

2SD1759 / 2SD1861

- 1) Darlington connection for high DC current gain.
- 2) Built-in $4k\Omega$ resistor between base and emitter.
- 3) Complements the 2SB1183 / 2SB1239.

C : Collector
B : Base
E : Emitter

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	40	V
Collector-emitter voltage		V_{CEr}	40	$V(R_{BE}=10k\Omega)$
Emitter-base voltage		V_{EB0}	5	V
Collector current		I_C	2	A(DC)
Collector power dissipation	2SD1861	P_C	1	W
			1	
	2SD1759		10	$W(T_C=25^{\circ}C)$
Junction temperature		T_J	150	$^{\circ}C$
Storage temperature		T_{stg}	-55 to +150	$^{\circ}C$

- (1) Base
- (2) Collector
- (3) Emitter

- (1) Emitter
- (2) Collector
- (3) Base

Type	2SD1759	2SD1861
Package	CPT3	ATV
hFE	1k to 200k	1k to
Code	TL	TV2
Basic ordering unit (pieces)	2500	2500

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	40	—	—	V	$I_C=50\mu A$
Collector-emitter breakdown voltage		BV_{CER}	40	—	—	V	$I_C=1mA$, $R_{BE}=10k\Omega$
Emitter-base breakdown voltage		BV_{EBO}	5	—	—	V	$I_E=50\mu A$
Collector cutoff current		I_{CBO}	—	—	1	μA	$V_{CB}=24V$
Emitter cutoff current		I_{EBO}	—	—	1	μA	$V_{EB}=4V$
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	0.8	1.5	V	$I_C/I_E=0.6A/1.2mA$
DC current transfer ratio	2SD1759	h_{FE}	1000	—	20000	—	$V_{CE}/I_C=3V/0.5A$
	2SD1861		1000	—	—	—	
Transition frequency		f_T	—	150	—	MHz	$V_{CE}=6V$, $I_E=-0.1A$, $f=100MHz$
Output capacitance		C_{ob}	—	11	—	pF	$V_{CB}=10V$, $I_E=0A$, $f=1MHz$

Transistors

●Electrical characteristics curves

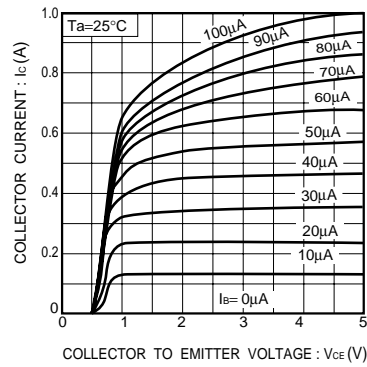


Fig.1 Ground emitter output characteristics

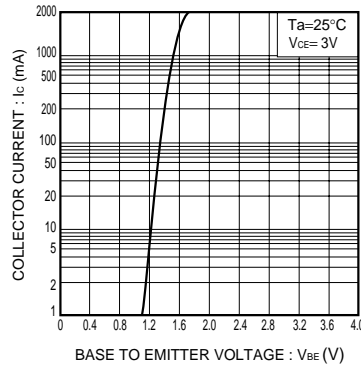


Fig.2 Ground emitter propagation characteristics

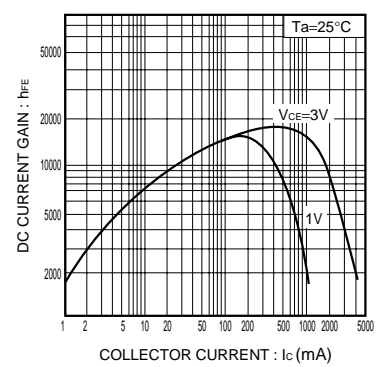


Fig.3 DC current gain vs. collector current

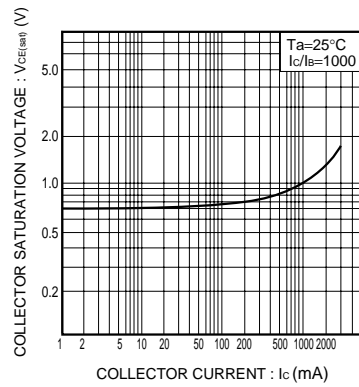


Fig.4 Collector-emitter saturation voltage vs. collector current

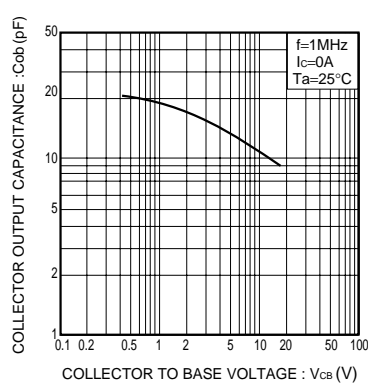


Fig.5 Collector output capacitance vs. collector-base voltage

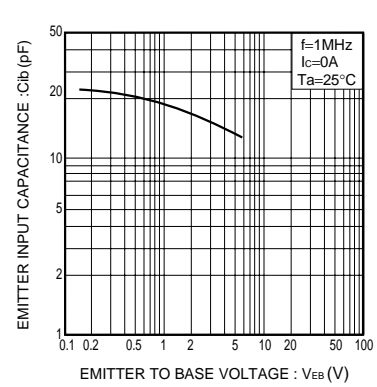


Fig.6 Emitter input capacitance vs. emitter-base voltage

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