For Muting (20V, 0.3A)

2SD2704K / 2SD2705S

●Features

1) High DC current gain.
   h_{FE} = 820 to 2700
2) High emitter-base voltage.
   V_{EBO} = 25V (Min.)
3) Low Ron
   Ron= 0.7Ω (Typ.)

●Structure

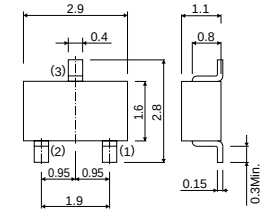
Epitaxial planar type
NPN silicon transistor

●Packaging specifications

Type	Package	Taping	
	Code	T146	TP
	Basic ordering unit (pieces)	3000	5000
2SD2704K		○	–
2SD2705S		–	○

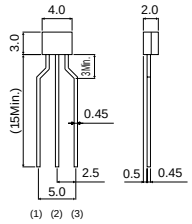
●External dimensions (Unit : mm)

2SD2704K



ROHM : SMT3
EIAJ : SC-59
Each lead has same dimensions
Abbreviated symbol : XL

2SD2705S



ROHM : SPT
EIAJ : SC-72
(1) Emitter
(2) Collector
(3) Base

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	50	V
Collector-emitter voltage		V_{CEO}	20	V
Emitter-base voltage		V_{EBO}	25	V
Collector current		I_C	0.3	A
Collector power dissipation	2SD2704K	P_C	0.2	W
	2SD2705S		0.3	
Junction temperature		Tj	150	°C
Storage temperature		Tstg	–55 to +150	°C

●**Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	–	–	V	I_C=10μA
Collector-emitter breakdown voltage	BV_{CEO}	20	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	25	–	–	V	I_E=10μA
Collector cutoff current	I_{CBO}	–	–	0.1	μA	V_{CB}=50V
Emitter cutoff current	I_{EBO}	–	–	0.1	μA	V_{EB}=25V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	50	100	mV	I_C/I_B=30mA/3mA
DC current transfer ratio	h_{FE}	820	–	2700	–	V_{CE}=2V, I_C=4mA
Transition frequency	f_T*	–	35	–	MHz	V_{CE}=6V, I_E= –4mA, f=10MHz
Output capacitance	Cob	–	3.9	–	pF	V_{CB}=10V, I_E=0A, f=1MHz
Output On-resistance	Ron	–	0.7	–	Ω	I_B=5mA, Vi=100mV(rms), f=1kHz

* Measured using pulse current

●**Electrical characteristic curves**

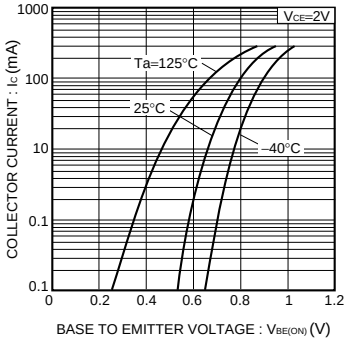


Fig.1 Grounded emitter propagation characteristics (I)

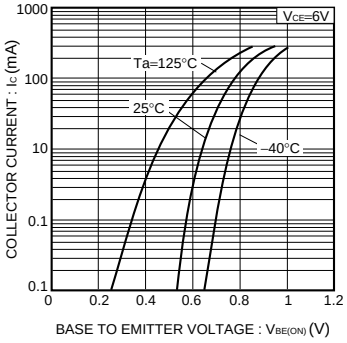


Fig.2 Grounded emitter propagation characteristics (II)

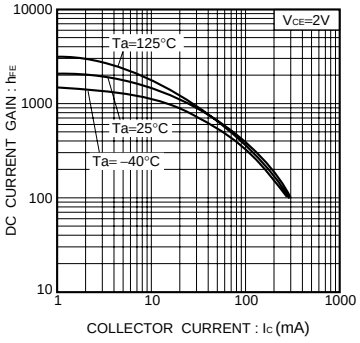


Fig.3 DC current gain vs. collector current (I)

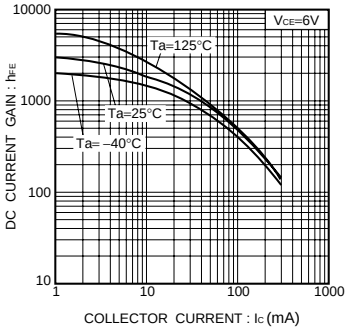


Fig.4 DC current gain vs. collector current (II)

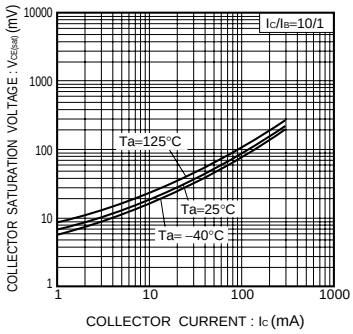


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

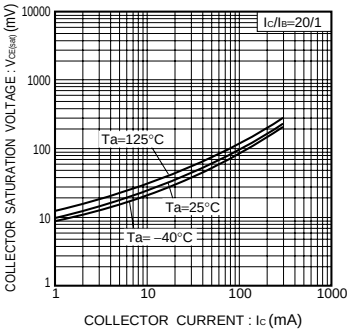


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

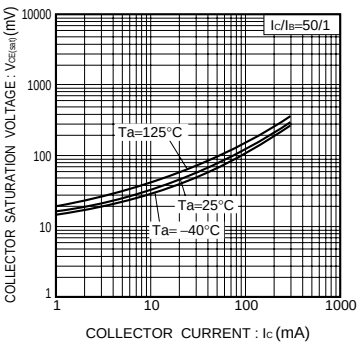


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

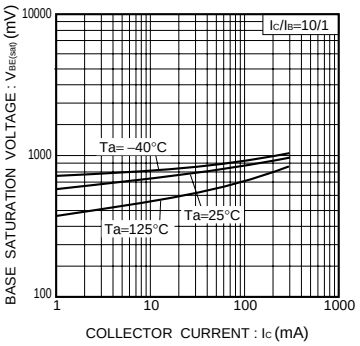


Fig.8 Base-emitter saturation voltage vs. collector current (I)

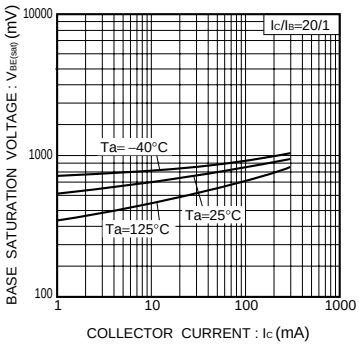


Fig.9 Base-emitter saturation voltage vs. collector current (II)

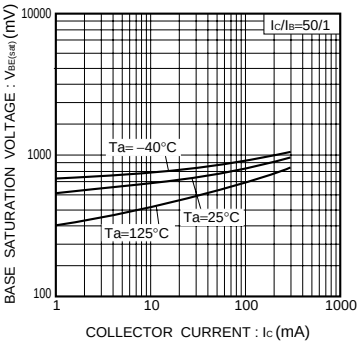


Fig.10 Base-emitter saturation voltage vs. collector current (III)

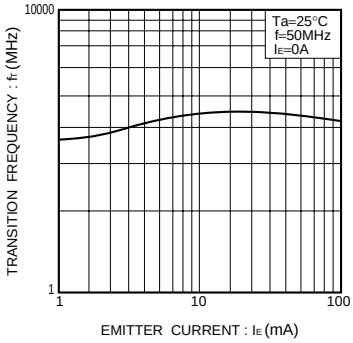


Fig.11 Gain bandwidth product vs. emitter current

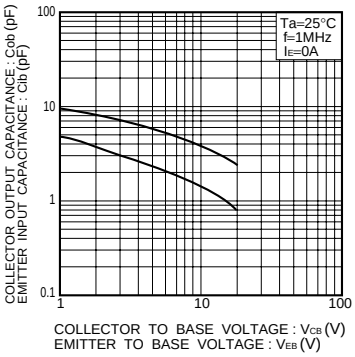


Fig.12 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

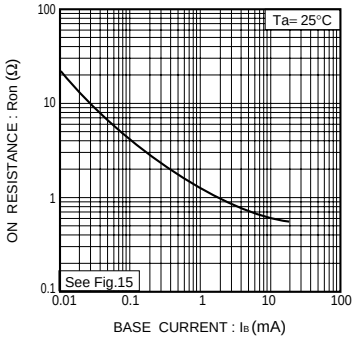


Fig.13 Output-on resistance vs. base current (I)

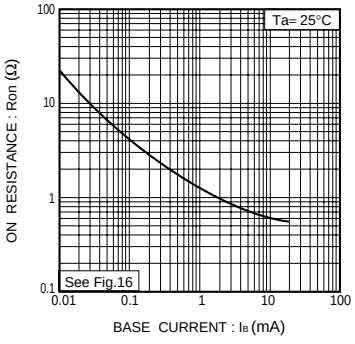


Fig.14 Output-on resistance vs. base current (II)

●**Ron measurement circuit**

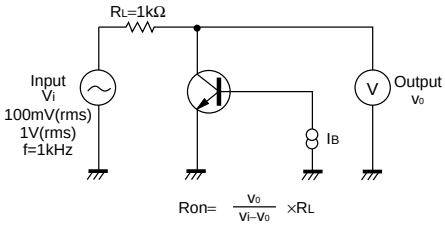


Fig.15 Ron measurement circuit (Ⅰ)

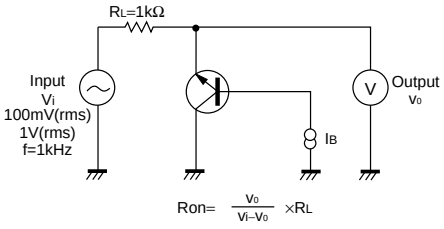


Fig.16 Ron measurement circuit (Ⅱ)

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