

### Features

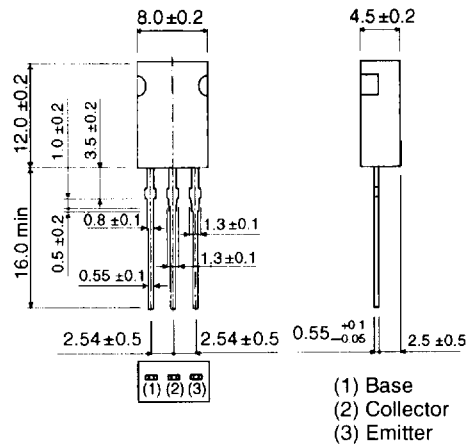
- available in HRT package
- high collector breakdown voltage,  $BV_{CEO} = -120\text{ V}$
- wide safe operating area (SOA)
- high transition frequency and small output capacitance

### Applications

- power amplifier

### Dimensions (Units : mm)

2SB1353 (HRT)



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

Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	$V_{CBO}$	-120	V	
Collector-to-emitter voltage	$V_{CEO}$	-120	V	
Emitter-to-base voltage	$V_{EBO}$	-5	V	
Collector current	$I_C$	-1.5	A	Continuous (dc)
		-3.0	A	Single pulse, $P_W = 100\text{ ms}$
Collector dissipation	$P_C$	1.8	W	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$	

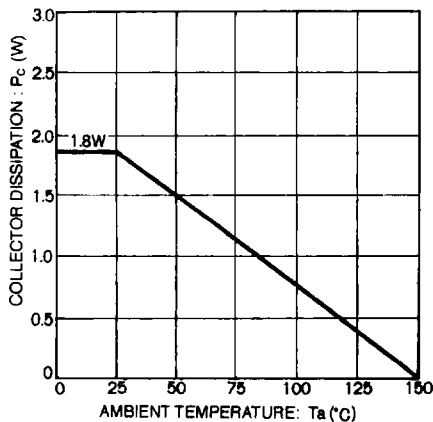
**Electrical characteristics (unless otherwise noted,  $T_a = 25^\circ\text{C}$ )**

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Collector-to-base breakdown voltage	$BV_{CBO}$	-120			V	$I_C = -50 \mu\text{A}$
Collector-to-emitter breakdown voltage	$BV_{CEO}$	-120			V	$I_C = 1 \text{ mA}$
Emitter-to-base breakdown voltage	$BV_{EBO}$	-5			V	$I_E = -50 \mu\text{A}$
Collector cutoff current	$I_{CBO}$			-1.0	$\mu\text{A}$	$V_{CB} = -100 \text{ V}$
Emitter cutoff current	$I_{EBO}$			-1.0	$\mu\text{A}$	$V_{EB} = -4 \text{ V}$
DC current gain	$h_{FE}$	60		320		$V_{CE} = -5 \text{ V}, I_C = -0.1 \text{ A}$
Collector-to-emitter saturation voltage	$V_{CE(sat)}$			-2	V	$I_C/I_B = -1 \text{ A}/-0.1 \text{ A}$ , single pulse
Base-to-emitter saturation voltage	$V_{BE(sat)}$			-1.5	V	$I_C/I_B = -1 \text{ A}/-0.1 \text{ A}$ , single pulse
Transition frequency	$f_T$		50		MHz	$V_{CE} = -5 \text{ V}, I_E = 0.1 \text{ A}, f = 30 \text{ MHz}$
Output capacitance	$C_{ob}$		30		pF	$V_{CB} = -10 \text{ V}, I_E = 0 \text{ A}, f = 1 \text{ MHz}$

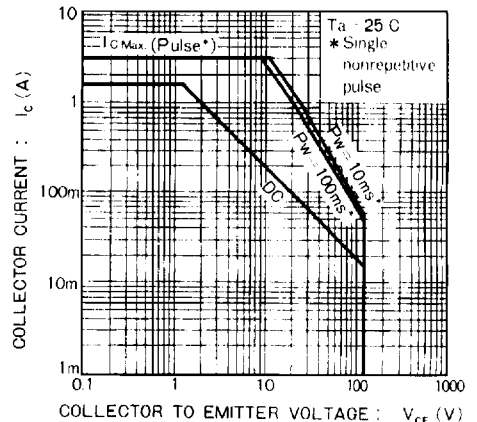
**$h_{FE}$  rankings**

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

**Electrical characteristic curves**



**Figure 1**



**Figure 2**

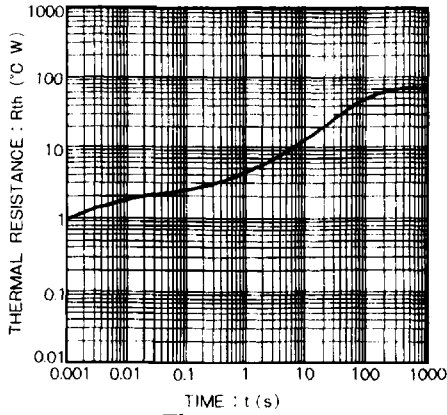


Figure 3

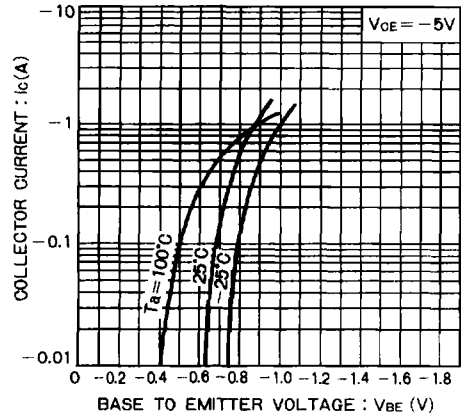


Figure 4

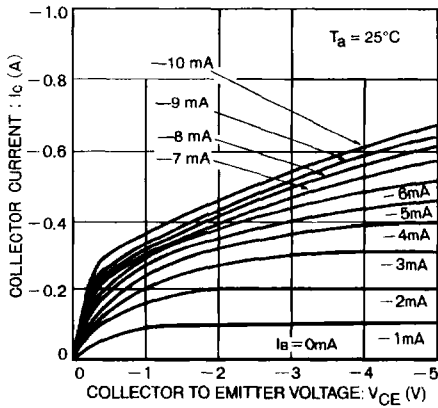


Figure 5

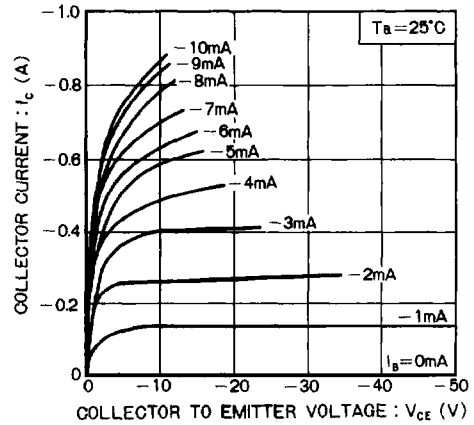


Figure 6

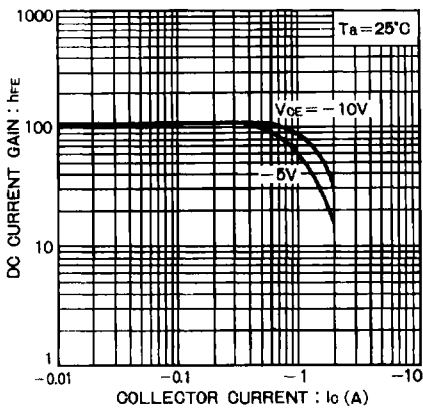


Figure 7

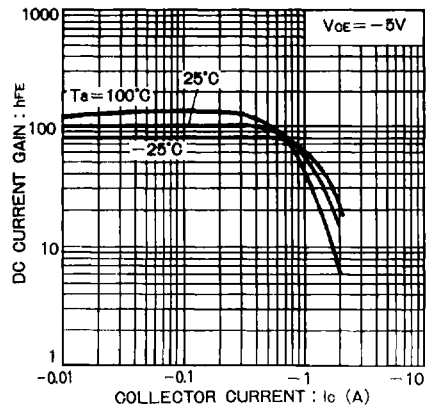


Figure 8

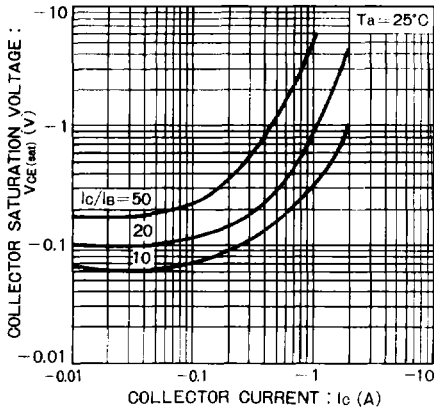


Figure 9

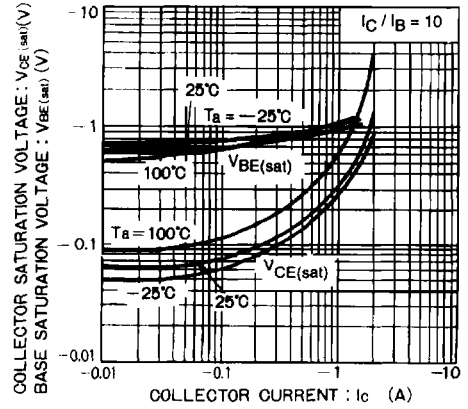


Figure 10

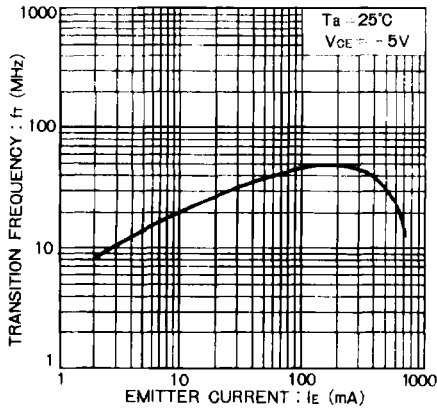


Figure 11

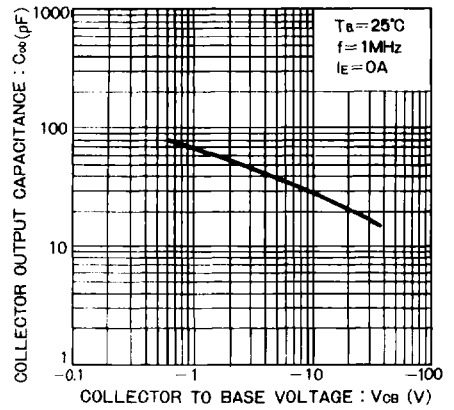


Figure 12

Ordering information

Package	Tape
Code	T114
Basic order quantity	1 000
2SB1353	★
★ = Standard, ☆ = Semi-standard, * = Special order	