SEMICONDUCTOR
TECHNICAL DATA

2N3485A,
2N3486A

PNP Silicon Small-Signal Transistors

. . .designed for high-speed switching circuits and DC to VHF amplifier applications.

MAXIMUM RATINGS			
Rating	**Symbol**	**Value**	**Unit**
Collector-Emitter Voltage	V_{CEO}	60	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current	I_C	600	mAdc
Power Dissipation @ T_A = 25°C Derate above 25°C @ T_C = 25°C Derate above 25°C	P_T	0.4 2.28 2.0 11.43	Watts mW/°C Watts mW/°C
Operating Junction and Storage Temperature Range	T_J, T_{stg}	–65 to 200	°C

CASE 26-03, STYLE 1
TO-206AB (TO-46)

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)	$V_{(BR)CEO}$	60	—	Vdc
Collector-Base Breakdown Voltage (I_C = 10 µAdc, I_E = 0)	$V_{(BR)CBO}$	60	—	Vdc
Base-Emitter 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} = 50 Vdc, I_E = 0, T_A = 150°C)	I_{CBO}	— —	10 10	nAdc µAdc
Emitter Cutoff Current (V_{EB} = 3.5 Vdc, I_C = 0)	I_{EBO}	—	50	nAdc

(continued)

(1) Pulsed. Pulse Width 250 to 350 µs. Duty Cycle 1.0 to 2.0%.

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

Characteristic		Symbol	Min	Max	Unit
ON CHARACTERISTICS					
DC Current Gain (I_C = 0.1 mAdc, V_{CE} = 10 Vdc)	2N3485A	h_{FE}	40	—	—
	2N3486A		75	—	
(I_C = 1.0 mAdc, V_{CE} = 10 Vdc)	2N3485A		40	—	
	2N3486A		100	—	
(I_C = 10 mAdc, V_{CE} = 10 Vdc)	2N3485A		40	—	
	2N3486A		100	—	
(I_C = 150 mAdc, V_{CE} = 10 Vdc)(1)	2N3485A		40	120	
	2N3486A		100	300	
(I_C = 500 mAdc, V_{CE} = 10 Vdc)(1)	2N3485A		40	—	
	2N3486A		50	—	
(I_C = 1.0 mAdc, V_{CE} = 10 Vdc, T_A = −65°C)	2N3485A		20	—	
	2N3486A		40	—	
Collector-Emitter Saturation Voltage(1) (I_C = 150 mAdc, I_B = 15 mAdc)		$V_{CE(sat)}$	—	0.4	Vdc
(I_C = 500 mAdc, I_B = 50 mAdc)			—	1.6	
Base-Emitter Saturation Voltage(1) (I_C = 150 mAdc, I_B = 15 mAdc)		$V_{BE(sat)}$	—	1.3	Vdc
(I_C = 500 mAdc, I_B = 50 mAdc)			—	2.6	
SMALL-SIGNAL CHARACTERISTICS					
Current Gain (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	2N3485A	h_{fe}	40	—	—
	2N3486A		100	—	
Small-Signal Current Transfer Ratio, Magnitude (I_C = 50 mAdc, V_{CE} = 20 Vdc, f = 100 MHz)		$\|h_{fe}\|$	2.0	10	—
Output Capacitance (V_{CB} = 10 Vdc, f = 0.1 to 1.0 MHz)		C_{obo}	—	8.0	pF
Input Capacitance (V_{EB} = 2.0 Vdc, f = 0.1 to 1.0 MHz)		C_{ibo}	—	30	pF
SWITCHING CHARACTERISTICS (See Figures 31 & 39)					
Turn-On Time	2N3485A	t_{on}	—	175	ns
Turn-Off Time	2N3486A	t_{off}	—	200	ns
Turn-On + Turn-Off Time (Non-Saturated Switching)		$t_{on} + t_{off}$	—	18	ns

ASSURANCE TESTING (Pre/Post Burn-In)
Burn-In Conditions: T_A = +25°C, V_{CB} = 30 Vdc
P_T = 400 mW

Characteristics Tested		Symbol	Initial and End Point Limits		Unit
			Min	Max	
Collector Cutoff Current (V_{CB} = 50 Vdc)		I_{CBO}	—	10	nAdc
DC Current Gain(1) (I_C = 150 mAdc, V_{CE} = 10 Vdc)	2N3485A	h_{FE}	40	120	—
	2N3486A		100	300	

Delta from Pre-Burn-In Measured Values		Min	Max	
Delta Collector Cutoff Current	ΔI_{CBO}	—	±100 or ±5.0 whichever is greater	% of Initial Value nAdc
Delta DC Current Gain(1)	Δh_{FE}	—	±15	% of Initial Value

(1) Pulsed: Pulse Width 250 to 350 µs, Duty Cycle 1.0 to 2.0%.