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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 ($I_G = 0$)	$+V_{DG}$	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 ($T_{amb} \leq 75^\circ\text{C}^1$)	P_{tot}	300	mW

Thermal resistance

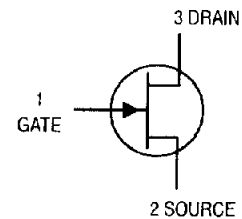
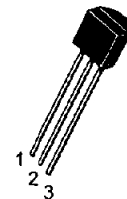
Junction to ambient air	R_{thJA}	≤ 250	(K/W ¹)
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Static characteristics ($T_j = 25^\circ\text{C}$)

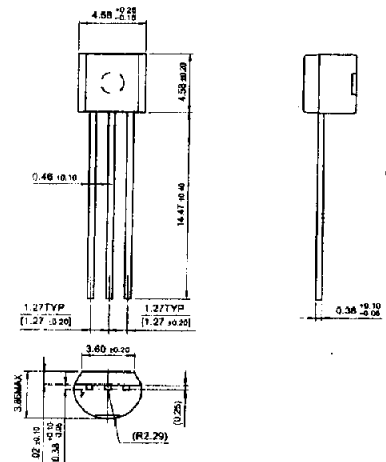
Gate cutoff current				
($-V_{GS} = 20\text{ V}, V_{DS} = 0$)	$-I_{GSS}$	≤ 5	nA	
($-V_{GS} = 20\text{ V}, V_{DS} = 0, T_j = 125^\circ\text{C}$)	$-I_{GSS}$	≤ 500	nA	
Gate-source breakdown voltage				
($-I_G = 1\ \mu\text{A}, V_{DS} = 0$)	$-V_{(BR)GS}$	≥ 30	V	
Drain-source short-circuit current				
($V_{DS} = 15\text{ V}, V_{GS} = 0$)	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				
($V_{DS} = 15\text{ V}, I_D = 200\ \mu\text{A}$)	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				
($V_{DS} = 15\text{ V}, I_D = 10\text{ nA}$)	$-V_P$	0.5 to 8.0	V	

Dynamic characteristics ($T_{amb} = 25^\circ\text{C}$)

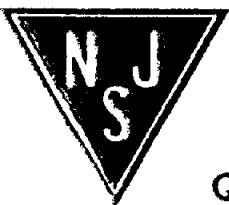
Four-pole characteristics			
($V_{DS} = 15\text{ V}, V_{GS} = 0, f = 1\text{ kHz}$)	$ Y_{21s} $	3.0 to 6.5	mS
	$ Y_{22s} $	25	μS
($V_{DS} = 15\text{ V}, V_{GS} = 0, f = 200\text{ MHz}$)	g_{11}	250	μS
	$ Y_{21s} $	6	mS
	g_{22s}	40	μS
($V_{DS} = 20\text{ V}, -V_{GS} = 1\text{ V}, f = 1\text{ MHz}$)	C_{11s}	4.0	pF
	C_{12s}	1.1	pF
	C_{22s}	1.6	pF
Cutoff frequency of short-circuit forward transfer admittance ¹			
($V_{DS} = 15\text{ V}, V_{GS} = 0$)	f_{y2ts}	700	MHz
Noise figure			
($V_{DS} = 15\text{ V}, V_{GS} = 0, R_G = 1\text{ k}\Omega, f = 100\text{ MHz}, T_{amb} = 25^\circ\text{C}$)	NF	1.5	dB



TO-92



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