Microsemi LAWRENCE

TECHNICAL DATA

PNP SILICON LOW POWER TRANSISTOR

Qualified per MIL-PRF-19500/354

Devices		*Qualified Level*
2N2604	**2N2605**	**JAN, JANTX JANTXV**

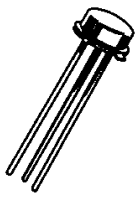
MAXIMUM RATINGS

Ratings	Symbol	2N2604	2N2605	Units
Collector-Base Voltage	V_{CBO}	80	70	Vdc
Collector-Emitter Voltage	V_{CEO}	60		Vdc
Emitter-Base Voltage	V_{EBO}	6.0		Vdc
Collector Current	I_C	30		mAdc
Total Power Dissipation @ $T_A = +25^0C$ (1)	P_T	400		$mW/^0C$
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		^0C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.437	$^0C/mW$

1) Derate linearly 2.28 $mW/^0C$ above $T_A = +25^0C$



TO-46*
(TO-206AB)

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_A = 25^0C$ unless otherwise noted)

Characteristics		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Base Breakdown Voltage I_C = 10 µAdc	2N2604 2N2605	$V_{(BR)CBO}$	80 70		Vdc
Collector-Emitter Breakdown Voltage I_C = 10 mAdc		$V_{(BR)CEO}$	60		Vdc
Emitter-Base Breakdown Current I_E = 10 µAdc		$V_{(BR)EBO}$	6.0		Vdc
Collector-Base Cutoff Current V_{CB} = 50 Vdc		I_{CBO}		10	ηAdc
Emitter-Base Cutoff Current V_{EB} = 5.0 Vdc		I_{EBO}		2.0	ηAdc
Collector-Emitter Cutoff Current V_{CE} = 50 Vdc		I_{CES}		10	ηAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics		Symbol	Min.	Max.	Unit
ON CHARACTERISTICS (2)					
Forward-Current Transfer Ratio					
I_C = 10 µAdc, V_{CE} = 5.0 Vdc	2N2604	h_{FE}	40	120	
	2N2605		100	300	
I_C = 500 µAdc, V_{CE} = 5.0 Vdc	2N2604		60	180	
	2N2605		150	450	
I_C = 10 mAdc, V_{CE} = 5.0 Vdc	2N2604		40	160	
	2N2605		100	400	
Collector-Emitter Saturation Voltage I_C = 10 mAdc, I_B = 500 µAdc		$V_{CE(sat)}$		0.3	Vdc
Base-Emitter Saturation Voltage I_C = 10 mAdc, I_B = 500 µAdc		$V_{BE(sat)}$	0.7	0.9	Vdc
DYNAMIC CHARACTERISTICS					
Small-Signal Short-Circuit Input Impedance I_C = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz	2N2604	h_{ie}	1.0	10	kΩ
	2N2605		2.0	20	
Small-Signal Open-Circuit Output Admittance I_C = 1.0 mAdc, V_{CE} = 5.0 Vdc, f = 1.0 kHz	2N2604	h_{oe}		40	µmhos
	2N2605			60	
Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 1.0 mAdc, V_{CE} = 5.0 Vdc, f= 1.0 kHz	2N2604	h_{fe}	60	180	
	2N2605		150	450	
Magnitude of Small-Signal Forward Current Transfer Ratio I_C = 0.5 mAdc, V_{CE} = 5.0 Vdc, f = 30 MHz		$\lvert h_{fe} \rvert$	1.0	8.0	
Output Capacitance V_{CB} = 5.0 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz		C_{obo}		6.0	pF
Noise Figure					
V_{CE} = 5.0 Vdc, I_C = 10 µAdc, R_g = 10 kΩ, f = 100 Hz		F_1		5.0	dB
V_{CE} = 5.0 Vdc, I_C = 10 µAdc, R_g = 10 kΩ, f = 1.0 kHz		F_2		3.0	
V_{CE} = 5.0 Vdc, I_C = 10 µAdc, R_g = 10 kΩ, f = 10 kHz		F_3		3.0	

(2) Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.