

MAXIMUM RATINGS

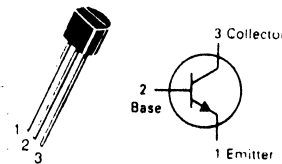
Rating	Symbol	2N5088	2N5089	Unit
Collector-Emitter Voltage	V _{CEO}	30	25	Vdc
Collector-Base Voltage	V _{CBO}	35	30	Vdc
Emitter-Base Voltage	V _{EBO}	4.5		Vdc
Collector Current — Continuous	I _C	50		mAdc
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	625	5.0	mW mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	1.5	12	Watt mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-55 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	125	°C/W
Thermal Resistance, Junction to Ambient	R _{θJA} (1)	357	°C/W

2N5088
2N5089

CASE 29-04, STYLE 1
TO-92 (TO-226AA)



AMPLIFIER TRANSISTORS

NPN SILICON

Refer to MPSA18 for graphs.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage(2) (I _C = 1.0 mAdc, I _B = 0)	2N5088 2N5089	V _{(BR)CEO}	30 25	—	Vdc
Collector-Base Breakdown Voltage (I _C = 100 μAdc, I _E = 0)	2N5088 2N5089	V _{(BR)CBO}	35 30	—	Vdc
Collector Cutoff Current (V _{CB} = 20 Vdc, I _E = 0) (V _{CB} = 15 Vdc, I _E = 0)	2N5088 2N5089	I _{CBO}	—	50 50	nAdc
Emitter Cutoff Current (V _{EB(off)} = 3.0 Vdc, I _C = 0) (V _{EB(off)} = 4.5 Vdc, I _C = 0)		I _{EBO}	—	50 100	nAdc

ON CHARACTERISTICS

DC Current Gain (I _C = 100 μAdc, V _{CE} = 5.0 Vdc)	2N5088 2N5089	h _{FE}	300 400	900 1200	—
(I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc)	2N5088 2N5089		350 450	—	—
(I _C = 10 mAdc, V _{CE} = 5.0 Vdc)(2)	2N5088 2N5089		300 400	—	—
Collector-Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 1.0 mAdc)		V _{CE(sat)}	—	0.5	Vdc
Base-Emitter On Voltage (I _C = 10 mAdc, V _{CE} = 5.0 Vdc)(2)		V _{BE(on)}	—	0.8	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product (I _C = 500 μAdc, V _{CE} = 5.0 Vdc, f = 20 MHz)		f _T	50	—	MHz
Collector-Base Capacitance (V _{CB} = 5.0 Vdc, I _E = 0, f = 100 kHz)		C _{cb}	—	4.0	pF
Emitter-Base Capacitance (V _{BE} = 0.5 Vdc, I _C = 0, f = 100 kHz)		C _{eb}	—	10	pF
Small-Signal Current Gain (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc, f = 1.0 kHz)	2N5088 2N5089	h _{fe}	350 450	1400 1800	—
Noise Figure (I _C = 100 μAdc, V _{CE} = 5.0 Vdc, R _S = 10 kohms, f = 10 Hz to 15.7 kHz)	2N5088 2N5089	NF	—	3.0 2.0	dB

(1) R_{θJA} is measured with the device soldered into a typical printed circuit board.
(2) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

