

# 2SD2096

## Transistor, NPN

### Features

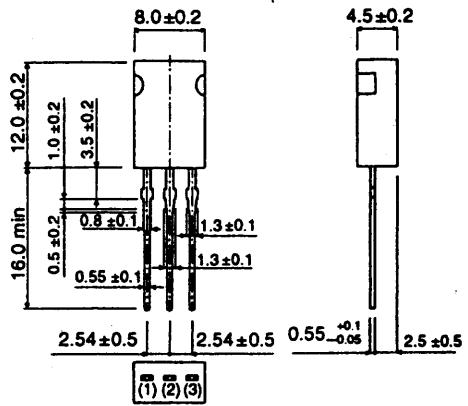
- available in HRT package
- low collector saturation voltage, typically  $V_{CE(sat)} = 0.3$  V at  $I_C/I_B = 2$  A/0.2 A
- excellent current-to-gain characteristics
- large collector loss:  $P_C = 1.8$  W
- wide safe operating area (SOA)

### Applications

- low frequency power amplifier

### Dimensions (Units : mm)

2SD2096 (HRT)



(1) Base  
(2) Collector  
(3) Emitter

### Absolute maximum ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	$V_{CBO}$	80	V	
Collector-to-emitter voltage	$V_{CEO}$	60	V	
Emitter-to-base voltage	$V_{EBO}$	5	V	
Collector current	$I_C$	3	A	Continuous (dc)
		6	A	Single pulse, $P_W = 100$ ms
Collector dissipation	$P_C$	1.8	W	
Junction temperature	$T_j$	150	°C	
Storage temperature	$T_{stg}$	-55 ~ +150	°C	

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

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

 $h_{\text{FE}}$  rankings

Item	D	E	F
$h_{\text{FE}}$	60 ~ 120	100 ~ 200	160 ~ 320

## Electrical characteristic curves

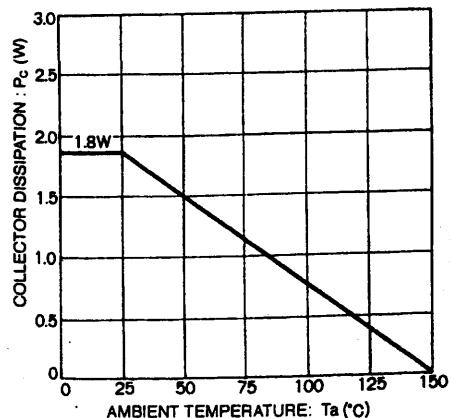


Figure 1

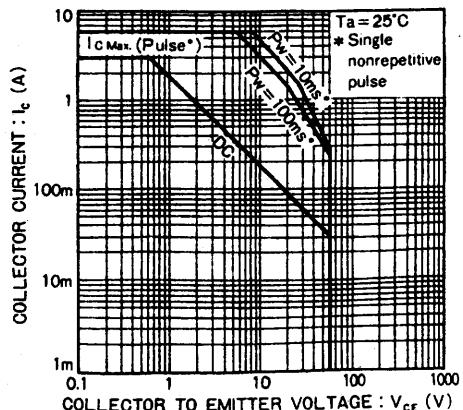
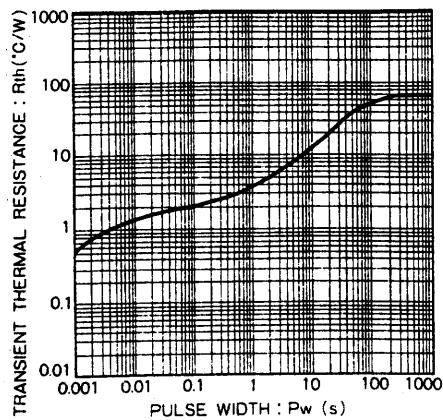


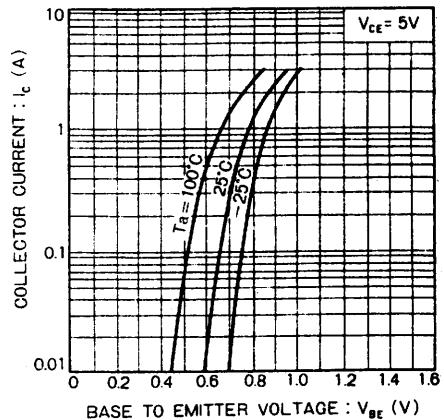
Figure 2

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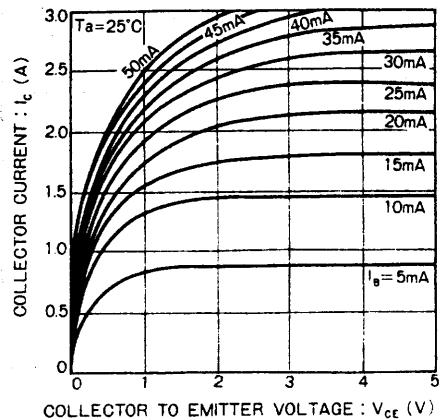
**2SD2096 Transistor, NPN, 2SD series**



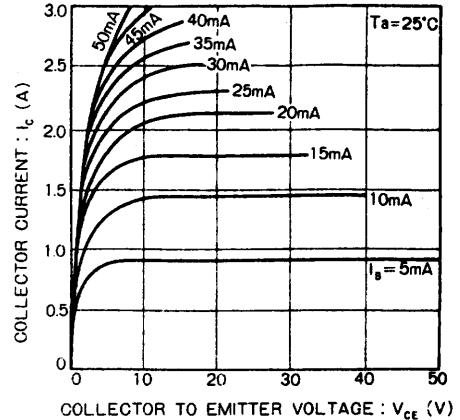
**Figure 3**



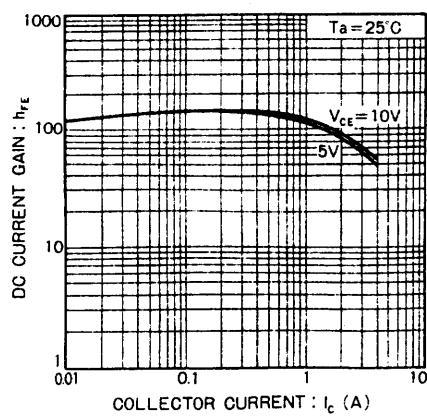
**Figure 4**



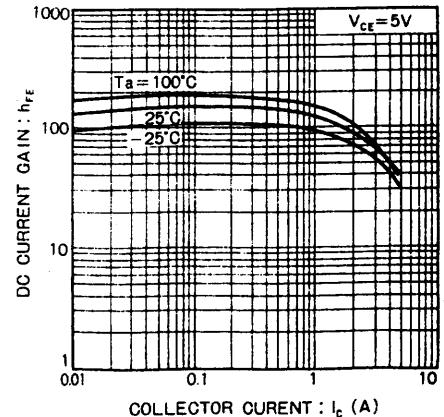
**Figure 5**



**Figure 6**



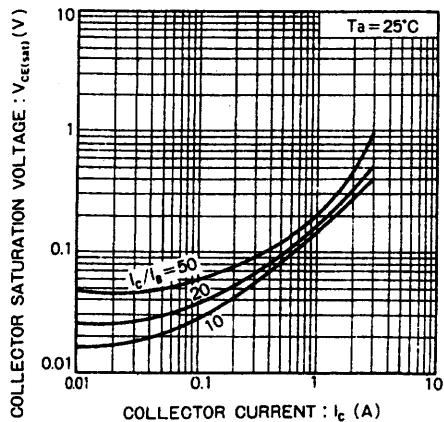
**Figure 7**



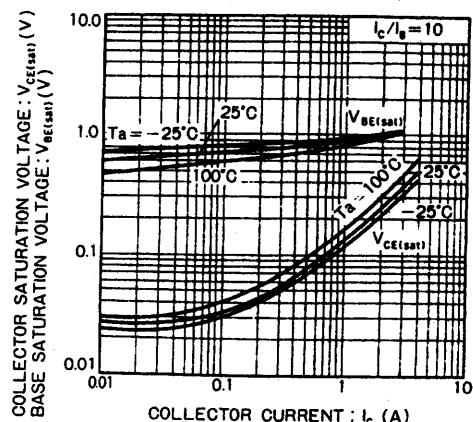
**Figure 8**

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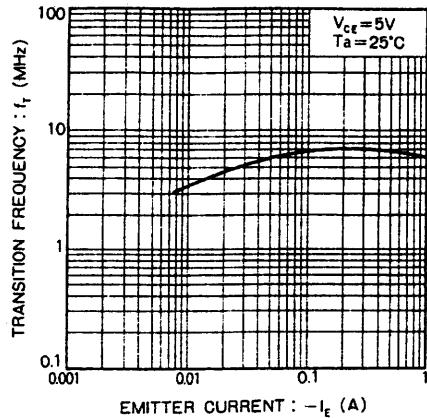
Transistor, NPN, 2SD series **2SD2096**



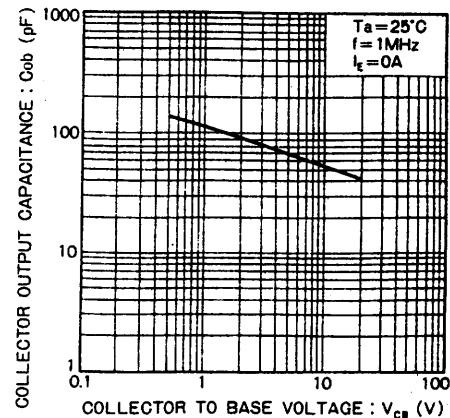
**Figure 9**



**Figure 10**



**Figure 11**



**Figure 12**

**Ordering information**

Package	Tape
Code	T114
Basic order quantity	1 000
2SD2096	★

★ = Standard, ☆ = Semi-standard, \* = Special order

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## Appendix

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