

Transistors

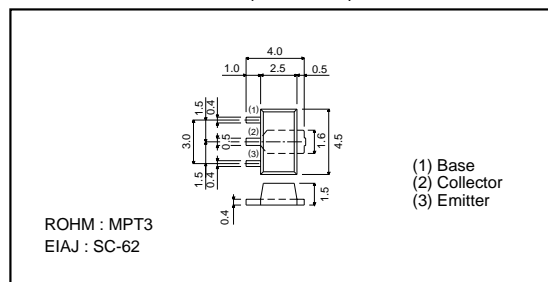
# High gain amplifier transistor (25V, 2A)

## 2SD2153

●Features

- 1) Low saturation voltage,  
typically  $V_{CE(sat)} = 0.12V$  at  $I_c = I_B = 1A / 20mA$
- 2) Excellent DC current gain characteristics.

●External dimensions (Unit : mm)



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CB0}$	30	V
Collector-emitter voltage	$V_{CE0}$	25	V
Emitter-base voltage	$V_{EB0}$	6	V
Collector current	$I_c$	2	A(DC)
		3	A(Pulse) *1
Collector power dissipation	$P_c$	0.5	W
		2 *2	
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

\*1 Single pulse, Pw=10ms  
\*2 Mounted on a 40 × 40 × 0.7mm Ceramic substrate

●Packaging specifications and hFE

Type	2SD2153
Package	MPT3
hFE	UVW
Marking	DN *
Code	T100
Basic ordering unit (pieces)	1000

\* Denotes hFE

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CB0}$	30	-	-	V	$I_c = 50\mu A$
Collector-emitter breakdown voltage	$BV_{CE0}$	25	-	-	V	$I_c = 1mA$
Emitter-base breakdown voltage	$BV_{EB0}$	6	-	-	V	$I_E = 50\mu A$
Collector cutoff current	$I_{CB0}$	-	-	0.5	$\mu A$	$V_{CB} = 20V$
Emitter cutoff current	$I_{EB0}$	-	-	0.5	$\mu A$	$V_{EB} = 5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.12	0.5	V	$I_c/I_B = 1A/20mA$ *
DC current transfer ratio	hFE	560	-	2700	-	$V_{CE}/I_c = 6V/0.5A$
Transition frequency	f <sub>t</sub>	-	110	-	MHz	$V_{CE} = 10V, I_E = -10mA, f = 100MHz$
Output capacitance	C <sub>ob</sub>	-	22	-	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

\* Measured using pulse current.

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●Electrical characteristics curves

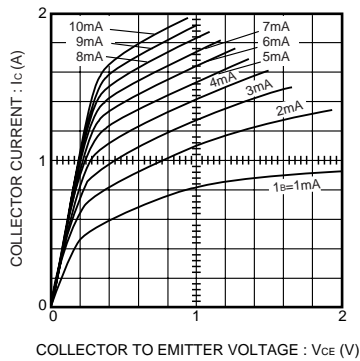


Fig.1 Ground emitter output characteristics

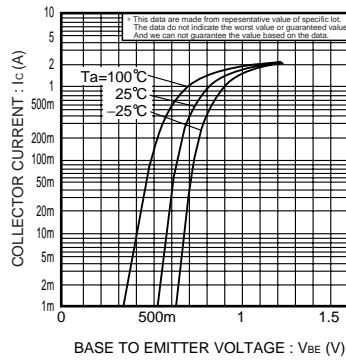


Fig.2 Ground emitter propagation characteristics

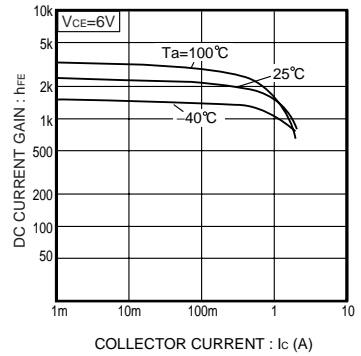


Fig.3 DC current gain

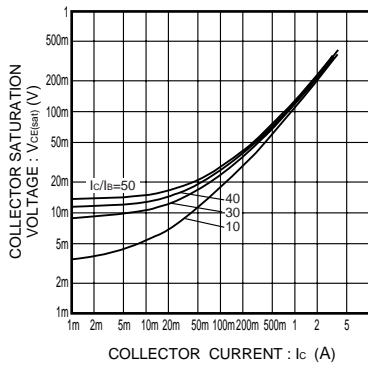


Fig.4 Collector-emitter saturation voltage vs. collector current

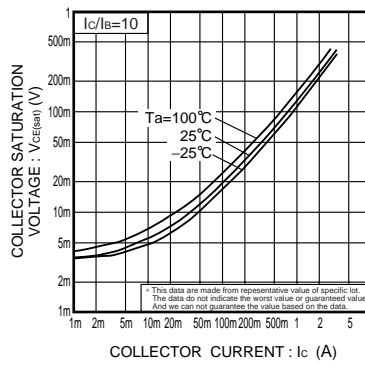


Fig.5 Collector-emitter saturation voltage vs. collector current

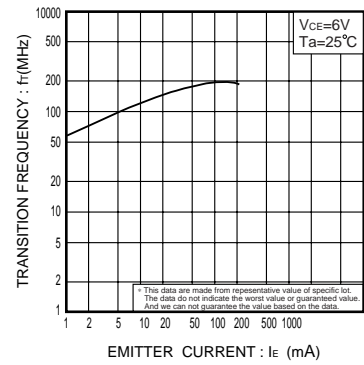


Fig.6 Gain bandwidth product vs. emitter current

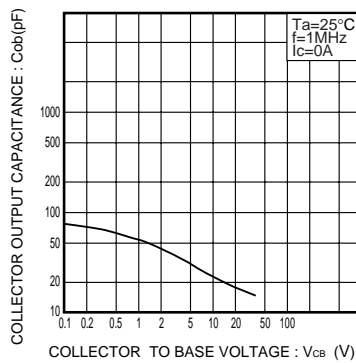


Fig.7 Collector output capacitance vs. collector-base voltage

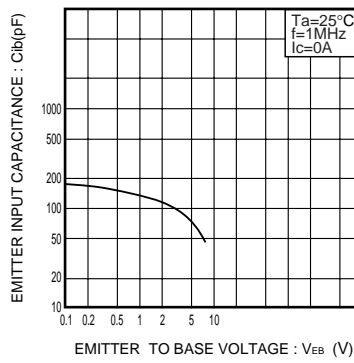


Fig.8 Emitter input capacitance vs. emitter-base voltage

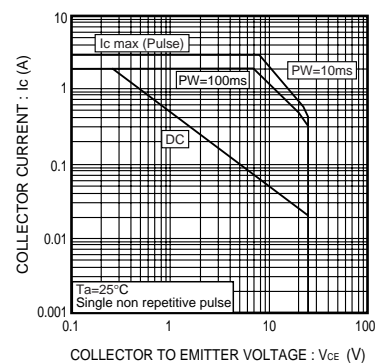


Fig.9 Safe operating area

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