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MJ802

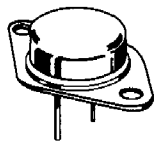
High-Power NPN Silicon Transistor

This transistor is for use as an output device in complementary audio amplifiers to 100–Watts music power per channel.

Features

- High DC Current Gain – h_{FE} = 25–100 @ I_C = 7.5 A
- Excellent Safe Operating Area
- Complement to the PNP MJ4502

30 AMPERE
POWER TRANSISTOR
NPN SILICON
100 VOLTS – 200 WATTS



(TO–3)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CER}	100	Vdc
Collector–Base Voltage	V_{CB}	100	Vdc
Collector–Emitter Voltage	V_{CEO}	90	Vdc
Emitter–Base Voltage	V_{EB}	4.0	Vdc
Collector Current	I_C	30	Adc
Base Current	I_B	7.5	Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	200 1.14	W W/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction–to–Case	θ_{JC}	0.875	°C/W

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

MJ802

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Breakdown Voltage (I_C = 200 mAdc, R_{BE} = 100 Ω)	BV_{CER}	100	–	Vdc
Collector–Emitter Sustaining Voltage (Note 1) (I_C = 200 mAdc)	$V_{CEO(sus)}$	90	–	Vdc
Collector–Base Cutoff Current (V_{CB} = 100 Vdc, I_E = 0) (V_{CB} = 100 Vdc, I_E = 0, T_C = 150°C)	I_{CBO}	 – –	 1.0 5.0	mAdc
Emitter–Base Cutoff Current (V_{BE} = 4.0 Vdc, I_C = 0)	I_{EBO}	–	1.0	mAdc
ON CHARACTERISTICS(1)				
DC Current Gain (Note 1) (I_C = 7.5 Adc, V_{CE} = 2.0 Vdc)	h_{FE}	25	100	–
Base–Emitter "On" Voltage (I_C = 7.5 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$	–	1.3	Vdc
Collector–Emitter Saturation Voltage (I_C = 7.5 Adc, I_B = 0.75 Adc)	$V_{CE(sat)}$	–	0.8	Vdc
Base–Emitter Saturation Voltage (I_C = 7.5 Adc, I_B = 0.75 Adc)	$V_{BE(sat)}$	–	1.3	Vdc
DYNAMIC CHARACTERISTICS				
Current Gain – Bandwidth Product (I_C = 1.0 Adc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T	2.0	–	MHz

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

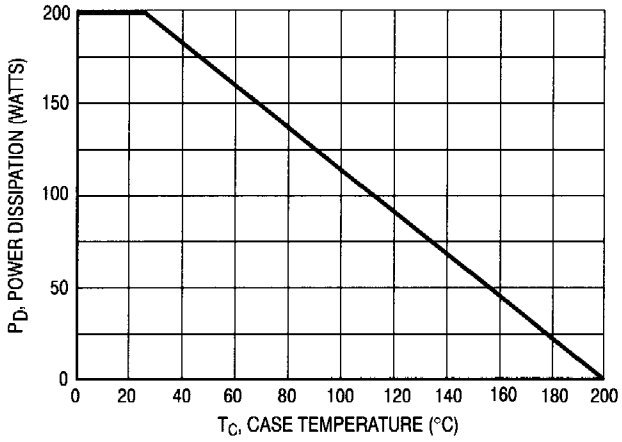


Figure 1. Power–Temperature Derating Curve