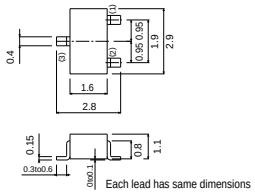
Power Transistor (15V, 0.5A)

2SD1757K

●Features

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

●External dimensions (Unit : mm)



ROHM : SMT3
EIAJ : SC-59

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

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	15	V
Emitter-base voltage	V_{EBO}	6.5	V
Collector current	I_C	0.5	A
Collector power dissipation	P_C	0.2	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

●Packaging specifications and h_{FE}

Type	2SD1757K
Package	SMT3
h_{FE}	QRS
Marking	AA*
Code	T146
Basic ordering unit (pieces)	3000

* Denotes h_{FE}

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	15	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	6.5	–	–	V	I_E=50μA
Collector cutoff current	I_{CBO}	–	–	0.5	μA	V_{CB}=20V
Emitter cutoff current	I_{EBO}	–	–	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	h_{FE}	120	–	560	–	V_{CE}/I_C=3V/100mA
Transition frequency	f_T	–	150	–	MHz	V_{CE}=5V , I_E=−50mA , f=100MHz
Output capacitance	Cob	–	15	–	pF	V_{CB}=10V , I_E=0A , f=1MHz

●Electrical characteristics curves

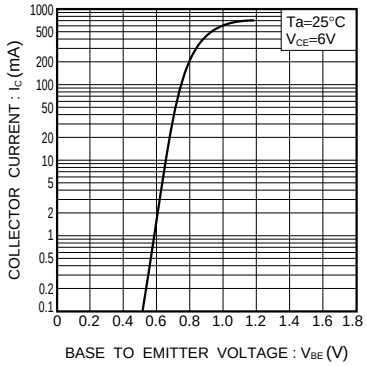


Fig.1 Ground emitter propagation characteristics

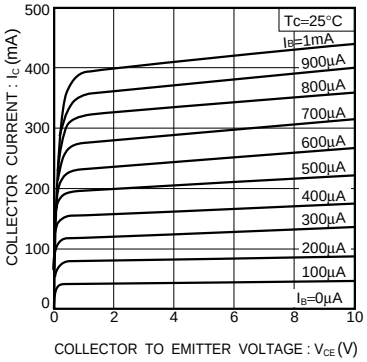


Fig.2 Ground emitter output characteristics

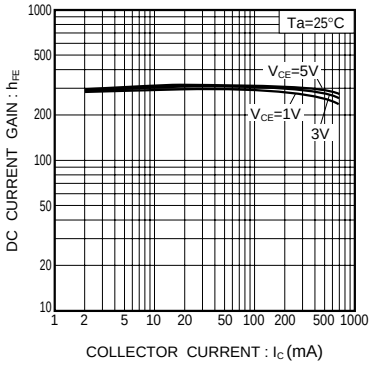


Fig.3 DC current gain vs. collector current (Ⅰ)

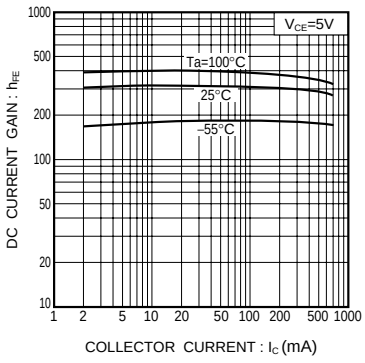


Fig.4 DC current gain vs. collector current(Ⅱ)

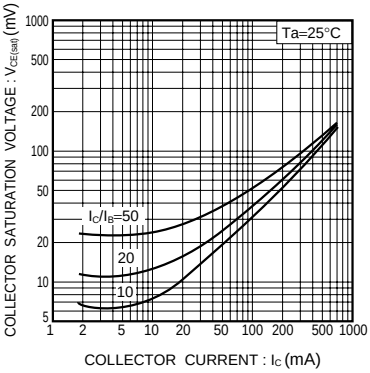


Fig.5 Collector-emitter saturation voltage vs. collector current (Ⅰ)

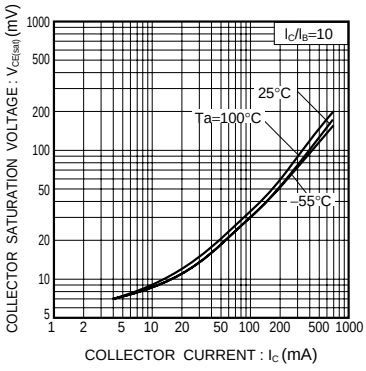


Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅱ)

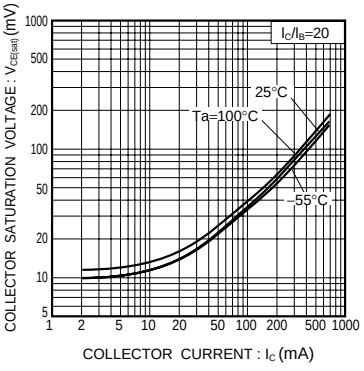


Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅲ)

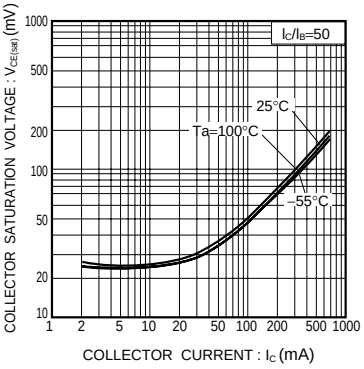


Fig.8 Collector-emitter saturation voltage vs. collector current (Ⅳ)

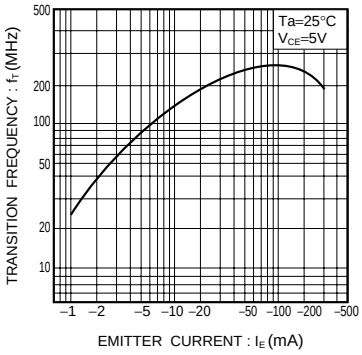


Fig.9 Gain bandwidth product vs. emitter current

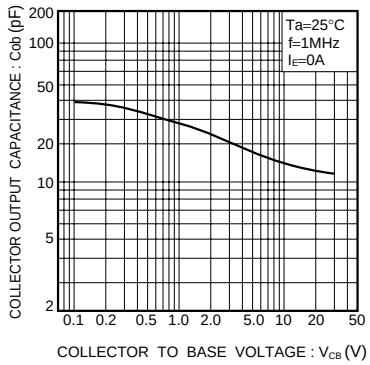


Fig.10 Collector output capacitance vs. collector-base voltage

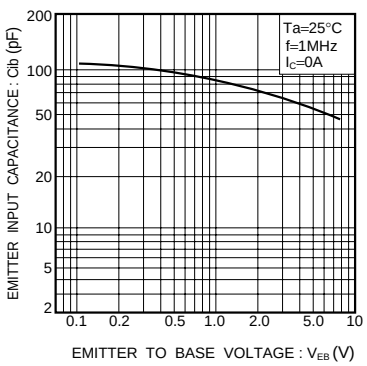


Fig.11 Emitter input capacitance vs. emitter-base voltage

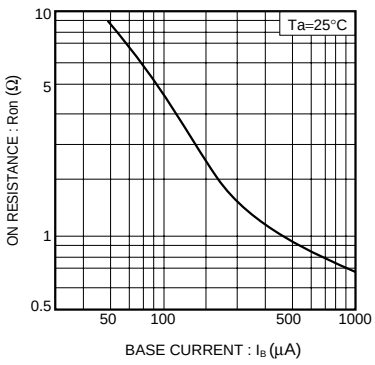


Fig.12 "ON" resistance vs. base current characteristics

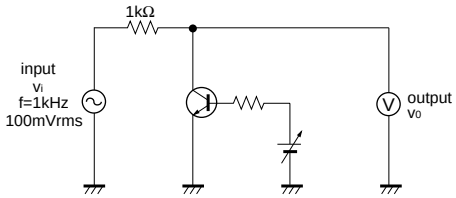


Fig.13 "ON" resistance measurement circuit

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