2SD2033A

Transistor, NPN

Features

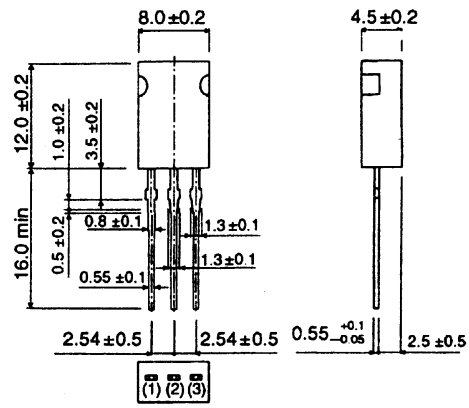
- available in HRT package
- high breakdown voltage: BV_{CEO} = 160 V
- high transition frequency (f_T) and low output capacitance (C_{ob})
- wide safe operating area (SOA)

Applications

- low frequency power amplifier

Dimensions (Units : mm)

2SD2033A (HRT)



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

Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	V_{CBO}	160	V	
Collector-to-emitter voltage	V_{CEO}	160	V	
Emitter-to-base voltage	V_{EBO}	5	V	
Collector current	I_C	1.5	A	Continuous (dc)
		3	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	

Electrical characteristics (unless otherwise noted, T_a = 25°C)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Collector-to-base breakdown voltage	BV_{CBO}	160			V	I_C = 50 µA
Collector-to-emitter breakdown voltage	BV_{CEO}	160			V	I_C = 1 mA
Emitter-to-base breakdown voltage	BV_{EBO}	5			V	I_E = 50 µA
Collector cutoff current	I_{CBO}			1.0	µA	V_{CB} = 120 V
Emitter cutoff current	I_{EBO}			1.0	µA	V_{EB} = 4 V
DC current gain	h_{FE}	60		200		V_{CE} = 5 V, I_C = 0.1 A
Collector-to-emitter saturation voltage	$V_{CE(sat)}$			2.0	V	I_C/I_B = 1 A/0.1 A, single pulse
Base-to-emitter saturation voltage	$V_{BE(sat)}$			1.5	V	I_C/I_B = 1 A/0.1 A, single pulse
Transition frequency	f_T		80		MHz	V_{CE} = 5 V, I_E = –0.1 A, f = 30 MHz
Output capacitance	C_{ob}		20		pF	V_{CB} = 10 V, I_E = 0 A, f = 1 MHz

h_{FE} rankings

Item	D	E
h_{FE}	60 ~ 120	100 ~ 200

Electrical characteristic curves

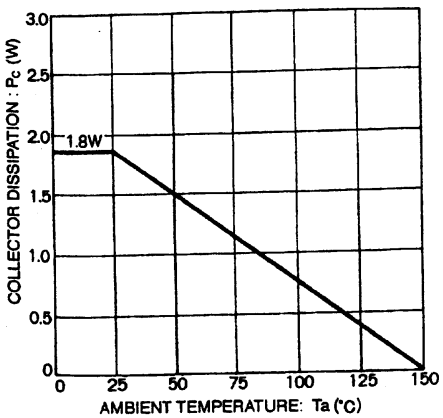


Figure 1

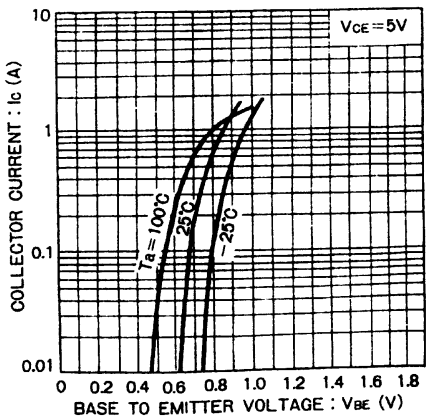


Figure 2

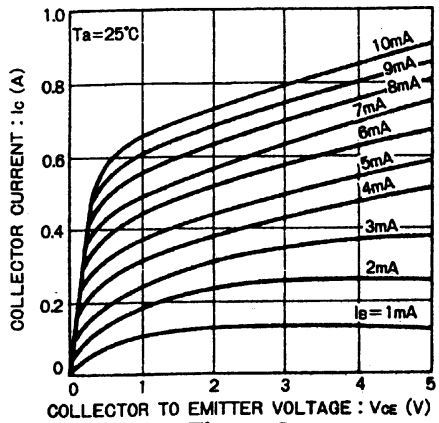


Figure 3

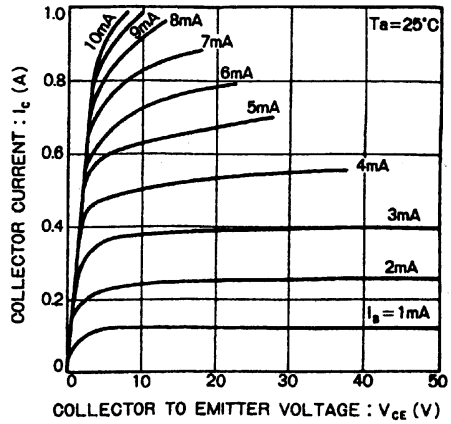


Figure 4

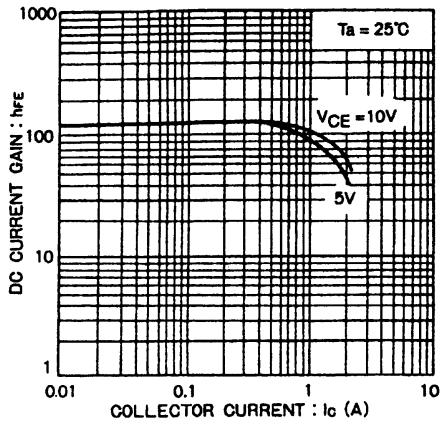


Figure 5

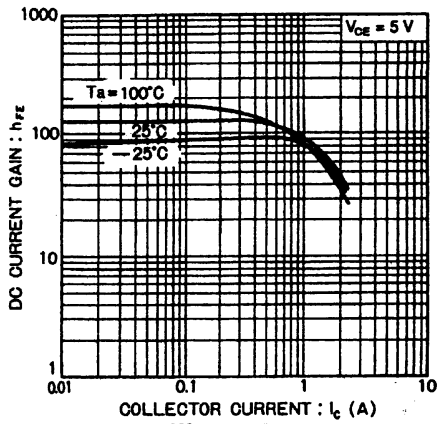


Figure 6

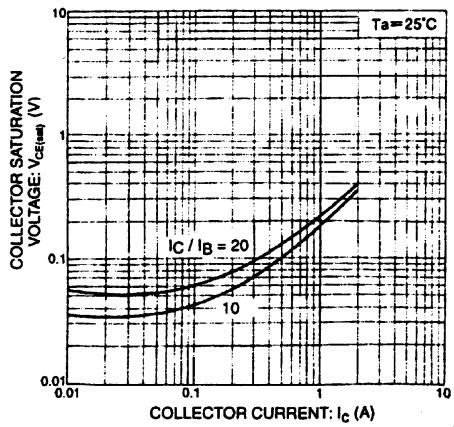


Figure 7

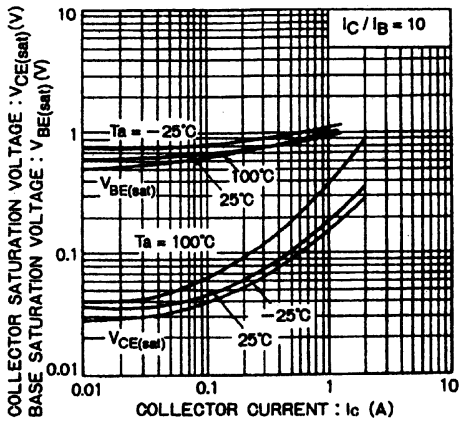


Figure 8

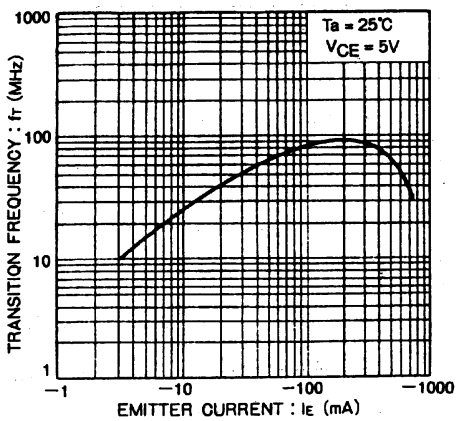


Figure 9

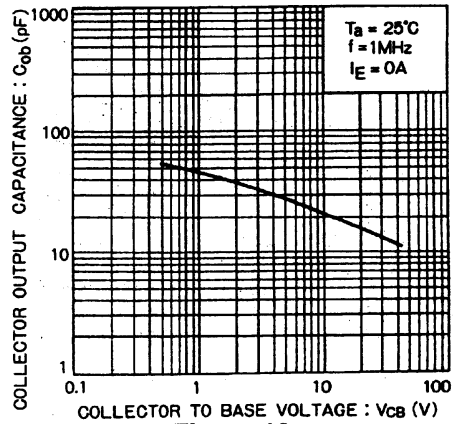


Figure 10

Ordering information

Package	Tape
Code	T114
Basic order quantity	1 000
2SD2033A	★
★ = Standard, ☆ = Semi-standard, ✳ = Special order	

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