

# SILICON N-P-N TRANSISTOR

Maximum Ratings, Absolute-Maximum Values:

	2N4934	2N4935	2N4936	
COLLECTOR-TO-BASE VOLTAGE, $V_{CB0}$	40	50	50	max. V
COLLECTOR-TO-EMITTER VOLTAGE, $V_{CE0}$	30	40	40	max. V
EMITTER-TO-BASE VOLTAGE, $V_{EB0}$	3	3	3	max. V
COLLECTOR CURRENT, $I_C$	Limited by dissipation			
TRANSISTOR DISSIPATION, $P_T$ :				
At ambient temperatures } Up to 25°C . . . . .	200 max.			mW
} Above 25°C . . . . .	derate at 1.14 mW/°C			
TEMPERATURE RANGE:				
Storage and operating (Junction)	-65 to +200			°C
LEAD TEMPERATURE (During Soldering):				
At distances not less than 1/32" from seating surface for 10 seconds max. . . . .	265 max.			°C

ELECTRICAL CHARACTERISTICS, At Ambient Temperature ( $T_A$ ) of 25°C:

CHARACTERISTIC	Symbol	TEST CONDITIONS					LIMITS									UNITS
		Frequency f	DC Collector-to-Base Voltage $V_{CB}$	DC Collector-to-Emitter Voltage $V_{CE}$	DC Emitter Current $I_E$	DC Collector Current $I_C$	Type 2N4934			Type 2N4935			Type 2N4936			
							Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Collector-Cutoff Current	$I_{CBO}$	-	15	-	0	-	-	10	-	-	10	-	-	10	nA	
Collector-to-Base Breakdown Voltage	$BV_{CB0}$	-	-	-	0	0.001	40	-	-	50	-	-	50	-	V	
Collector-to-Emitter Breakdown Voltage	$BV_{CE0}$	-	-	-	$I_B=0$	1	30	-	-	40	-	-	40	-	V	
Emitter-to-Base Breakdown Voltage	$BV_{EB0}$	-	-	-	-0.001	0	3	-	-	3	-	-	3	-	V	
DC Forward Current-Transfer Ratio	$h_{FE}$	-	-	8	-	2	40	-	170	60	-	200	60	-	250	-
Magnitude of Small-Signal Forward Current-Transfer Ratio	$ h_{fe} ^a$	1 kHz 100 MHz	- -	8 8	- -	2 2	45 7	- -	195 16	70 7	- -	225 16	70 7	- -	280 16	-
Collector-to-Base Feedback Capacitance	$C_{cb}^b$	0.1 to 1	8	-	0	-	-	0.2	0.25	-	0.2	0.25	-	0.2	0.25	pF
Collector-to-Base Time Constant	$r_b C_c^a$	31.9	8	-	-2	-	1	-	8	1	-	6	1	-	6	ps
Small-Signal, Common-Emitter Power Gain in Unneutralized Amplifier Circuit (See Figs. 1 and 4)	$G_{pe}^a$	200 450	- -	8 8	- -	2 2	18 -	- -	26 -	21 -	- -	28 -	- -	13 -	- 18	dB
Small-Signal, Common-Emitter Power Gain in Neutralized Amplifier Circuit	$G_{pe}^a$	450	-	8	-	2	-	-	-	-	-	-	-	20	-	dB
Measured Noise Figure	$NF^a$	200 See Figs. 1 and 2	$R_S = 200 \Omega^c$	8	-	2	-	-	3.5	-	-	3.0	-	-	-	dB
		450 See Figs. 3 and 4	$R_S = 100 \Omega^c$	8	-	2	-	-	-	-	-	-	-	-	4.5	

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