

General Purpose Transistor (50V, 0.15A)

2SD2707/2SD2654/2SD2351/2SD2226K/2SD2227S

●Features

- 1) High DC current gain.
- 2) High emitter-base voltage. ($V_{CE0}=12V$)
- 3) Low saturation voltage.
(Typ. $V_{CE(sat)}=0.3V$ at $I_C/I_B=50mA/5mA$)

●Absolute maximum ratings ($T_a=25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	12	V
Collector current	I_C	0.15	A (DC)
		0.2	A (Pulse)*
Collector power dissipation	P_C	0.15	W
		0.2	
		0.3	
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

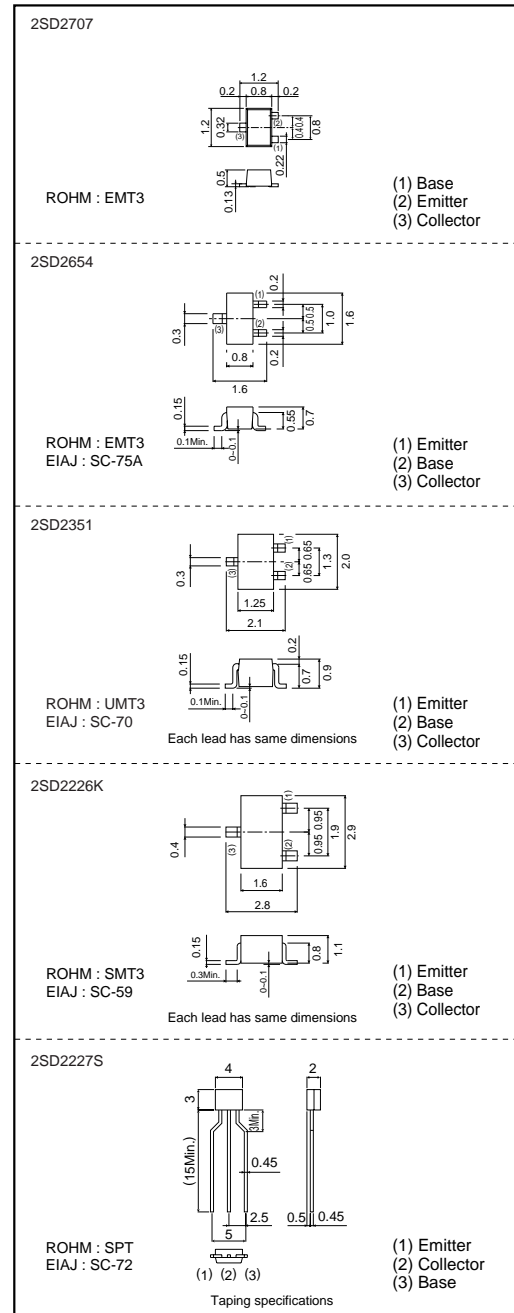
*Single pulse $P_w=100ms$

●Packaging specifications and h_{FE}

Type	2SD2707	2SD2654	2SD2351	2SD2226K	2SD2227S
package	VMT3	EMT3	UMT3	SMT3	SPT
h_{FE}	VW	VW	VW	VW	VW
Marking	BJ*	BJ*	BJ*	BJ*	-
Code	T2L	TL	T106	T146	TP
Basic ordering unit (pieces)	8000	3000	3000	3000	5000

* Denotes h_{FE}

●External dimensions (Unit : mm)



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●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	60	–	–	V	I _c =10μA
Collector-emitter breakdown voltage	BV _{CEO}	50	–	–	V	I _c =1mA
Emitter-base breakdown voltage	BV _{EB0}	12	–	–	V	I _E =10μA
Collector cutoff current	I _{cBO}	–	–	0.3	μA	V _{CB} =50V
Emitter cutoff current	I _{EBO}	–	–	0.3	μA	V _{EB} =12V
Collector-emitter saturation voltage	V _{CE(sat)}	–	–	0.3	V	I _c /I _B =50mA/5mA
DC current transfer ratio	h _{FE}	820	–	2700	–	V _{CE} /I _c =5V/1mA
Transition frequency	f _T	–	250	–	MHz	V _{CE} =5V, I _E =–10mA, f=100MHz
Output capacitance	C _{ob}	–	3.5	–	pF	V _{CB} =5V, I _E =0A, f=1MHz

* Measured using pulse current.

●Electrical characteristics curves

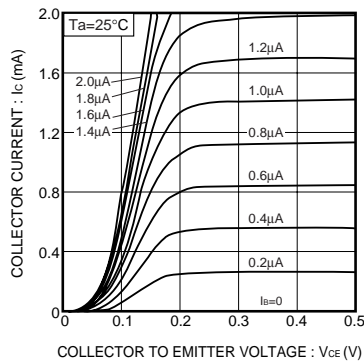


Fig.1 Grounded emitter output characteristics (I)

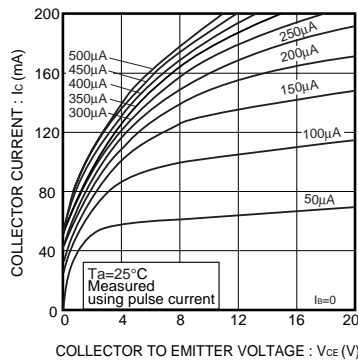


Fig.2 Grounded emitter output characteristics (II)

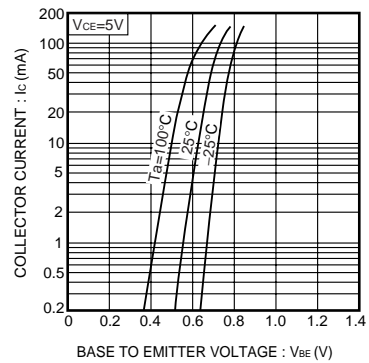


Fig.3 Grounded emitter propagation characteristics

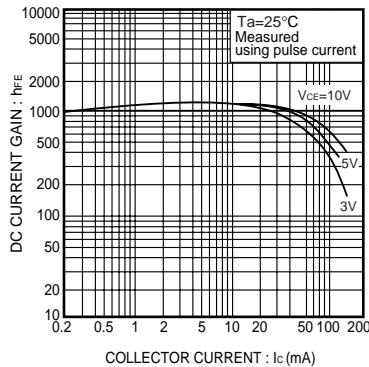


Fig.4 DC current gain vs. collector current (I)

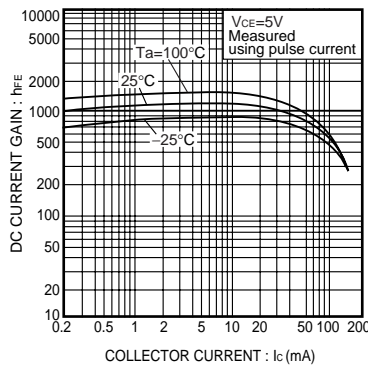


Fig.5 DC current gain vs. collector current (II)

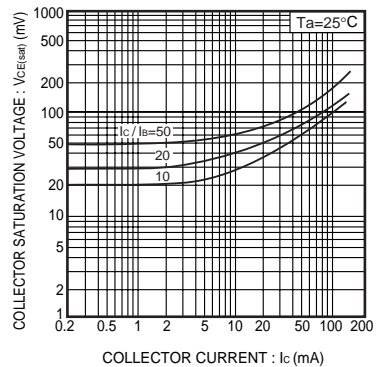


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

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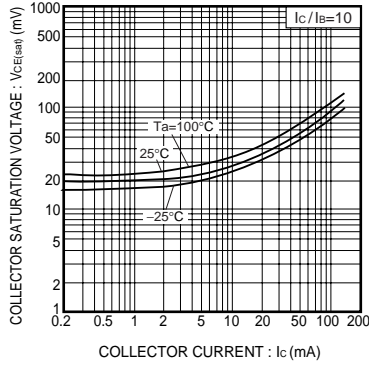


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

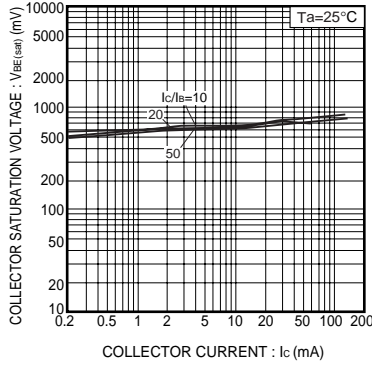


Fig.8 Base-emitter saturation voltage vs. collector current (I)

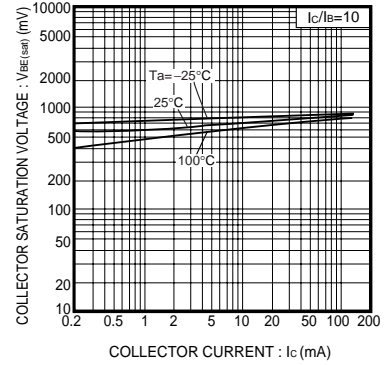


Fig.9 Base-emitter saturation voltage vs. collector current (II)

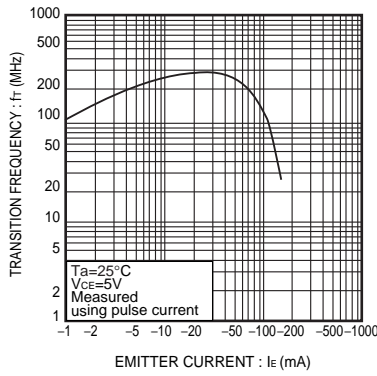


Fig.10 Gain bandwidth product vs. emitter current

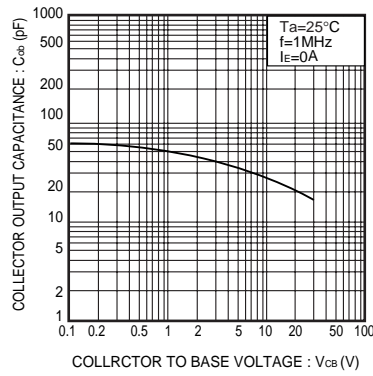


Fig.11 Collector output capacitance vs. collector-base voltage

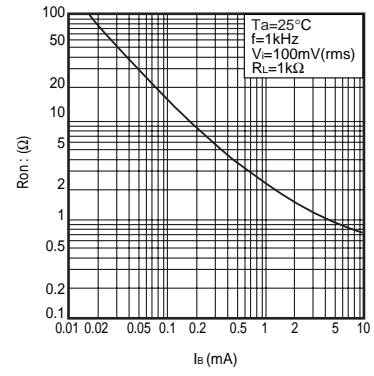


Fig.12 Output on resistance vs. base current

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