

2N1605 2N1605A

COMPUTER TRANSISTORS

Ge n-p-n alloy-junction types used in medium-speed switching applications in data-processing equipment. The n-p-n construction permits complementary operation with a matching p-n-p type such as the 2N404. JEDEC TO-5, Outline No.3. Terminals: 1 - emitter, 2 - base and case, 3 - collector.

MAXIMUM RATINGS

	2N1605A			
Collector-to-Base Voltage	V _{CB0}	25	40	V
Collector-to-Emitter Voltage (V _{BE} = -1 V) ...	V _{CBEV}	24	40	V
Emitter-to-Base Voltage	V _{EBO}	12	12	V
Collector Current	I _C	100	100	mA
Emitter Current	I _E	-100	-100	mA
Transistor Dissipation:				
T _A up to 25°C	P _T	150	200	mW
T _A above 25°C	P _T	See curve page 116		
Temperature Range:				
Operating (Junction)	T _J (opr)	100	100	°C
Storage	T _{STG}	-65 to 100 °C		
Lead-Soldering Temperature (10 s max)	T _L	235	235	°C

CHARACTERISTICS

Collector-to-Base Breakdown Voltage:				
I _C = 0.02 mA, I _E = 0	V _{(BR)CBO}	25	- min	V
I _C = 0.01 mA, I _E = 0	V _{(BR)CBO}	-	40 min	V
Emitter-to-Base Breakdown Voltage (I _E = 0.02 mA, I _C = 0)	V _{(BR)EBO}	12	12 min	V
Collector-to-Emitter Saturation Voltage:				
I _C = 12 mA, I _B = 0.4 mA	V _{CE(sat)}	0.15	0.15 max	V
I _C = 24 mA, I _B = 1 mA	V _{CE(sat)}	0.2	0.2 max	V
Base-to-Emitter Voltage:				
I _C = 12 mA, I _B = 0.4 mA	V _{BE}	0.35	0.35 max	V
I _C = 24 mA, I _B = 1 mA	V _{BE}	0.4	0.4 max	V
Emitter Floating Potential (11-MΩ min volt- meter between emitter and base):				
V _{CB} = 24 V	V _{EB} (fl)	1	- max	V
V _{CB} = 40 V	V _{EB} (fl)	-	1 max	V
Collector-Cutoff Current:				
V _{CB} = 12 V, I _E = 0, T _A = 25°C	I _{CBO}	5	- max	μA
V _{CB} = 12 V, I _E = 0, T _A = 80°C	I _{CBO}	125	125 max	μA
V _{CB} = 40 V, I _E = 0, T _A = 25°C	I _{CBO}	-	10 max	μA
Emitter-Cutoff Current (V _{EB} = 2.5 V, I _C = 0)	I _{EBO}	2.5	2.5 max	μA
Static Forward-Current Transfer Ratio:				
V _{CE} = 0.15 V, I _C = 12 mA	h _{FE}	30	30 min	
V _{CE} = 0.2 V, I _C = 24 mA	h _{FE}	24	24 min	
V _{CE} = 0.25 V, I _C = 20 mA	h _{FE}	40	40 min	
Small-Signal Forward-Current Transfer-Ratio Cutoff Frequency (V _{CB} = 6 V, I _E = 1 mA)	f _{hfb}	4	4 min	MHz
Total Stored Charge (V _{CC} = 5.25 V, I _C = 10 mA, I _B = 1 mA)	Q _s	1400	1400 max	pC
Output Capacitance (V _{CB} = 6 V, I _E = 1 mA, f = 2 MHz)	C _{obo}	20	20 max	pF