

MAXIMUM RATINGS

Rating	Symbol	2N2944	2N2945	2N2946	Unit
Emitter-Collector Voltage	V_{ECO}	10	20	35	Vdc
Collector-Base Voltage	V_{CBO}	15	25	40	Vdc
Emitter-Base Voltage	V_{EBO}	15	25	40	Vdc
Collector Current — Continuous	I_C	100			mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	400			mW
		2.3			mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	2.0			Watts
		11.43			mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200			$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	87.5	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	435	$^\circ\text{C/W}$

**2N2944
thru
2N2946**

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

TRANSISTOR

PNP SILICON

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Refer to 2N2944A for graphs.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector Cutoff Current ($V_{CB} = 15\text{ Vdc}, I_E = 0$)	I_{CBO}	—	—	0.1	nAdc
($V_{CB} = 25\text{ Vdc}, I_E = 0$)		—	—	0.2	
($V_{CB} = 40\text{ Vdc}, I_E = 0$)		—	—	0.5	
Emitter Cutoff Current ($V_{EB} = 15\text{ Vdc}, I_C = 0$)	I_{EBO}	—	—	0.1	nAdc
($V_{EB} = 25\text{ Vdc}, I_C = 0$)		—	—	0.2	
($V_{EB} = 40\text{ Vdc}, I_C = 0$)		—	—	0.5	

ON CHARACTERISTICS

DC Current Gain ($I_C = 1.0\text{ mAdc}, V_{CE} = 0.5\text{ Vdc}$)	h_{FE}	80	180	—	—
		40	160	—	
		30	130	—	
*DC Current Gain (inverted connection) ($I_B = 200\ \mu\text{Adc}, V_{EC} = 0.5\text{ Vdc}$)	$h_{FE}(\text{inv})$	6.0	20	—	—
		4.0	17	—	
		3.0	15	—	
Offset Voltage ($I_B = 200\ \mu\text{Adc}, I_E = 0$)	$V_{EC}(\text{ofs})$	—	0.18	0.3	mVdc
		—	0.23	0.5	
		—	0.27	0.8	
($I_B = 1.0\text{ mAdc}, I_E = 0$)		—	0.4	0.6	
		—	0.5	1.0	
		—	0.6	2.0	
($I_B = 2.0\text{ mAdc}, I_E = 0$)		—	0.8	1.0	
		—	0.9	1.6	
		—	1.0	2.5	

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product ($I_C = 1.0\text{ mAdc}, V_{CE} = 6.0\text{ Vdc}, f = 1.0\text{ MHz}$)	f_T	10	15	—	MHz
		5.0	13	—	
		3.0	12	—	
Output Capacitance ($V_{CB} = 6.0\text{ Vdc}, I_E = 0, f = 500\text{ kHz}$)	C_{obo}	—	3.2	10	pF
Input Capacitance ($V_{EB} = 6.0\text{ Vdc}, I_C = 0, f = 500\text{ kHz}$)	C_{ibo}	—	1.9	6.0	pF
"ON" Series Resistance ($I_B = 1.0\text{ mAdc}, I_E = 0, I_C = 100\ \mu\text{Arms}, f = 1.0\text{ kHz}$)	r_{ec}	—	4.0	20	Ohms
		—	4.5	35	
		—	5.0	45	

*Indicates Data in addition to JEDEC Requirements.