

25C D ■ 8235605 0004440 7 ■ SIEG T-33-21

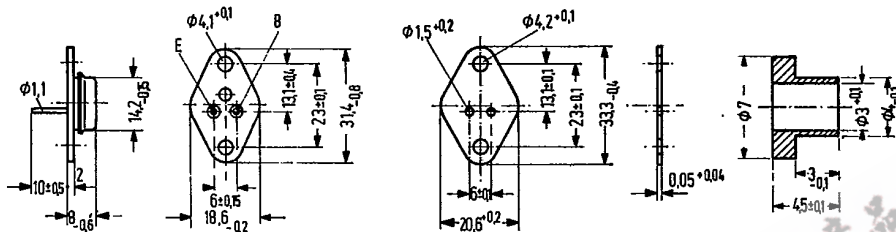
PNP Silicon Planar Transistors

BDX 27
BDX 28
BDX 29
BDX 30

SIEMENS AKTIENGESELLSCHAFT 04440 D

BDX 27, BDX 28, BDX 29, and BDX 30 are epitaxial PNP silicon power transistors in SOT 9 case (9 A 2 DIN 41875). The collector is electrically connected to the case. The transistors are particularly suitable for use in high Q AF output stages and for switching applications.

Type	Ordering code	Type	Ordering code
BDX 27	Q62702-D162	BDX 29	Q62702-D160
BDX 27-6	Q62702-D162-V6	BDX 29-6	Q62702-D160-V6
BDX 27-10	Q62702-D162-V10	BDX 29-10	Q62702-D160-V10
BDX 27-16	Q62702-D162-V16	BDX 30	Q62702-D163
BDX 28	Q62702-D159	BDX 30-6	Q62702-D163-V6
BDX 28-6	Q62702-D159-V6	BDX 30-10	Q62702-D163-V10
BDX 28-10	Q62702-D159-V10	Mica washer	Q62902-B16-A
BDX 28-16	Q62702-D159-V16	Insulating nipple	Q62902-B50



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BDX 27
BDX 28
BDX 29
BDX 30Static characteristics ($T_{\text{case}} = 25^{\circ}\text{C}$)

		BDX 27	BDX 28	BDX 29	BDX 30	
Collector-emitter breakdown voltage ($I_C = -50 \text{ mA}$)	$-V_{(\text{BR})\text{CEO}}$	>40	>60	>80	>125	V
Collector-emitter breakdown voltage ($I_C = 0.1 \text{ mA}$)	$-V_{(\text{BR})\text{CES}}$	>40	>60	>80	>125	V
Emitter-base breakdown voltage ($I_E = -10 \mu\text{A}$)	$-V_{(\text{BR})\text{EBO}}$	>5	>5	>5	>5	V
Collector cutoff current ($-V_{\text{CE}} = 40 \text{ V}$)	$-I_{\text{CBO}}$	<1	-	-	-	μA
($-V_{\text{CE}} = 40 \text{ V}; T_{\text{case}} = 150^{\circ}\text{C}$)	$-I_{\text{CBO}}$	<100	-	-	-	μA
($-V_{\text{CE}} = 60 \text{ V}$)	$-I_{\text{CBO}}$	-	<1	-	-	μA
($-V_{\text{CE}} = 60 \text{ V}; T_{\text{case}} = 150^{\circ}\text{C}$)	$-I_{\text{CBO}}$	-	<100	-	-	μA
($-V_{\text{CE}} = 80 \text{ V}$)	$-I_{\text{CBO}}$	-	-	<1	-	μA
($-V_{\text{CE}} = 80 \text{ V}; T_{\text{case}} = 150^{\circ}\text{C}$)	$-I_{\text{CBO}}$	-	-	<100	-	μA
($-V_{\text{CE}} = 125 \text{ V}$)	$-I_{\text{CBO}}$	-	-	-	<1	μA
($-V_{\text{CE}} = 125 \text{ V}; T_{\text{case}} = 150^{\circ}\text{C}$)	$-I_{\text{CBO}}$	-	-	-	<100	μA
Collector cutoff current ($-V_{\text{CE}} = 40 \text{ V}; -V_{\text{BE}} = 0.2 \text{ V};$ $T_{\text{case}} = 100^{\circ}\text{C}$)	$-I_{\text{CEX}}$	<300	-	-	-	μA
($-V_{\text{CE}} = 60 \text{ V}; -V_{\text{BE}} = 0.2 \text{ V};$ $T_{\text{case}} = 100^{\circ}\text{C}$)	$-I_{\text{CEX}}$	-	<300	-	-	μA
($-V_{\text{CE}} = 80 \text{ V}; -V_{\text{BE}} = 0.2 \text{ V};$ $T_{\text{case}} = 100^{\circ}\text{C}$)	$-I_{\text{CEX}}$	-	-	<300	-	μA
($-V_{\text{CE}} = 100 \text{ V}; -V_{\text{BE}} = 0.2 \text{ V};$ $T_{\text{case}} = 100^{\circ}\text{C}$)	$-I_{\text{CEX}}$	-	-	-	<300	μA

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BDX 27

BDX 28

BDX 29

BDX 30

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Static characteristics

		BDX 27	BDX 28	BDX 29	BDX 30	
Emitter cutoff current ($-V_{EB} = 4\text{ V}$)	$-I_{EBO}$	<1	<1	<1	<1	μA
Base-emitter forward voltage ($-I_C = 1\text{ A}$; $-V_{CE} = 1\text{ V}$)	$-V_{BE}$	<1.1	<1.1	<1.1	<1.1	V
($-I_C = 5\text{ A}$; $-V_{CE} = 2\text{ V}$)	$-V_{BE}$	<1.7	<1.7	<1.7	<1.7	V
Collector-emitter saturation voltage ($-I_C = 1\text{ A}$; $-I_B = 0.1\text{ A}$)	$-V_{CEsat}$	<0.5	<0.5	<0.5	<0.5	V
($-I_C = 3\text{ A}$; $-I_B = 0.3\text{ A}$)	$-V_{CEsat}$	<1.0	<1.0	<1.0	<1.0	V

The transistors are grouped according to the DC current gain h_{FE} and marked by numerals of the German DIN R 5 standard.

Type		BDX 27 BDX 28 BDX 29	BDX 27 BDX 28 BDX 29	BDX 27 BDX 28 BDX 28
h_{FE} group		6	10	16
$-I_C$ mA	$-V_{CE}$ V	h_{FE} I_C/I_B	h_{FE} I_C/I_B	h_{FE} I_C/I_B
10	1	40 (>30)	115 (>55)	180 (>80)
1000	1	63 (40-100)	100 (63-160)	160 (100-250)
3000	2	32 (>20)	55 (>20)	85 (>20)
5000	2	20 (>10)	55 (>20)	85 (>20)

Type		BDX 30	BDX 30
h_{FE} group		6	10
10	1	70 (>30)	115 (>30)
1000	1	63 (>40-100)	100 (63-160)
3000	2	32 (>15)	55 (>15)
5000	2	20 (>7)	55 (>7)

		BDX 27	BDX 28	BDX 29	BDX 30	
Transition frequency ($-I_C = 200\text{ mA}$; $-V_{CE} = 10\text{ V}$; $f = 20\text{ MHz}$)	f_T	50	50	50	50	MHz
Output capacitance ($-V_{CB} = 10\text{ V}$)	C_{ob}	130	130	100	100	pF
Switching times: Operating point: ($-I_C = 2\text{ A}$; $-I_{B1}$ approx. $I_{B2} = 200\text{ mA}$)	t_{on}	<0.5	<0.5	<0.5	<0.5	μs
($-I_C = 2\text{ A}$; $-I_{B1}$ approx. $I_{B2} = 200\text{ mA}$)	t_{off}	<2	<2	<2	<2	μs

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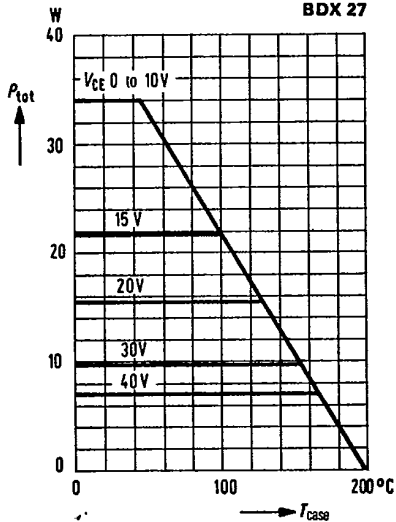
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BDX 27
BDX 28
BDX 29
BDX 30

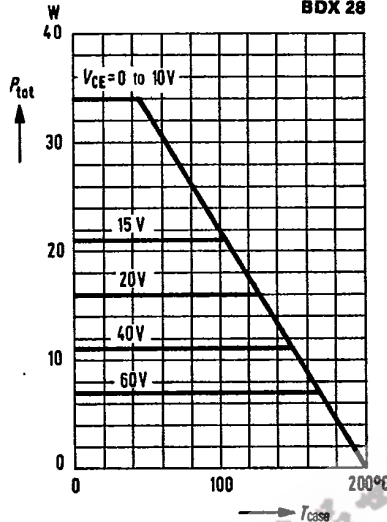
Total perm. power dissipation
versus temperature
 $P_{tot} = f(T_{case}); V_{CE} = \text{parameter}$

BDX 27



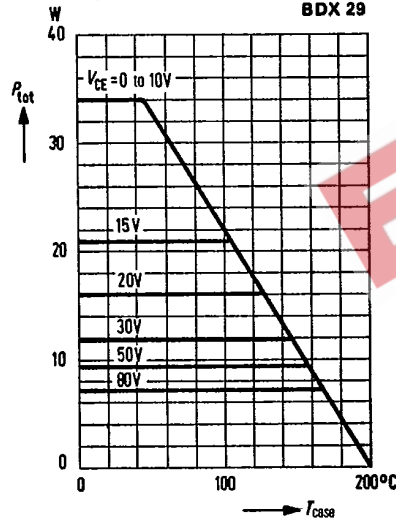
Total perm. power dissipation
versus temperature
 $P_{tot} = f(T_{case}); V_{CE} = \text{parameter}$

BDX 28



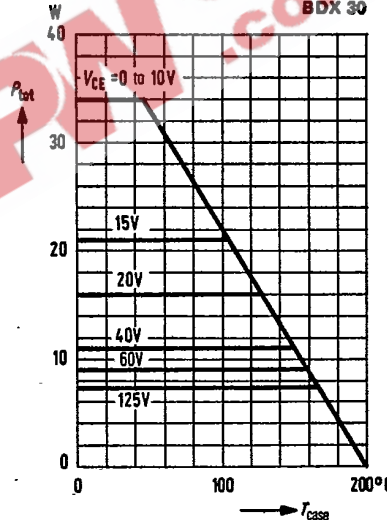
Total perm. power dissipation
versus temperature
 $P_{tot} = f(T_{case}); V_{CE} = \text{parameter}$

BDX 29



Total perm. power dissipation
versus temperature
 $P_{tot} = f(T_{case}); V_{CE} = \text{parameter}$

BDX 30



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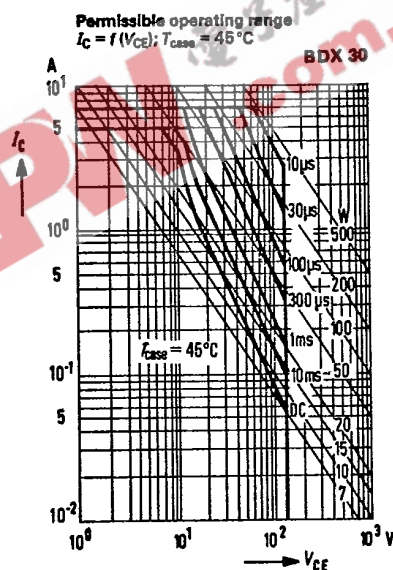
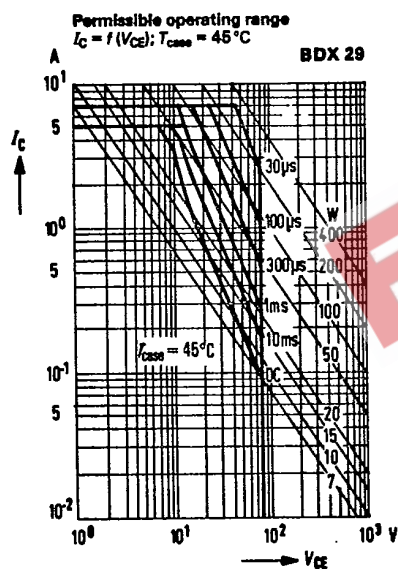
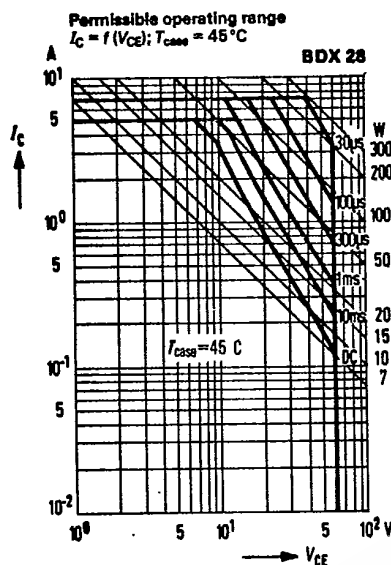
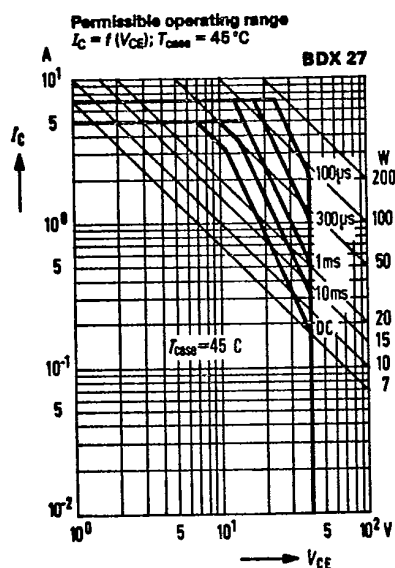
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25C 04444 D

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BDX 27
BDX 28
BDX 29
BDX 30



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25C 04445 D

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BDX 27
BDX 28
BDX 29
BDX 30

