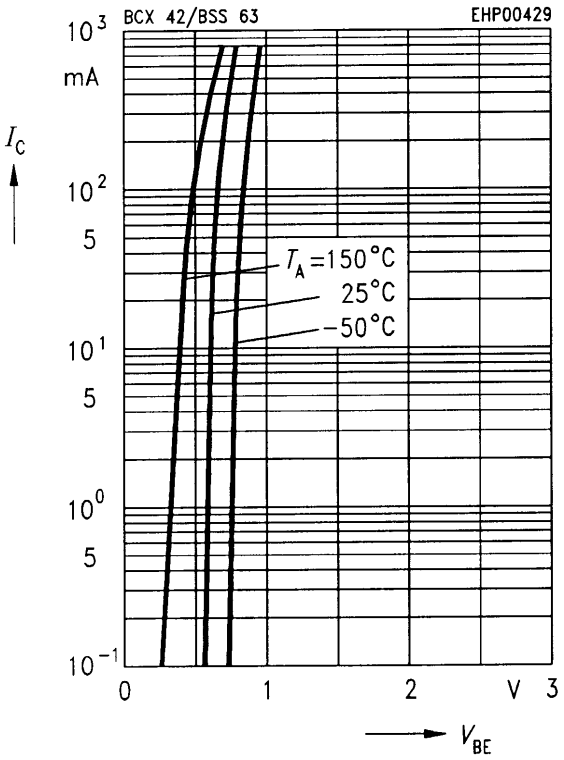
Parameter		Symbol	Values			Unit
			min.	typ.	max.	
DC characteristics						
Collector-emitter breakdown voltage		$V_{(BR)CE0}$				V
I_C = 10 mA	BCX 42		125	–	–	
	BSS 63		100	–	–	
Collector-base breakdown voltage[1]		$V_{(BR)CB0}$				
I_C = 100 µA	BCX 42		125	–	–	
	BSS 63		110	–	–	
Emitter-base breakdown voltage, I_E = 10 µA		$V_{(BR)EB0}$	5	–	–	
Collector cutoff current		I_{CB0}				
V_{CB} = 80 V	BSS 63		–	–	100	nA
V_{CB} = 100 V	BCX 42		–	–	100	nA
V_{CB} = 80 V, T_A = 150 ˚C	BSS 63		–	–	20	µA
V_{CB} = 100 V, T_A = 150 ˚C	BCX 42		–	–	20	µA
Collector cutoff current		I_{CE0}				µA
V_{CE} = 100 V						
T_A = 85 ˚C	BCX 42		–	–	10	
T_A = 125 ˚C	BCX 42		–	–	75	
Emitter cutoff current, V_{EB} = 4 V		I_{EB0}	–	–	100	nA
DC current gain[1]		h_{FE}				–
I_C = 100 µA, V_{CE} = 1 V	BCX 42		25	–	–	
I_C = 10 mA, V_{CE} = 5 V	BSS 63		30	–	–	
I_C = 20 mA, V_{CE} = 5 V	BSS 63		30	–	–	
I_C = 100 mA, V_{CE} = 1 V	BCX 42		63	–	–	
I_C = 200 mA, V_{CE} = 1 V	BCX 42		40	–	–	
Collector-emitter saturation voltage[1]		V_{CEsat}				V
I_C = 300 mA, I_B = 30 mA	BCX 42		–	–	0.9	
I_C = 25 mA, I_B = 2.5 mA	BSS 63		–	–	0.25	
I_C = 75 mA, I_B = 7.5 mA	BSS 63		–	–	0.9	
Base-emitter saturation voltage[1]		V_{BEsat}	–	–	1.4	
I_C = 300 mA, I_B = 30 mA	BCX 42					
AC characteristics						
Transition frequency		f_T	–	150	–	MHz
I_C = 20 mA, V_{CE} = 5 V, f = 20 MHz						
Output capacitance		C_{obo}	–	12	–	pF
V_{CB} = 10 V, f = 1 MHz						

[1] Pulse test: $t \leq 300$ µs, D = 2 %

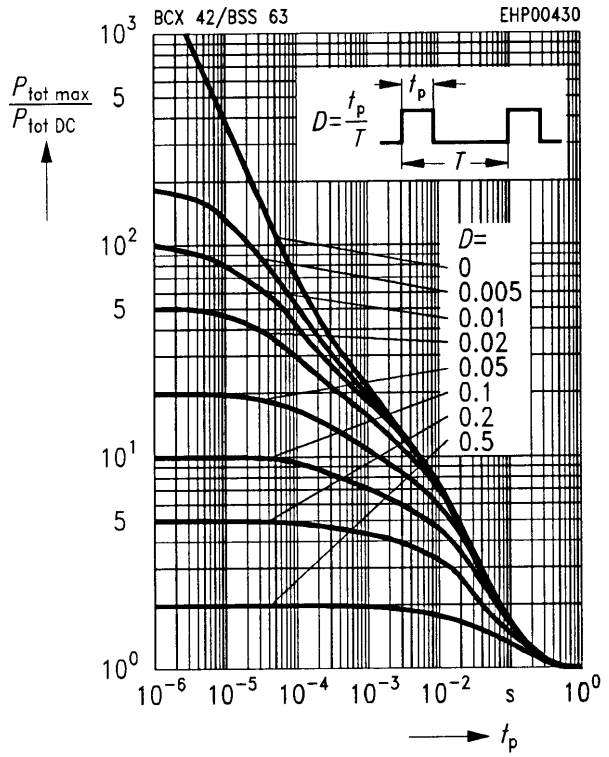
Total power dissipation $P_{tot} = f(T_A^*; T_S)$
* Package mounted on epoxy



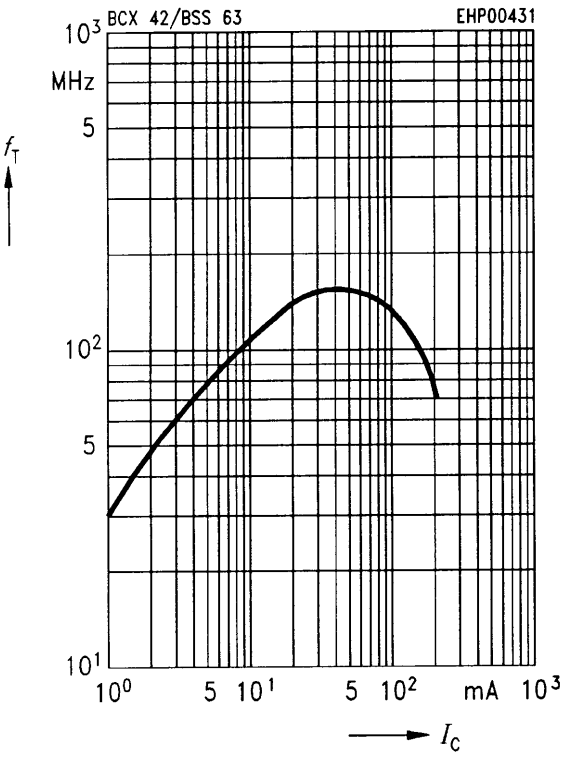
Collector current $I_C = f(V_{BE})$
V_{CE} = 1 V



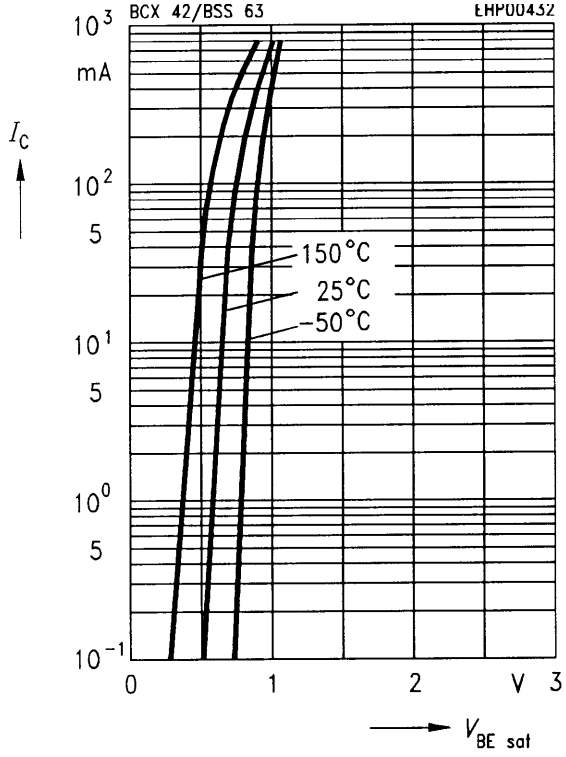
Permissible pulse load $P_{tot\,max}/P_{tot\,DC} = f(t_p)$



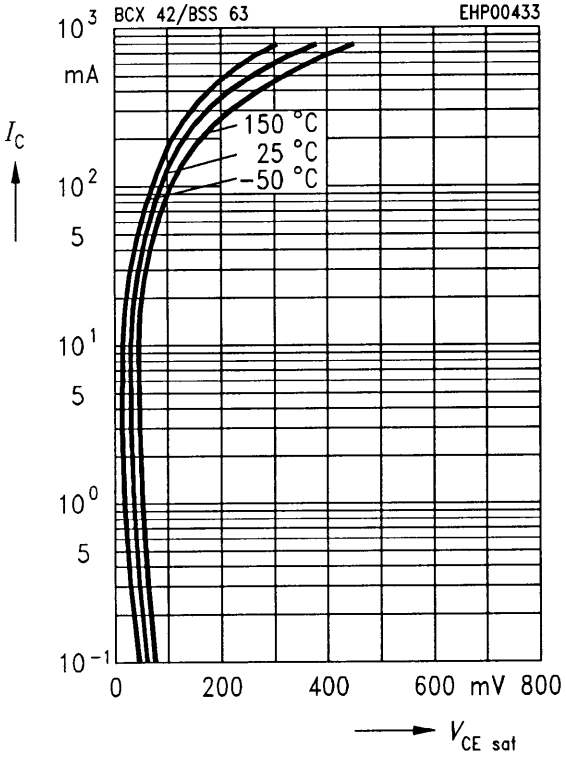
Transition frequency $f_T = f(I_C)$
V_{CE} = 5 V



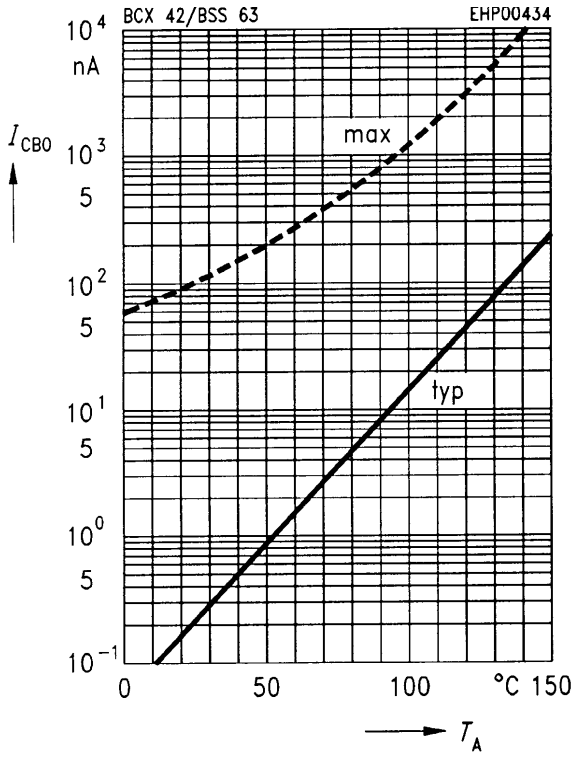
Base-emitter saturation voltage
$I_C = f(V_{BEsat})$
$h_{FE} = 10$



Collector-emitter saturation voltage
$I_C = f(V_{CEsat})$
$h_{FE} = 10$



Collector cutoff current $I_{CB0} = f(T_A)$
$V_{CB} = V_{CEmax}$



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