Transistors

Low V_{CE(sat)} transistor (strobe flash)

2SD2098 / 2SD2118 / 2SD2097
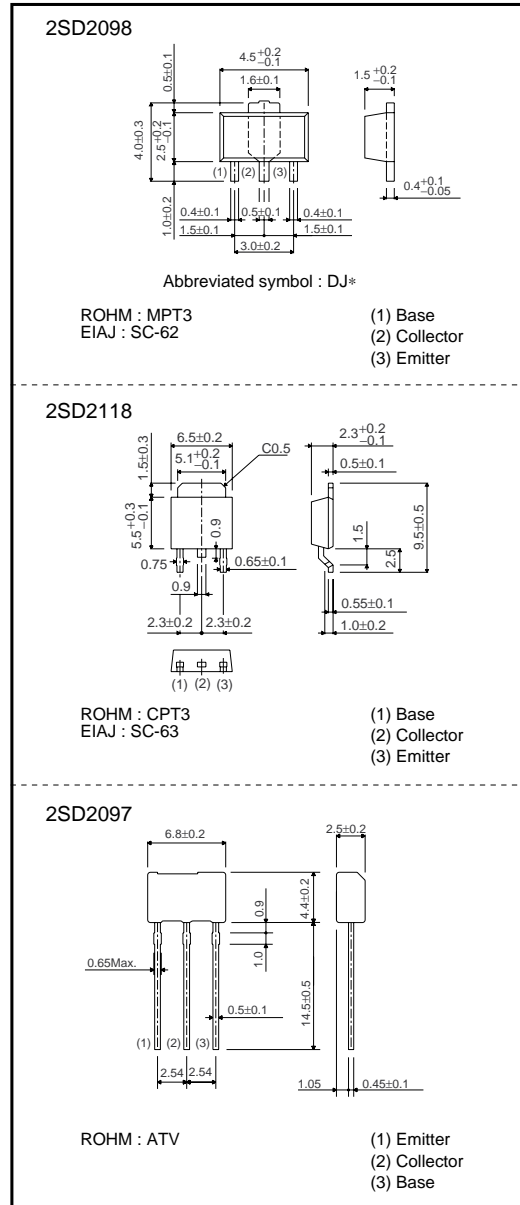
●**Features**

1) Low V$_{CE(sat)}$.

  V$_{CE(sat)}$ = 0.25V (Typ.)

  (I$_C$/I$_B$ = 4A / 0.1A)

2) Excellent DC current gain characteristics.

3) Complements the 2SB1386 / 2SB1412 / 2SB1326.

●**Structure**

Epitaxial planar type
NPN silicon transistor

●**External dimensions** (Unit : mm)

2SD2098

Abbreviated symbol : DJ∗

ROHM : MPT3
EIAJ : SC-62

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

2SD2118

ROHM : CPT3
EIAJ : SC-63

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

2SD2097

ROHM : ATV

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

∗ Denotes h$_{FE}$

ROHM

Transistors

●**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}	6	V
Collector current		I_C	5	A(DC)
		I_{CP}	10	A(Pulse) *1
Collector power dissipation	2SD2098	P_C	0.5	W *2
			2	
	2SD2118		1	
			10	W(Tc=25°C)
	2SD2097		1	W *3
Junction temperature		Tj	150	°C
Storage temperature		Tstg	−55 to +150	°C

∗1 Single pulse Pw=10ms
∗2 When mounted on a 40×40×0.7 mm ceramic board.
∗3 Printed circuit board glass epoxy board, 1.6 mm thick with copper plating 100mm² or larger.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	20	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	6	–	–	V	I_E=50μA
Collector cutoff current	I_{CBO}	–	–	0.5	μA	V_{CB}=40V
Emitter cutoff current	I_{EBO}	–	–	0.5	μA	V_{EB}=5V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	0.3	1.0	V	I_C/I_B=4A/0.1A ∗
DC current transfer ratio	h_{FE}	120	–	390	–	V_{CE}=2V, I_C=0.5A ∗
Transition frequency	f_T	–	150	–	MHz	V_{CE}=6V, I_E=−50mA, f=100MHz
Output capacitance	Cob	–	35	–	pF	V_{CE}=20V, I_E=0A, f=1MHz

∗ Measured using pulse current.

●**Packaging specifications and h$_{FE}$**

Type	h$_{FE}$	Package	Taping		
		Code	T100	TL	TV2
		Basic ordering unit (pieces)	1000	2500	2500
2SD2098	QR		◯	–	–
2SD2118	QR		–	◯	–
2SD2097	QR		–	–	◯

h$_{FE}$ values are classified as follows :

Item	Q	R
h$_{FE}$	120 to 270	180 to 390

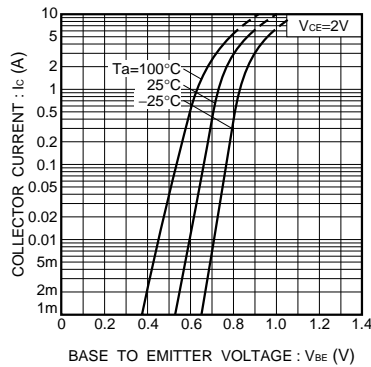●**Electrical characteristic curves**

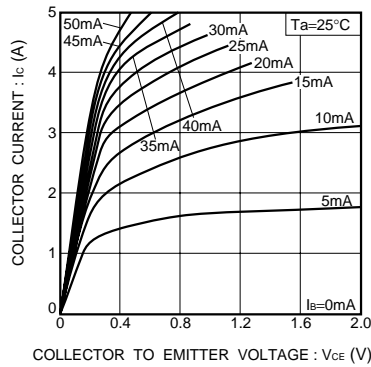Fig.1 Grounded emitter propagation characteristics

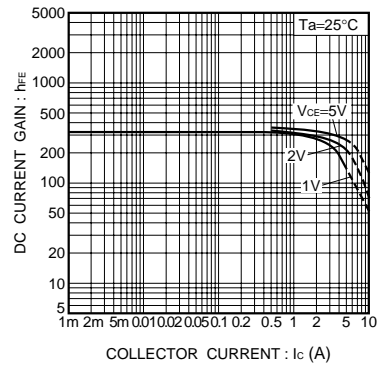Fig.2 Grounded emitter output characteristics

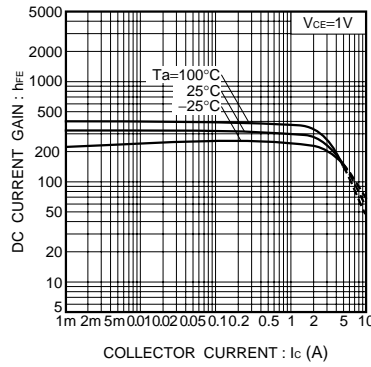Fig.3 DC current gain vs. collector current (I)

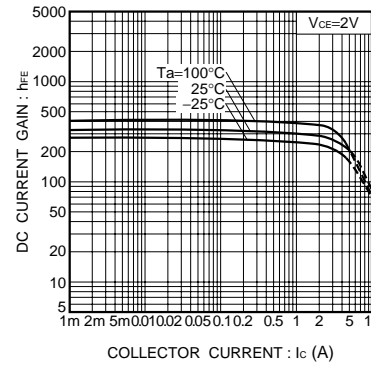Fig.4 DC current gain vs. collector current (II)

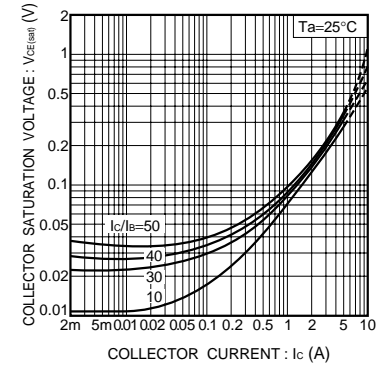Fig.5 DC current gain vs. collector current (III)

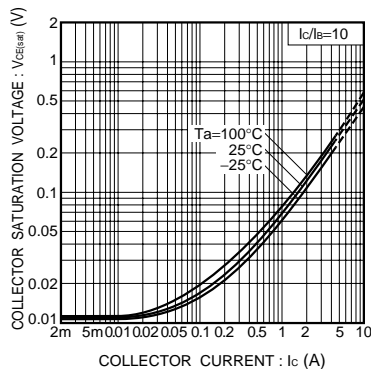Fig.6 Collector-emitter saturation voltage vs. collector current (I)

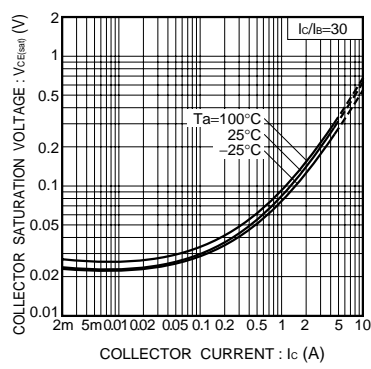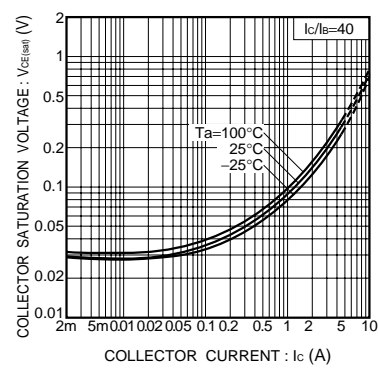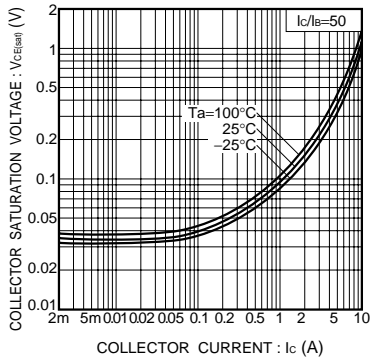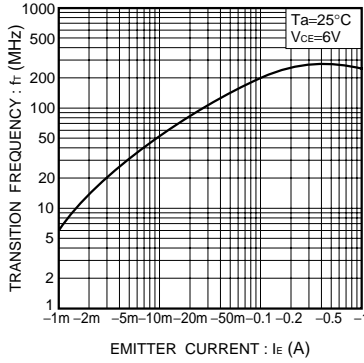Fig.7 Collector-emitter saturation voltage vs. collector current (II)

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

Fig.9 Collector-emitter saturation voltage vs. collector current (IV)

Fig.10 Collector-emitter saturation voltage vs. collector current (V)

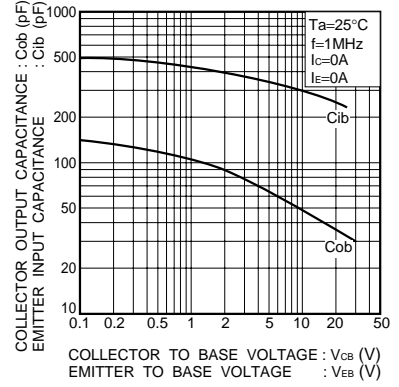Fig.11 Gain bandwidth product vs. emitter current

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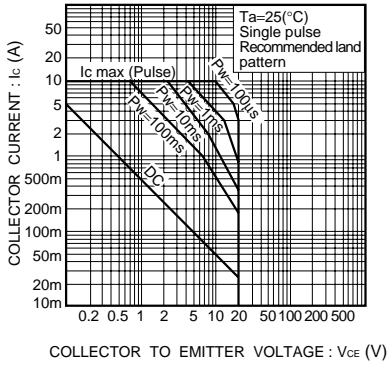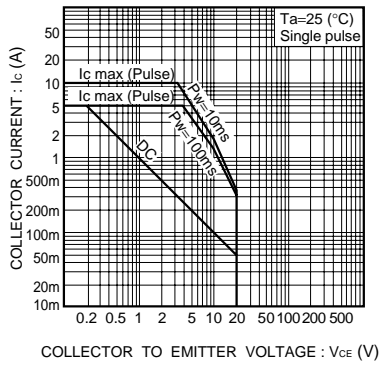

Fig.13 Safe operating area (2SD2098)

Fig.14 Safe operating area (2SD2118)

ROHM

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.