

### GENERAL DESCRIPTION:—

The 8050 is an NPN epitaxial silicon planar transistor designed for use in the audio output stage and converter/inverter circuits. Complementary to 8550.

TO-92A



EBC

### ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures	
Storage Temperature	-55°C to +135°C
Operating Temperature	135°C
Lead Temperature (soldering, 10 seconds time limit)	230°C
Maximum power Dissipation	
Total Dissipation at 25°C Ambient Temperature (Note 2)	1.0 Watt
Total Dissipation at 25°C Case Temperature (Note 2)	3.0 Watt
Maximum Voltage	
VCBO Collector to Base Voltage	30V
VCEO Collector to Emitter Voltage (Note 3)	25V
VEBO Emitter to Base Voltage	6V
I <sub>C</sub> Collector current (continuous)	1.5A

### ELECTRICAL CHARACTERISTICS (25°C Free Air Temperature unless otherwise noted)

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
HFE1	DC current gain (Note 4)	85		300		I <sub>c</sub> = 100mA V <sub>ce</sub> = 1V
HFE2	DC current gain	40				I <sub>c</sub> = 800mA V <sub>ce</sub> = 1V
VCE (SAT)	Collector Saturation Voltage (Note 4)		0.2	0.5	V	I <sub>c</sub> = 800mA I <sub>b</sub> = 80mA
VBE (SAT)	Base Saturation Voltage (Note 4)		0.92	1.2	V	I <sub>c</sub> = 800mA I <sub>b</sub> = 80mA
LV <sub>ceo</sub>	Collector to Emitter breakdown Voltage (Note 3 & 4)	25			V	I <sub>c</sub> = 10mA I <sub>b</sub> = 0
BV <sub>cb0</sub>	Collector to Base breakdown voltage	30			V	I <sub>c</sub> = 100uA I <sub>e</sub> = 0
BV <sub>eb0</sub>	Emitter to Base breakdown voltage	6			V	I <sub>e</sub> = 100uA I <sub>c</sub> = 0
I <sub>cbo</sub>	Collector cutoff current			0.1	uA	V <sub>cb</sub> = 20V I <sub>e</sub> = 0
h <sub>fe</sub>	High frequency current gain	1.0				I <sub>c</sub> = 50mA V <sub>ce</sub> = 10V f = 100MHz
C <sub>cb</sub>	Collector to Base capacitance			40	pF	V <sub>cb</sub> = 10V I <sub>c</sub> = 0 f = 1MHz

### NOTES:

- (1) These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
- (2) These ratings give a maximum junction temperature of 145°C, junction to ambient thermal resistance of 120°C/Watt (derating factor of 8.33mW/°C) and junction to case thermal resistance of 40°C/W (derating factor of 25mW/°C)
- (3) Rating refers to a high-current point where collector-to-emitter voltage is lowest.
- (4) Pulse Conditions: length ≤ 300 us; duty cycle ≤ 2%

### CLASSIFICATION OF H<sub>FE</sub> GROUP

GROUP	MIN	MAX	TEST CONDITION
B	85	160	I <sub>c</sub> = 100mA V <sub>ce</sub> = 1V
C	120	200	I <sub>c</sub> = 100mA V <sub>ce</sub> = 1V
D	160	300	I <sub>c</sub> = 100mA V <sub>ce</sub> = 1V



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