# 2SD2096

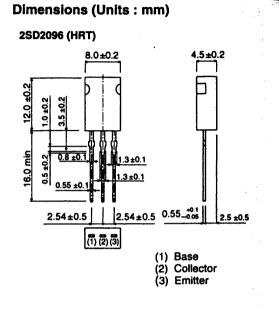
## **Transistor, NPN**

### Features

- available in HRT package
- low collector saturation voltage, typically  $V_{CE(sat)} = 0.3$  V at  $I_C/I_B = 2$  A/ 0.2 A
- excellent current-to-gain characteristics
- large collector loss:  $P_C = 1.8 W$
- wide safe operating area (SOA)

### **Applications**

• low frequency power amplifier



### Absolute maximum ratings (T<sub>a</sub> = 25°C)

Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	V <sub>CBO</sub>	80	V	
Collector-to-emitter voltage	V <sub>CEO</sub>	60	V	
Emitter-to-base voltage	V <sub>EBO</sub>	5	V	
Collector current	lc –	3	A	Continuous (dc)
		6	A	Single pulse, P <sub>W</sub> = 100 ms
Collector dissipation	Pc	1.8	W	
Junction temperature	Tj	150	°C	
Storage temperature	T <sub>stg</sub>	-55 ~ +150	°C	

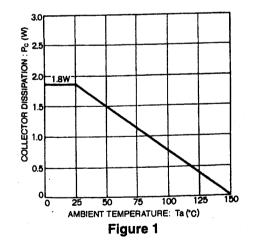
Parameter	Symbol	Min	Typical	Max	Unit	Conditions	
Collector-to-base breakdown voltage	BV <sub>CBO</sub>	80			v	I <sub>C</sub> = 50 μA	
Collector-to-emitter breakdown voltage	BV <sub>CEO</sub>	60			v	I <sub>C</sub> = 1 mA	
Emitter-to-base breakdown voltage	BV <sub>EBO</sub>	5			V	I <sub>E</sub> = 50 μA	
Collector cutoff current	Ісво			10	μΑ	V <sub>CB</sub> = 60 V	
Emitter cutoff current	IEBO			10	μΑ	V <sub>EB</sub> = 4 V	
DC current gain	h <sub>FE</sub>	60		320		$V_{CE} = 5 V$ , $I_{C} = 0.5 A$ , single pulse	
Collector-to-emitter saturation voltage	V <sub>CE(sat)</sub>		0.3	1.0	V	$I_C/I_B = 2 \text{ A}/0.2 \text{ A}$ , single pulse	
Base-to-emitter saturation voltage	V <sub>BE(sat)</sub>			1.5	V	$I_C/I_B = 2 \text{ A}/0.2 \text{ A}$ , single pulse	
Transition frequency	f <sub>T</sub>		8		MHz	$V_{CE} = 5 V$ , $I_E = -0.5 A$ , $f = 5 MHz$	
Output capacitance	C <sub>ob</sub>		70		pF	$V_{CB} = 10 \text{ V}, I_E = 0 \text{ A}, f = 1 \text{ MHz}$	

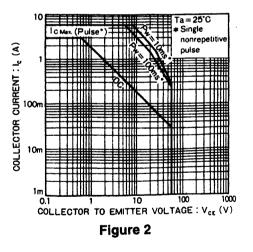
## Electrical characteristics (unless otherwise noted, $T_a = 25^{\circ}C$ )

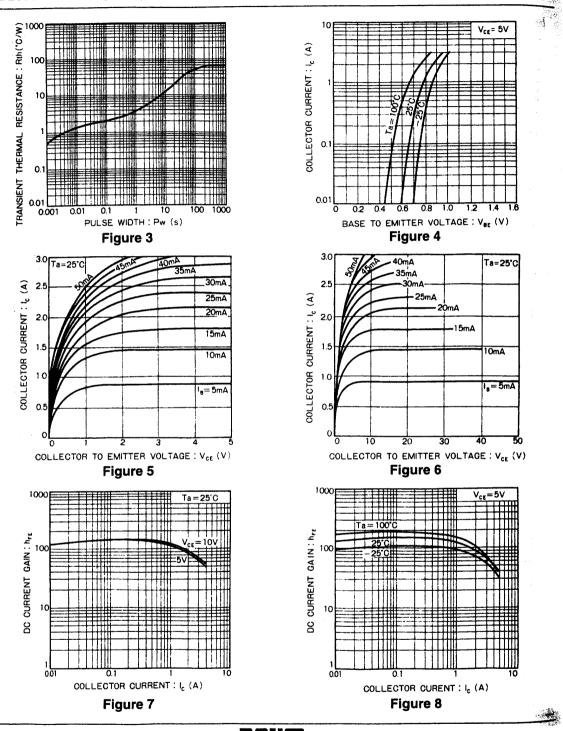
### h<sub>FE</sub> rankings

Item	D	E	F
h <sub>FE</sub>	60 - 120	100 ~ 200	160 ~ 320

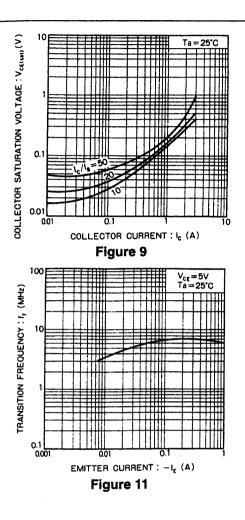
### **Electrical characteristic curves**

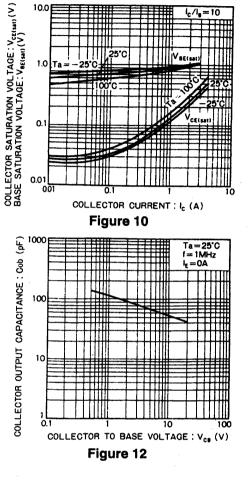






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### **Ordering information**

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