

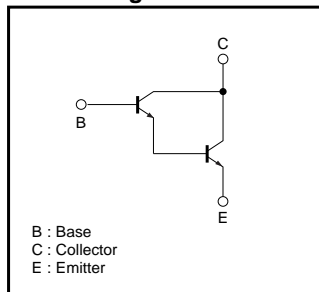
Medium Power Transistor (60V, 1A)

2SD1834

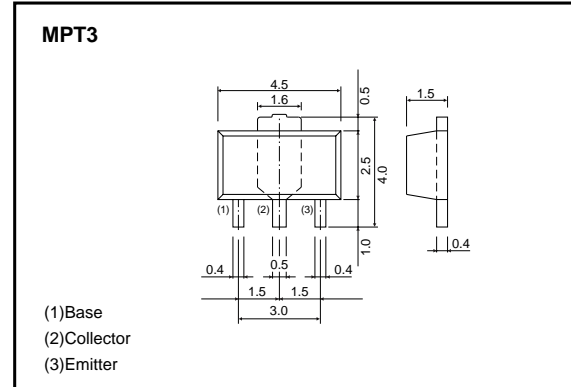
●Features

- 1) Darlington connection for high DC current gain
(typically, DC current gain = 15000 at $V_{CE} = 3V$, $I_C = 0.5A$)
- 2) High input impedance.

●Circuit diagram



●External dimensions (Unit : mm)



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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	60	V
Collector-emitter voltage	V_{CEs}	60	V *2
Emitter-base voltage	V_{EB0}	7	V
Collector current	I_C	1	A(DC)
		2	A(Pulse) *1
Collector power dissipation	P_C	0.5	W
		2 *3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

*1 Single pulse $P_w=100\text{ms}$

*2 $R_{BE}=0\Omega$

*3 Mounted on a $40 \times 40 \times 1.7\text{mm}$ ceramic substrate

●Electrical characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	60	-	-	V	$I_C=50\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CE0}	60	-	-	V	$I_C=100\mu\text{A}$, $R_{BE}=0\Omega$
Emitter-base breakdown voltage	BV_{EB0}	7	-	-	V	$I_E=50\mu\text{A}$
Collector cutoff current	I_{CB0}	-	-	1	μA	$V_{CB}=60\text{V}$
Emitter cutoff current	I_{EB0}	-	-	1	μA	$V_{EB}=6\text{V}$
DC current transfer ratio	h_{FE}	2000	-	-	-	$V_{CE}/I_C=3\text{V}/500\text{mA}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.9	1.5	V	$I_C/I_B=500\text{mA}/500\mu\text{A}$
Transition frequency	f_r	-	150	-	MHz	$V_{CE}=5\text{V}$, $I_E=-10\text{mA}$, $f=100\text{MHz}$
Output capacitance	C_{ob}	-	7	-	pF	$V_{CE}=10\text{V}$, $I_E=0\text{A}$, $f=1\text{MHz}$

* Measured using pulse current.

Transistors

●Packaging specifications and hFE

Type	2SD1834
Package	MPT3
hFE	2k~
Marking	DE*
Code	T100
Basic ordering unit (pieces)	1000

* Denotes hFE

●Electrical characteristics curves

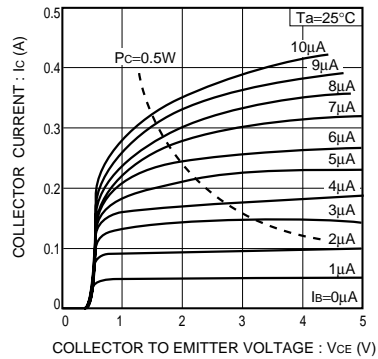


Fig.1 Ground emitter output characteristics

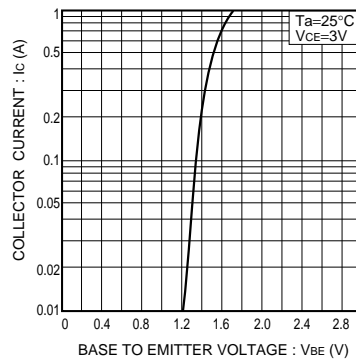


Fig.2 Ground emitter propagation characteristics

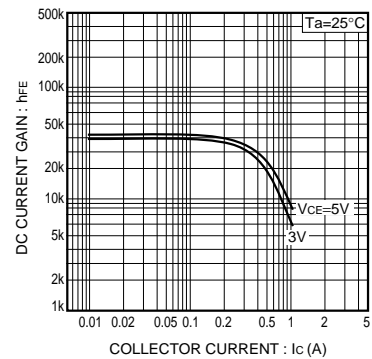


Fig.3 DC current gain vs. collector current

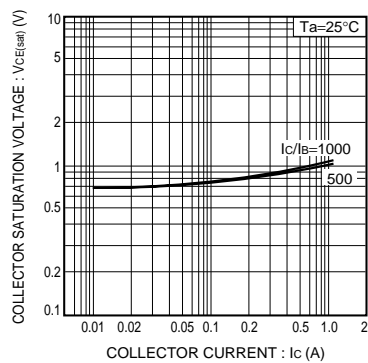


Fig.4 Collector-emitter saturation voltage vs. collector current

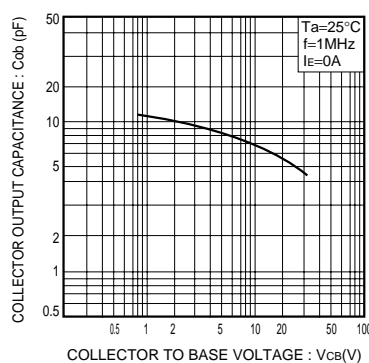


Fig.5 Collector output capacitance vs. collector-base voltage

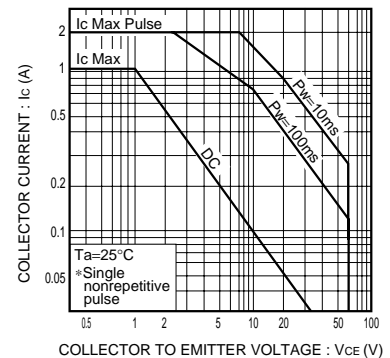


Fig.6 Safe operating area

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