

2SD2170

- 1) Built-in zener diode between collector and base.
- 2) Zener diode has low dispersion.
- 3) Strong protection against reverse power surges due to "L" loads.
- 4) Darlington connection for high DC current gain.
- 5) Built-in resistor between base and emitter.
- 6) Built-in damper diode.

[illegible]

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CBO}	90 ⁺²⁰ ₋₁₀	V
Collector-emitter voltage	V _{CEO}	90 ⁺²⁰ ₋₁₀	V
Emitter-base voltage	V _{EBO}	6	V
Collector current	I _C	2	A (DC)
		3	A (Pulse)
Collector power dissipation	P _C	0.5 *1	W
		2 *2	
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

*2 When mounted on a 40 x 40 x 0.7 mm ceramic board.

Type	2SD2170
Package	MPT3
hFE	1k to 10k
Marking	DM
Code	T100
Basic ordering unit (pieces)	1000

E : Emitter
 B : Base
 C : Collector

$R_1 \approx 3.5\text{k}\Omega$
 $R_2 \approx 300\ \Omega$

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	80	–	110	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	80	–	110	V	$I_C=1mA$
Collector cutoff current	I_{CBO}	–	–	10	μA	$V_{CB}=70V$
Emitter cutoff current	I_{EBO}	–	–	3	mA	$V_{EB}=5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	1.5	V	$I_C/I_E=1A/1mA$ *1
DC current transfer ratio	h_{FE}	1000	–	10000	–	$V_{CE}=2V$, $I_C=1A$ *1
Transition frequency	f_T	–	80	–	MHz	$V_{CE}=5V$, $I_E=-0.1A$, $f=30MHz$ *2
Output capacitance	C_{ob}	–	25	–	pF	$V_{CB}=10V$, $I_E=0A$, $f=1MHz$

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Transistors

●Electrical characteristic curves

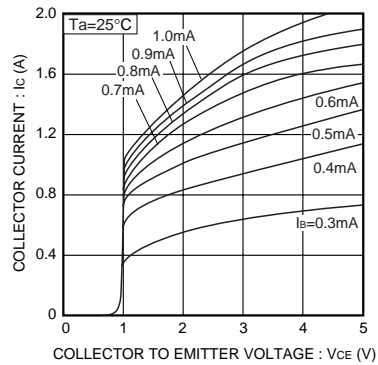


Fig.1 Grounded emitter output characteristics

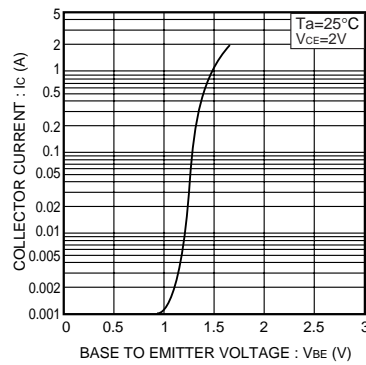


Fig.2 Grounded emitter propagation characteristics

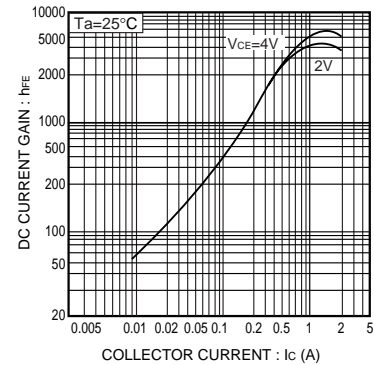


Fig.3 DC current gain vs. collector current

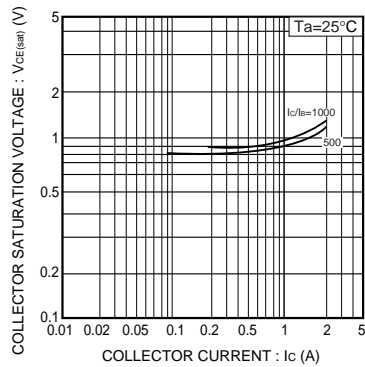


Fig.4 Collector-emitter saturation voltage vs. collector current

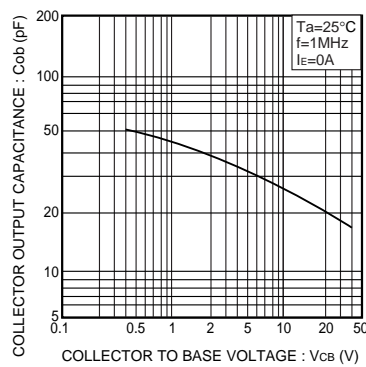


Fig.5 Collector output capacitance vs. collector-base voltage

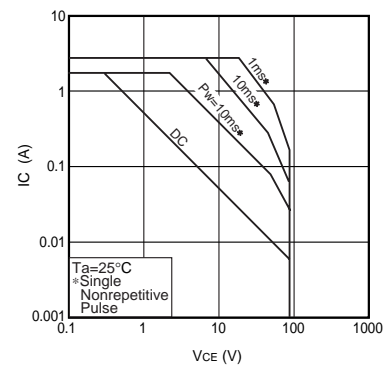


Fig.6 Safe operating area

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