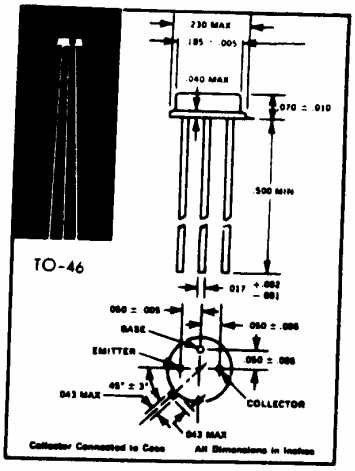
PREMIUM PERFORMANCE ULTRA LOW r_{EC} (sat) SILICON EPITAXIAL JUNCTION PNP SWITCHING TRANSISTORS

2N4006 THRU 2N4011

GEOMETRY 292

- r_{EC} (sat) 3 Ohms Typical
- LOW C_{eb}
- LOW LEAKAGE
- HIGH BV_{EBO}



ELECTRICAL DATA ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	2N4006 2N4009	2N4007 2N4010	2N4008 2N4011	UNITS
Collector to Emitter Voltage	BV_{CEO}	-6	-15	-30	Volts
Emitter to Collector Voltage	BV_{ECO}	-6	-15	-30	Volts
Collector to Base Voltage	BV_{CBO}	-10	-20	-35	Volts
Emitter to Base Voltage	BV_{EBO}	-10	-20	-35	Volts
Collector Current	I_C	100			mA
Power Dissipation	P_D	400			mW
Derating Factor	D_F	2.3			mW °C
Junction Temp. (Oper. & Stor.)	T_J	-65°C to +200°C			
Lead Temp. (1/16" ±1/32" from case)	T_L	240°C for 10 sec.			

ELECTRICAL CHARACTERISTICS: $T_A = 25°C$ (UNLESS OTHERWISE STATED)

PARAMETER	SYMBOL	CONDITION	2N4006 2N4009*		2N4007 2N4010*		2N4008 2N4011*		MATCH	UNITS
			Min.	Max.	Min.	Max.	Min.	Max.		
Collector to Base Leakage	I_{CBO}	$V_{CB} = V_{CB\,MAX}$	–	0.1	–	0.3	–	0.3	–	nA
Emitter to Base Leakage	I_{EBO}	$V_{EB} = V_{EB\,MAX}$	–	0.1	–	0.3	–	0.3	–	nA
Collector to Base Leakage	I_{CBO}	$V_{CB} = V_{CB\,MAX}$ (T_A = 85°C)	–	5.0	–	15.0	–	15.0	–	nA
Emitter to Base Leakage	I_{EBO}	$V_{EB} = V_{EB\,MAX}$ (T_A = 85°C)	–	5.0	–	15.0	–	15.0	–	nA
Offset Voltage	V_{BE}	I_B = 0.1mA, I_C = 0	–	0.2	–	0.5	–	0.5	±.02	mV
Offset Voltage	V_{BE}	I_B = 1mA; I_C = 0	–	0.5	–	0.7	–	0.8	–	mV
Inverted Saturation Resistance	$r_{EC(sat)}$	I_C = 0.1mA, I_B = 0.1mA f = 1kHz	–	15	–	20	–	20	±5	Ohms
Inverted Saturation Resistance	$r_{EC(sat)}$	I_C = 1.0mA; I_B = 0.1mA f = 1kHz	–	4.0	–	6.0	–	6.0	–	Ohms
DC Common Collector Forward Current Transfer Ratio	h_{FE}	V_{CE} = 6V; I_C = 1mA	40	–	30	–	20	–	–	–
High Frequency Current Gain	h_{fe}	V_{CE} = 6V; I_C = 1mA, f = 1MHz	20	–	15	–	15	–	–	–
Collector to Base Capacitance	C_{cb}	V_{CB} = 6V; I_E = 1mA; f = 140kHz	–	10	–	10	–	10	–	pfd
Emitter to Base Capacitance	C_{eb}	V_{EB} = 5V; I_C = 0; f = 140kHz	–	6	–	6	–	6	–	pfd
Delay Time	t_d	R_L = 220Ω V_{CC} = -5V	–	60	–	60	–	60	–	ns
Rise Time	t_r	R_B = 1K, V_{BB} = -5V	–	120	–	120	–	120	–	ns
Storage Time	t_s	V_{pulse} = -10V	–	320	–	320	–	320	±100	ns
Fall Time	t_f	Tektronix Type R plug-in	–	120	–	120	–	120	–	ns

* The 2N4009 is a matched pair of 2N4006
The 2N4010 is a matched pair of 2N4007
The 2N4011 is a matched pair of 2N4008

2N4009 - 2N4011

ΔV_{CE} at I_B = 0.1mA; -25°C to +100°C ±50μV
ΔV_{BE} at I_B = 0.1mA; I_E = 0 T_A = 25°C ±100MV

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