

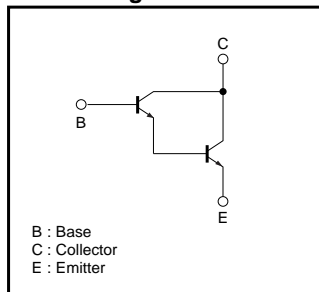
# Medium Power Transistor (60V, 1A)

## 2SD1834

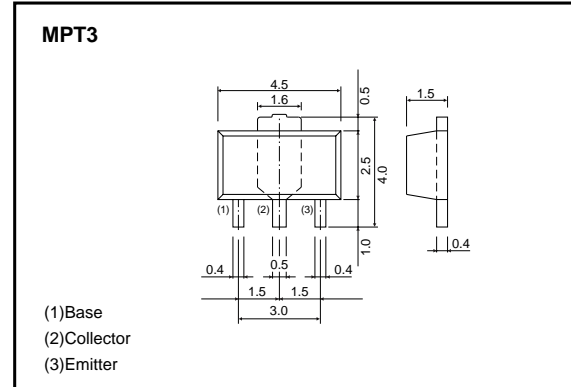
### ●Features

- 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	$\mu\text{A}$	$V_{CB}=60\text{V}$
Emitter cutoff current	$I_{EB0}$	-	-	1	$\mu\text{A}$	$V_{EB}=6\text{V}$
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

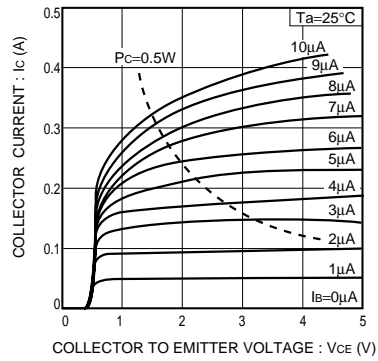


Fig.1 Ground emitter output characteristics

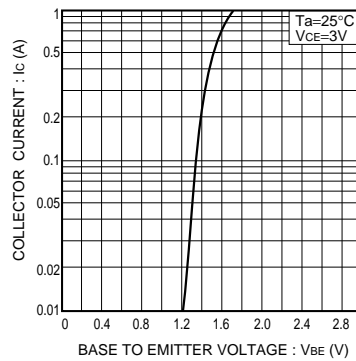


Fig.2 Ground emitter propagation characteristics

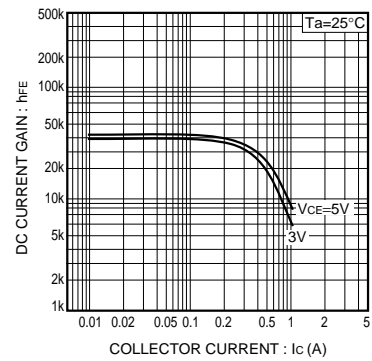


Fig.3 DC current gain vs. collector current

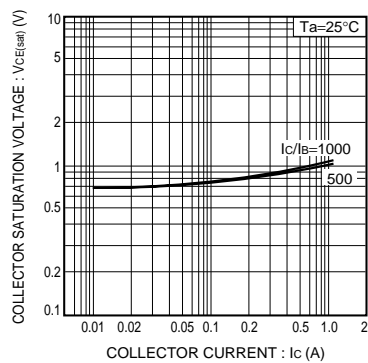


Fig.4 Collector-emitter saturation voltage vs. collector current

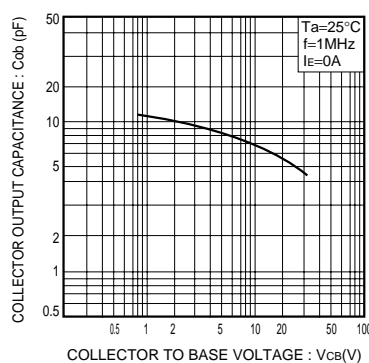


Fig.5 Collector output capacitance vs. collector-base voltage

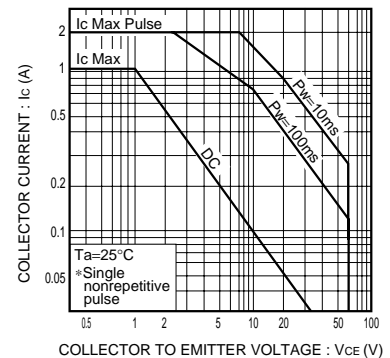


Fig.6 Safe operating area

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