

## 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	
IC 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		Ic = 100mA Vce = 1V
HFE2	DC current gain	40				Ic = 800mA Vce = 1V
VCE (SAT)	Collector Saturation Voltage (Note 4)		0.2	0.5	V	Ic = 800mA Ib = 80mA
VBE (SAT)	Base Saturation Voltage (Note 4)		0.92	1.2	V	Ic = 800mA Ib = 80mA
LVceo	Collector to Emitter breakdown Voltage (Note 3 & 4)	25			V	Ic = 10mA Ib = 0
BVcbo	Collector to Base breakdown voltage	30			V	Ic = 100uA Ie = 0
BVebo	Emitter to Base breakdown voltage	6			V	Ie = 100uA Ic = 0
Icbo	Collector cutoff current			0.1	uA	Vcb = 20V Ie = 0
hfe	High frequency current gain	1.0				Ic = 50mA Vce = 10V f = 100MHz
Ccb	Collector to Base capacitance			40	pF	Vcb = 10V Ic = 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 HFE GROUP

GROUP	MIN	MAX	TEST CONDITION
B	85	160	Ic = 100mA Vce = 1V
C	120	200	Ic = 100mA Vce = 1V
D	160	300	Ic = 100mA Vce = 1V



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