

**2N2060,A
2N2223,A
2N2480,A**



**DUAL
AMPLIFIER TRANSISTOR**
NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	2N2060,A 2N2223,A	2N2480	2N2480A	Unit
Collector-Emitter Voltage	V _{CEO}	60	40	40	V _{dc}
Collector-Emitter Voltage	V _{CER}	80	—	—	V _{dc}
Collector-Base Voltage	V _{CB0}	100	75	80	V _{dc}
Emitter-Base Voltage	V _{EB0}	7.0	5.0	5.0	V _{dc}
Collector Current — Continuous	I _C	500			mAdc
		One Die		All Die Equal Power	
Total Device Dissipation @ T _A = 25°C	P _D				mW
2N2060,A		0.5		0.6	
2N2223,A		0.5		0.6	
2N2480,A		0.3		0.6	
Derate above 25°C					mW/°C
2N2060,A		2.86		3.43	
2N2223,A		2.86		3.43	
2N2480,A		1.72		3.43	
Total Device Dissipation @ T _C = 25°C	P _D				Watts
2N2060,A		1.5		3.0	
2N2223,A		1.6		3.0	
2N2480,A		1.0		2.0	
Derate above 25°C					mW/°C
2N2060,A		8.6		17.2	
2N2223,A		9.1		11.4	
2N2480,A		5.7		11.4	
Operating and Storage Junction Temperature Range	T _J , T _{stg}	- 65 to + 200			°C

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage(1) (I _C = 100 mAdc, R _{GE} ≤ 10 ohms)	V _{CER(sus)}	80	—	V _{dc}
Collector-Emitter Sustaining Voltage(1) (I _C = 20 mAdc, I _B = 0)	V _{CEO(sus)}	40	—	V _{dc}
		40	—	
		60	—	
(I _C = 30 mAdc, I _B = 0)		—	—	
		—	—	
		—	—	
Collector-Base Breakdown Voltage (I _C = 100 μAdc, I _E = 0)	V _{(BR)CBO}	100	—	V _{dc}
2N2060, 2N2060A, 2N2223, 2N2223A		75	—	
		80	—	
		—	—	
Emitter-Base Breakdown Voltage (I _E = 100 μAdc, I _C = 0)	V _{(BR)EBO}	7.0	—	V _{dc}
2N2060, 2N2060A, 2N2223, 2N2223A		5.0	—	
		—	—	
		—	—	
Collector Cutoff Current (V _{CB} = 30 Vdc, I _E = 0, T _A = 150°C)	I _{CBO}	—	15	μAdc
(V _{CB} = 60 Vdc, I _E = 0)		—	0.050	
		—	0.020	
		—	—	
(V _{CB} = 80 Vdc, I _E = 0)		—	0.002	
		—	0.010	
		—	—	
(V _{CB} = 80 Vdc, I _E = 0, T _A = 150°C)		—	10	
		—	15	
		—	—	
Emitter Cutoff Current (V _{BE} = 5.0 Vdc, I _C = 0)	I _{EBO}	—	2.0	nAdc
2N2060, 2N2060A 2N2223, 2N2223A 2N2480 2N2480A		—	10	
		—	50	
		—	20	
		—	—	

