2N4854
2N4855

2N4854 — JAN, JTX, JTXV AVAILABLE
CASE 654-07, STYLE 5

COMPLEMENTARY DUAL AMPLIFIER TRANSISTOR

NPN/PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector-Emitter Voltage	V_{CEO}	40		Vdc
Collector 1 to Collector 2 Voltage Voltage Rating any Lead to Case	V_{C1C2}	±200 ±200		Vdc
Collector-Base Voltage	V_{CBO}	60		Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current — Continuous	I_C	600		mAdc
		One Die	Both Die	
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	300 2.0	600 4.0	mW mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.0 6.67	2.0 13.33	Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C

Refer to MD6001 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 = 10 mAdc, I_B = 0)		$V_{(BR)CEO}$	40	—	Vdc
Collector-Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)		$V_{(BR)CBO}$	60	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current (V_{CB} = 50 Vdc, I_E = 0, T_A = 150°C)		I_{CBO}	—	10	μAdc
Emitter Cutoff Current (V_{EB} = 3.0 Vdc, I_C = 0)		I_{EBO}	—	10	nAdc
ON CHARACTERISTICS					
DC Current Gain		h_{FE}			—
(I_C = 0.1 mAdc, V_{CE} = 10 Vdc)	2N4854		35	—	
	2N4855		20	—	
(I_C = 1.0 mAdc, V_{CE} = 10 Vdc)	2N4854		50	—	
	2N4855		25	—	
(I_C = 10 mAdc, V_{CE} = 10 Vdc)(1)	2N4854		75	—	
	2N4855		35	—	
(I_C = 150 mAdc, V_{CE} = 10 Vdc)(1)	2N4854		100	300	
	2N4855		40	120	
(I_C = 150 mAdc, V_{CE} = 1.0 Vdc)(1)	2N4854		50	—	
	2N4855		20	—	
(I_C = 300 mAdc, V_{CE} = 10 Vdc)(1)	2N4854		35	—	
	2N4855		20	—	
Collector-Emitter Saturation Voltage(1) (I_C = 150 mAdc, I_B = 15 mAdc)		$V_{CE(sat)}$	—	0.4	Vdc
Base-Emitter Saturation Voltage(1) (I_C = 150 mAdc, I_B = 15 mAdc)		$V_{BE(sat)}$	0.75	1.2	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product (I_C = 20 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)		f_T	200	—	MHz

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

Characteristic		Symbol	Min	Max	Unit
Collector-Base Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)		C_{cb}	—	8.0	pF
Input Impedance (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	2N4854 2N4855	h_{ie}	 1.5 0.75	 9.0 4.5	kohms
Small-Signal Current Gain (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	2N4854 2N4855	h_{fe}	 60 30	 300 150	—
Output Admittance (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)	2N4854 2N4855	h_{oe}	 — —	 50 25	μmhos
Noise Figure (I_C = 100 μAdc, V_{CE} = 10 Vdc, R_S = 1.0 kohm, f = 1.0 kHz)		NF	—	8.0	dB

SWITCHING CHARACTERISTICS

Delay Time	(V_{CC} = 30 Vdc, $V_{BE(off)}$ = 0.5 Vdc,	t_d	—	20	ns
Rise Time	I_C = 150 mAdc, I_{B1} = 15 mAdc)	t_r	—	40	ns
Storage Time	(V_{CC} = 30 Vdc, I_C = 150 mAdc,	t_s	—	280	ns
Fall Time	I_{B1} = I_{B2} = 15 mAdc)	t_f	—	70	ns

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