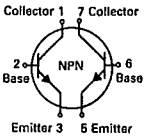
T-31-27

2N3425

CASE 654-07, STYLE 1



DUAL AMPLIFIER TRANSISTORS

NPN SILICON

3

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector-Emitter Voltage	V_{CEO}	15		Vdc
Collector-Emitter Voltage	V_{CER}	20		Vdc
Collector-Base Voltage	V_{CBO}	40		Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
		One Die	Both Die	
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.3 1.72	0.4 2.28	Watt mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	0.75 4.3	1.5 8.55	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C

Refer to MD2369,A,B for graphs.

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage(1) (I_C = 30 mAdc, R_{BE} ≤ 10 ohms)	$V_{CER(sus)}$	20	—	Vdc
Collector-Emitter Sustaining Voltage(1) (I_C = 10 mAdc, I_B = 0)	$V_{CEO(sus)}$	15	—	Vdc
Collector-Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)	$V_{(BR)CBO}$	40	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current (V_{CE} = 20 Vdc, $V_{EB(off)}$ = 0.25 Vdc, T_A = 125°C)	I_{CEX}	—	15	μAdc
Collector Cutoff Current (V_{CB} = 20 Vdc, I_E = 0) (V_{CB} = 20 VDc, I_E = 0, T_A = 150°C)	I_{CBO}	— —	0.025 15	μAdc
Emitter Cutoff Current (V_{EB} = 4.0 Vdc, I_C = 0)	I_{EBO}	—	0.2	μAdc
ON CHARACTERISTICS				
DC Current Gain (I_C = 0.5 mAdc, V_{CE} = 1.0 Vdc) (I_C = 10 mAdc, V_{CE} = 1.0 Vdc) (I_C = 10 mAdc, V_{CE} = 1.0 Vdc, T_A = −55°C)	h_{FE}	12 30 12	— 120 —	—
Collector-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1.0 mAdc) (I_C = 7.0 mAdc, I_B = 0.7 mAdc, T_A = −55°C to +125°C)	$V_{CE(sat)}$	— —	0.4 0.5	Vdc
Base-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1.0 mAdc) (I_C = 7.0 mAdc, I_B = 0.7 mAdc, T_A = −55°C)	$V_{BE(sat)}$	0.7 —	0.85 0.9	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product (I_C = 20 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	f_T	300	—	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 140 kHz)	C_{obo}	—	6.0	pF
Input Capacitance (V_{BE} = 0.5 Vdc, I_C = 0, f = 140 kHz)	C_{ibo}	—	9.0	pF
Small-Signal Current Gain (I_C = 10 mAdc, V_{CE} = 1.0 Vdc, f = 1.0 kHz)	h_{fe}	20	—	—
Real Part of Input Impedance (I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 300 MHz)	$Re(h_{ie})$	—	60	Ohms
SWITCHING CHARACTERISTICS				
Storage Time (I_C = 10 mAdc, I_{B1} = 10 mAdc, I_{B2} = 10 mAdc)	t_s	—	40	ns
Turn-On Time (V_{CC} = 3.0 Vdc, $V_{EB(off)}$ = 2.0 Vdc, I_C = 10 mAdc, I_{B1} = 3.0 mAdc)	t_{on}	—	50	ns
Turn-Off Time (V_{CC} = 3.0 Vdc, I_C = 10 mAdc, I_{B1} = 3.0 mAdc, I_{B2} = 1.0 mAdc)	t_{off}	—	90	ns

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 1.0%.