

2N3425

CASE 654-07, STYLE 1
DUAL
AMPLIFIER TRANSISTORS
 NPN SILICON

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	P _D	0.3	0.4	Watt
Derate above 25°C		1.72	2.28	mW/°C
Total Device Dissipation @ T _C = 25°C	P _D	0.75	1.5	Watts
Derate above 25°C		4.3	8.55	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 mA _{dc} , R _{BE} ≤ 10 ohms)	V _{CER(sus)}	20	—	Vdc
Collector-Emitter Sustaining Voltage(1) (I _C = 10 mA _{dc} , I _B = 0)	V _{CEO(sus)}	15	—	Vdc
Collector-Base Breakdown Voltage (I _C = 10 μA _{dc} , I _E = 0)	V _{(BR)CBO}	40	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 10 μA _{dc} , 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	μA _{dc}
Collector Cutoff Current (V _{CB} = 20 Vdc, I _E = 0)	I _{CBO}	—	0.025	μA _{dc}
(V _{CB} = 20 Vdc, I _E = 0, T _A = 150°C)		—	15	
Emitter Cutoff Current (V _{EB} = 4.0 Vdc, I _C = 0)	I _{EBO}	—	0.2	μA _{dc}
ON CHARACTERISTICS				
DC Current Gain (I _C = 0.5 mA _{dc} , V _{CE} = 1.0 Vdc)	h _{FE}	12	—	—
(I _C = 10 mA _{dc} , V _{CE} = 1.0 Vdc)		30	120	
(I _C = 10 mA _{dc} , V _{CE} = 1.0 Vdc, T _A = -55°C)		12	—	
Collector-Emitter Saturation Voltage (I _C = 10 mA _{dc} , I _B = 1.0 mA _{dc})	V _{CE(sat)}	—	0.4	Vdc
(I _C = 7.0 mA _{dc} , I _B = 0.7 mA _{dc} , T _A = -55°C to +125°C)		—	0.5	
Base-Emitter Saturation Voltage (I _C = 10 mA _{dc} , I _B = 1.0 mA _{dc})	V _{BE(sat)}	0.7	0.85	Vdc
(I _C = 7.0 mA _{dc} , I _B = 0.7 mA _{dc} , T _A = -55°C)		—	0.9	
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product (I _C = 20 mA _{dc} , 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 mA _{dc} , V _{CE} = 1.0 Vdc, f = 1.0 kHz)	h _{fe}	20	—	—
Real Part of Input Impedance (I _C = 10 mA _{dc} , V _{CE} = 10 Vdc, f = 300 MHz)	Re(h _{ie})	—	50	Ohms
SWITCHING CHARACTERISTICS				
Storage Time (I _C = 10 mA _{dc} , I _{B1} = 10 mA _{dc} , I _{B2} = 10 mA _{dc})	t _s	—	40	ns
Turn-On Time (V _{CC} = 3.0 Vdc, V _{EB(off)} = 2.0 Vdc, I _C = 10 mA _{dc} , I _{B1} = 3.0 mA _{dc})	t _{on}	—	50	ns
Turn-Off Time (V _{CC} = 3.0 Vdc, I _C = 10 mA _{dc} , I _{B1} = 3.0 mA _{dc} , I _{B2} = 1.0 mA _{dc})	t _{off}	—	90	ns

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