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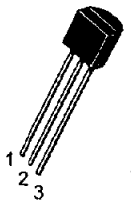
N-Channel Junction Field-Effect Transistors

BF 245 A
BF 245 B
BF 245 C

BF 245 A, B, and C are N-channel junction field-effect transistors in plastic package similar to TO 92 (10 A 3 DIN 41868). They are particularly suitable for use in dc, AF and RF amplifiers.

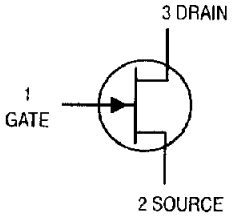


Maximum ratings

Drain-source voltage	$\pm V_{DS}$	30	V
Drain-gate voltage (I_S = 0)	$+V_{DG}$	30	V
Gate-source voltage (I_D = 0)	$-V_{GS}$	30	V
Drain current	I_D	25	mA
Gate current	I_G	10	mA
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−65 to +150	°C
Total power dissipation ($T_{amb} \leq 75$°C)[1]	P_{tot}	300	mW

Thermal resistance

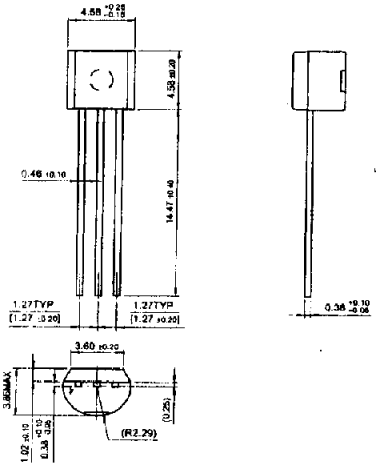
Junction to ambient air	R_{thJA}	≤ 250	K/W[1]



Static characteristics (T_j = 25°C)

Gate cutoff current				
($-V_{GS}$ = 20 V, V_{DS} = 0)		$-I_{GSS}$	≤ 5	nA
($-V_{GS}$ = 20 V, V_{DS} = 0, T_j = 125°C)		$-I_{GSS}$	≤ 500	nA
Gate-source breakdown voltage				
($-I_G$ = 1 µA, V_{DS} = 0)		$-V_{(BR)GSS}$	≥ 30	V
Drain-source short-circuit current				
(V_{DS} = 15 V, V_{GS} = 0)	BF 245 A:	I_{DSS}	2.0 to 6.5	mA[2]
	BF 245 B:	I_{DSS}	6 to 15	mA
	BF 245 C:	I_{DSS}	12 to 25	mA
Gate-source voltage				
(V_{DS} = 15 V, I_D = 200 µA)	BF 245 A:	$-V_{GS}$	0.4 to 2.2	V[2]
	BF 245 B:	$-V_{GS}$	1.6 to 3.8	V
	BF 245 C:	$-V_{GS}$	3.2 to 7.5	V
Gate-source pinch-off voltage				
(V_{DS} = 15 V, I_D = 10 nA)		$-V_P$	0.5 to 8.0	V

TO-92



Dynamic characteristics (T_{amb} = 25°C)

Four-pole characteristics			
(V_{DS} = 15 V, V_{GS} = 0, f = 1 kHz)	$\lvert y_{21s} \rvert$	3.0 to 6.5	mS
	$\lvert y_{22s} \rvert$	25	µS
(V_{DS} = 15 V, V_{GS} = 0, f = 200 MHz)	g_{11}	250	µS
	$\lvert y_{21s} \rvert$	6	mS
	g_{22s}	40	µS
(V_{DS} = 20 V, $-V_{GS}$ = 1 V, f = 1 MHz)	C_{11s}	4.0	pF
	C_{12s}	1.1	pF
	C_{22s}	1.6	pF
Cutoff frequency of short-circuit forward transfer admittance[1] (V_{DS} = 15 V, V_{GS} = 0)	f_{y21s}	700	MHz
Noise figure (V_{DS} = 15 V, V_{GS} = 0, R_g = 1 kΩ, f = 100 MHz, T_{amb} = 25°C)	NF	1.5	dB