2N4924
2N4925

CASE 79-02, STYLE 1
TO-39 (TO-205AD)

AMPLIFIER TRANSISTOR

NPN SILICON

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Refer to 2N3498 for graphs.

MAXIMUM RATINGS

Rating	Symbol	2N4924	2N4925	Unit
Collector-Emitter Voltage	V_{CEO}	100	150	Vdc
Collector-Base Voltage	V_{CBO}	100	150	Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current — Continuous	I_C	200		mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	1.0 5.71		Watt mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	5.0 28.6		Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	35	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	175	°C/W

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (1) (I_C = 10 mAdc, I_B = 0)	2N4924 2N4925	$V_{(BR)CEO}$	 100 150	 — —	Vdc
Collector-Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)	2N4924 2N4925	$V_{(BR)CBO}$	 100 150	 — —	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current (V_{CB} = 50 Vdc, I_E = 0) (V_{CB} = 75 Vdc, I_E = 0)		I_{CBO}	 — —	 0.1 0.1	μAdc
Emitter Cutoff Current (V_{BE} = 3.0 Vdc)		I_{EBO}	—	0.1	μAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 1.0 mAdc, V_{CE} = 10 Vdc) (I_C = 10 mAdc, V_{CE} = 10 Vdc) (I_C = 150 mAdc, V_{CE} = 10 Vdc)		h_{FE}	 25 35 40	 — — 200	—
Collector-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1.0 mAdc) (I_C = 50 mAdc, I_B = 5.0 mAdc)		$V_{CE(sat)}$	 — —	 0.25 0.4	Vdc
Base-Emitter On Voltage (I_C = 50 mAdc, V_{CE} = 10 Vdc)		$V_{BE(on)}$	—	0.95	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product (2) (I_C = 20 mAdc, V_{CE} = 20 Vdc, f = 100 MHz)		f_T	100	500	MHz
Collector-Base Capacitance (V_{CB} = 20 Vdc, I_E = 0, f = 140 kHz)		C_{cb}	—	10	pF
Emitter-Base Capacitance (V_{EB} = 1.0 Vdc, I_C = 0, f = 140 kHz)		C_{eb}	—	80	pF

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.
(2) $f_T = |h_{fe}| \bullet f_{test}$.