

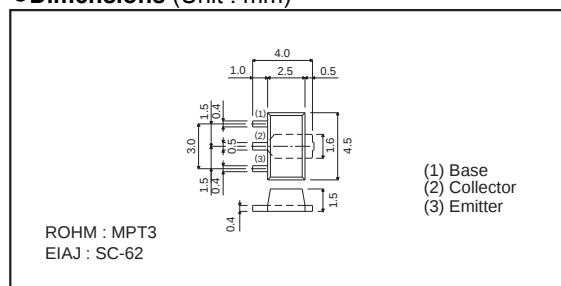
High gain amplifier transistor (25V, 2A)

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.

●Dimensions (Unit : mm)



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	25	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	2	A(DC)
		3	A(Pulse) *1
Collector power dissipation	P_C	0.5	W
		2	
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

*1 Single pulse, $P_w=10ms$

*2 Mounted on a $40 \times 40 \times 0.7mm$ Ceramic substrate

●Packaging specifications and h_{FE}

Type	2SD2153
Package	MPT3
h_{FE}	UVW
Marking	DN *
Code	T100
Basic ordering unit (pieces)	1000

* Denotes h_{FE}

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	—	—	V	$I_C = 50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	25	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EBO}	6	—	—	V	$I_E = 50\mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 20V$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB} = 5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.12	0.5	V	$I_C/I_B = 1A/20mA$ *
DC current transfer ratio	h_{FE}	820	—	1800	—	$V_{CE}/I_C = 6V/0.5A$
Transition frequency	f_T	—	110	—	MHz	$V_{CE} = 10V, I_E = -10mA, f = 100MHz$
Output capacitance	C_{ob}	—	22	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

* Measured using pulse current.

●Electrical characteristics curves

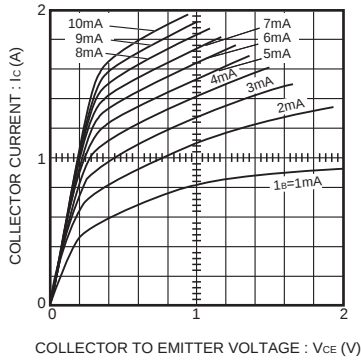


Fig.1 Ground emitter output characteristics

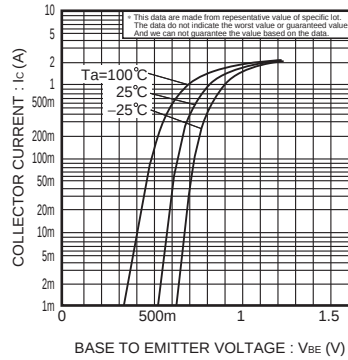


Fig.2 Ground emitter propagation characteristics

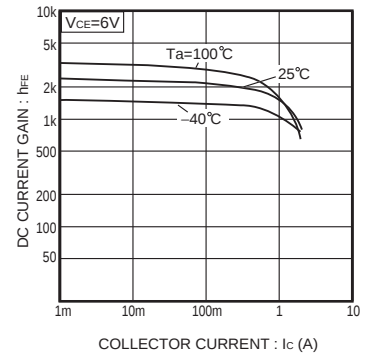


Fig.3 DC current gain

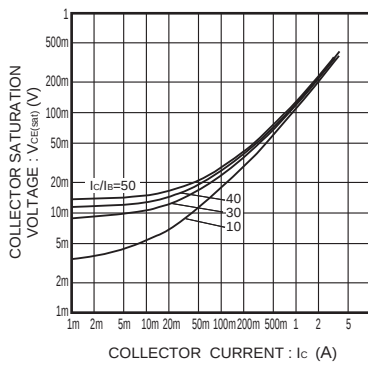


Fig.4 Collector-emitter saturation voltage vs. collector current

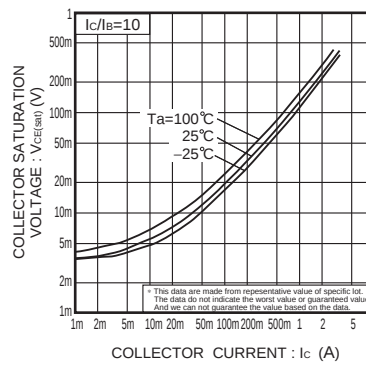


Fig.5 Collector-emitter saturation voltage vs. collector current

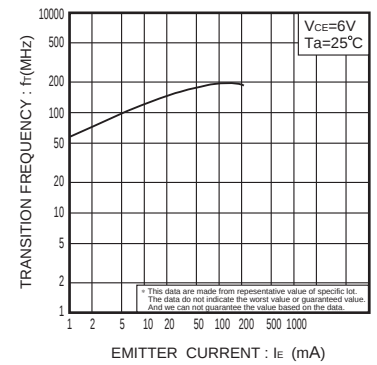


Fig.6 Gain bandwidth product vs. emitter current

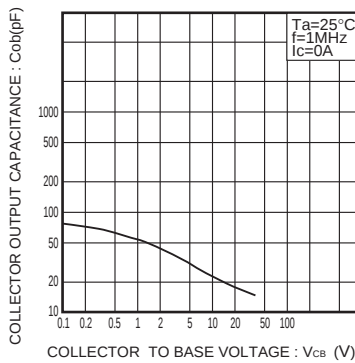


Fig.7 Collector output capacitance vs. collector-base voltage

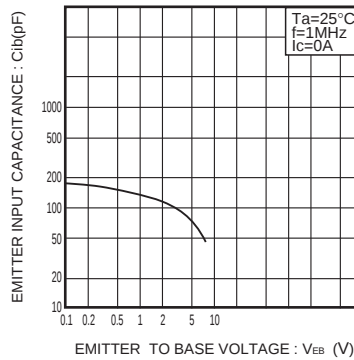


Fig.8 Emitter input capacitance vs. emitter-base voltage

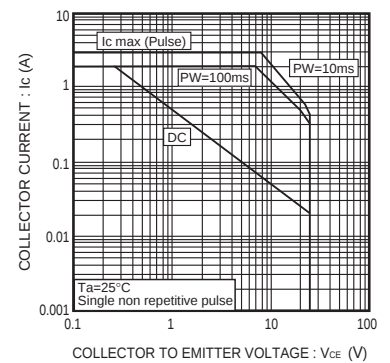


Fig.9 Safe operating area

Notes

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