

Power Transistor (15V, 0.5A)

2SD1757K

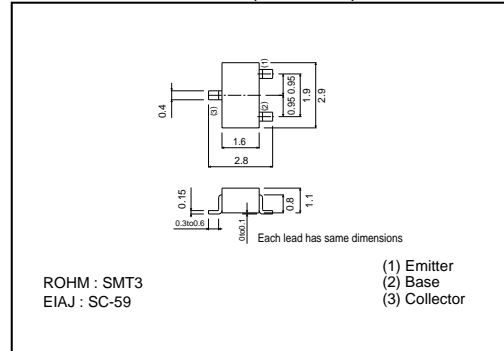
●Features

- 1) Low $V_{CE(sat)}$. (Typ.8mV at $I_C/I_B = 10/1mA$)
- 2) Optimal for muting.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	30	V
Collector-emitter voltage	V_{CE0}	15	V
Emitter-base voltage	V_{EB0}	6.5	V
Collector current	I_C	0.5	A
Collector power dissipation	P_C	0.2	W
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

●External dimensions (Unit : mm)



●Packaging specifications and hFE

Type	2SD1757K
Package	SMT3
hFE	QRS
Marking	AA*
Code	T146
Basic ordering unit (pieces)	3000

* Denotes hFE

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	30	—	—	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CE0}	15	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EB0}	6.5	—	—	V	$I_E=50\mu A$
Collector cutoff current	I_{CB0}	—	—	0.5	μA	$V_{CB}=20V$
Emitter cutoff current	I_{EB0}	—	—	0.5	μA	$V_{EB}=4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.1	0.4	V	$I_C/I_B=500mA/50mA$
DC current transfer ratio	hFE	120	—	560	—	$V_{CE}/I_C=3V/100mA$
Transition frequency	f_T	—	150	—	MHz	$V_{CE}=5V, I_E=-50mA, f=100MHz$
Output capacitance	C_{ob}	—	15	—	pF	$V_{CB}=10V, I_E=0A, f=1MHz$

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●Electrical characteristics curves

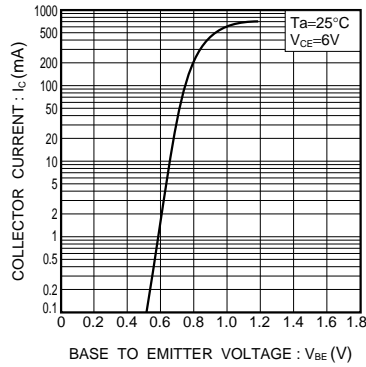


Fig.1 Ground emitter propagation characteristics

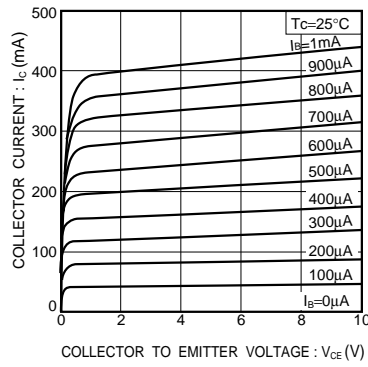


Fig.2 Ground emitter output characteristics

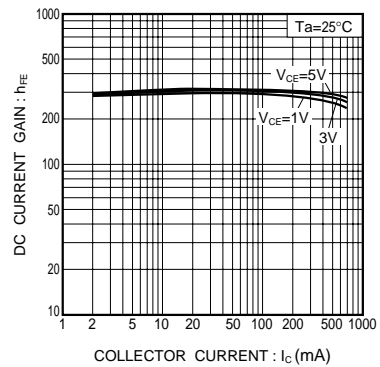


Fig.3 DC current gain vs. collector current (I)

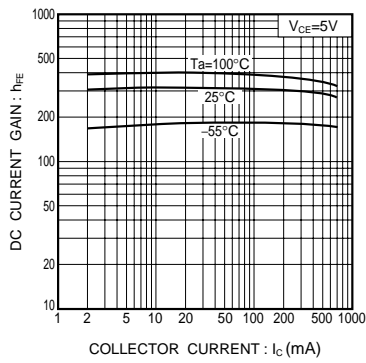


Fig.4 DC current gain vs. collector current (II)

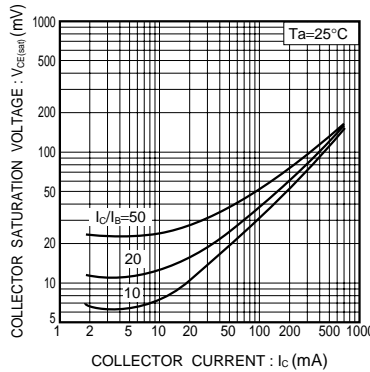


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

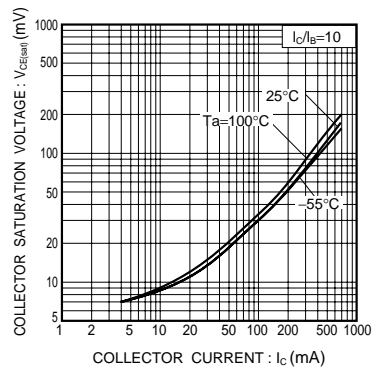


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

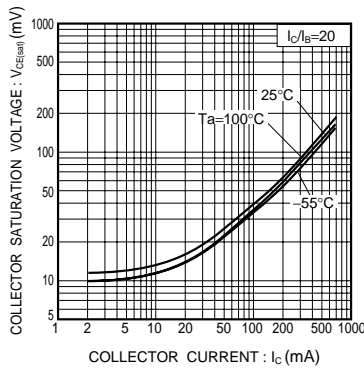


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

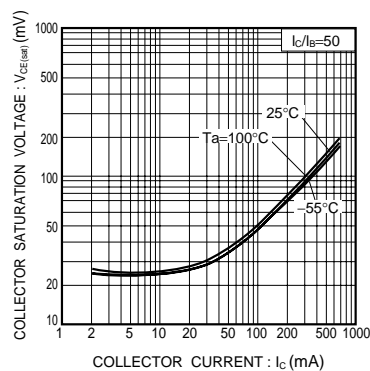


Fig.8 Collector-emitter saturation voltage vs. collector current (IV)

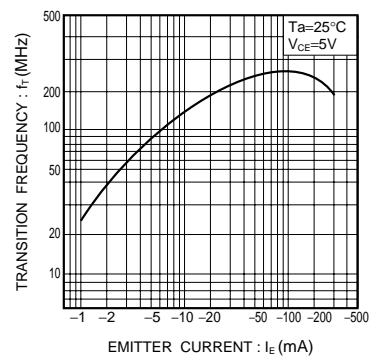


Fig.9 Gain bandwidth product vs. emitter current

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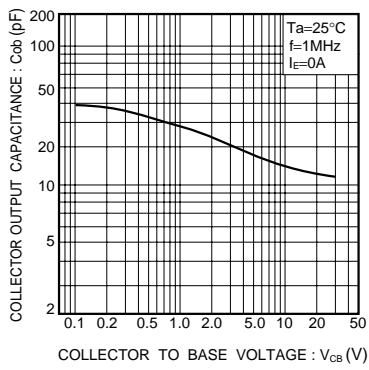


Fig.10 Collector output capacitance vs. collector-base voltage

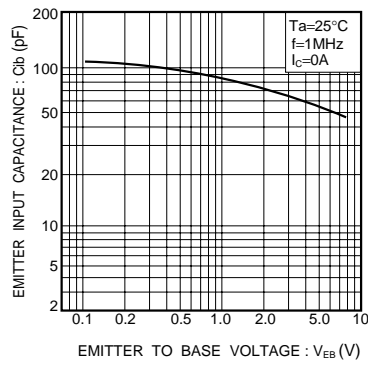


Fig.11 Emitter input capacitance vs. emitter-base voltage

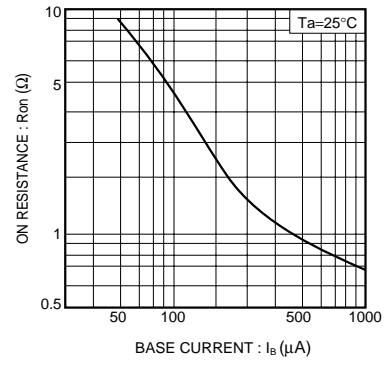


Fig.12 "ON" resistance vs. base current characteristics

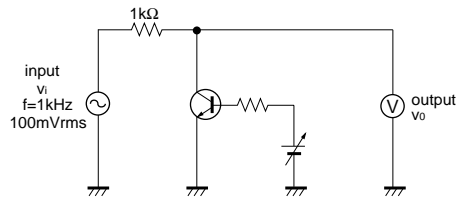


Fig.13 "ON" resistance measurement circuit

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