

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

2SD2118

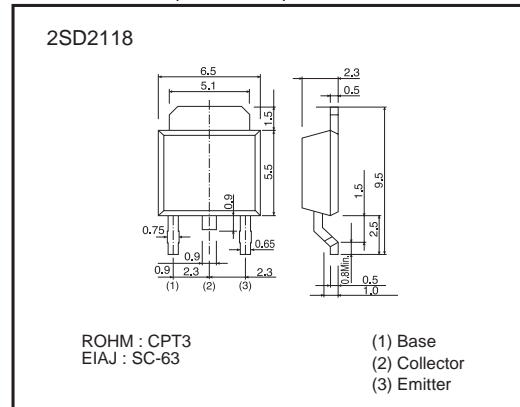
●Features

- 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 2SB1412.

●Structure

Epitaxial planar type  
NPN silicon transistor

●Dimensions (Unit : mm)



\* Denotes hFE

●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	2SD2118 $P_C$	1	W
		10	W(Tc=25°C)
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

\*1 Single pulse  $P_w=10ms$

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	50	-	-	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	20	-	-	V	$I_C=1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	6	-	-	V	$I_E=50\mu A$
Collector cutoff current	$I_{CBO}$	-	-	0.5	$\mu A$	$V_{CB}=40V$
Emitter cutoff current	$I_{EBO}$	-	-	0.5	$\mu A$	$V_{EB}=5V$
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	$C_{ob}$	-	35	-	pF	$V_{CE}=20V, I_E=0A, f=1MHz$

\* Measured using pulse current.

●Packaging specifications and hFE

Type	hFE	Package	Taping
		Code	TL
		Basic ordering unit (pieces)	2500
2SD2118	QR		○

hFE values are classified as follows :

Item	Q	R
hFE	120 to 270	180 to 390

●Electrical characteristic curves

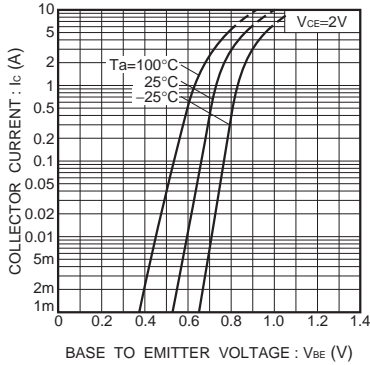


Fig.1 Grounded emitter propagation characteristics

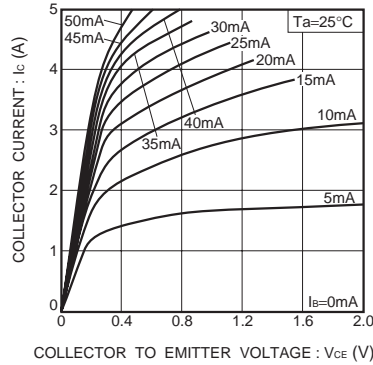


Fig.2 Grounded emitter output characteristics

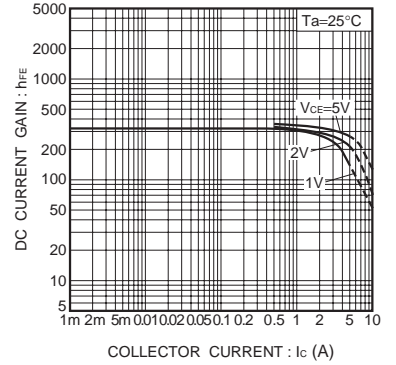


Fig.3 DC current gain vs. collector current ( I )

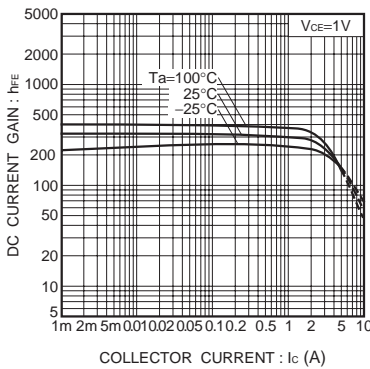


Fig.4 DC current gain vs. collector current ( II )

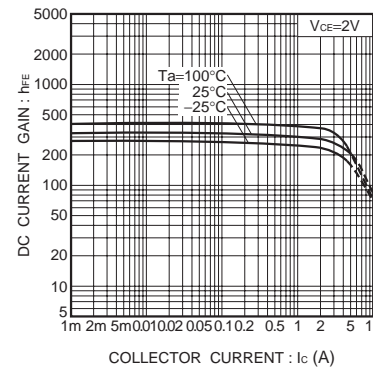


Fig.5 DC current gain vs. collector current ( III )

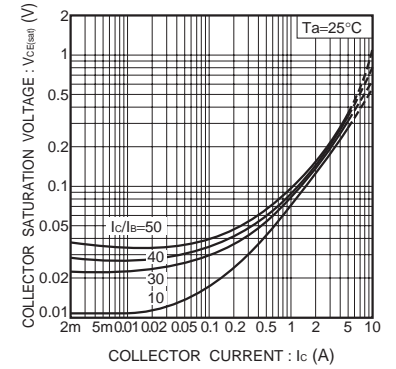


Fig.6 Collector-emitter saturation voltage vs. collector current ( I )

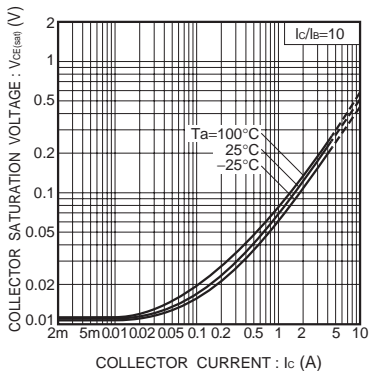


Fig.7 Collector-emitter saturation voltage vs. collector current ( II )

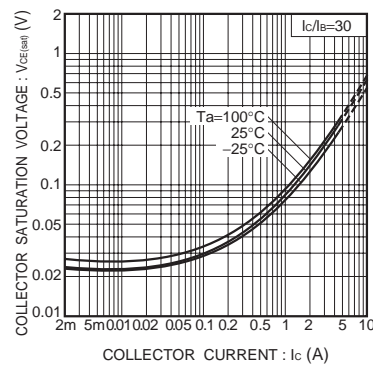


Fig.8 Collector-emitter saturation voltage vs. collector current ( III )

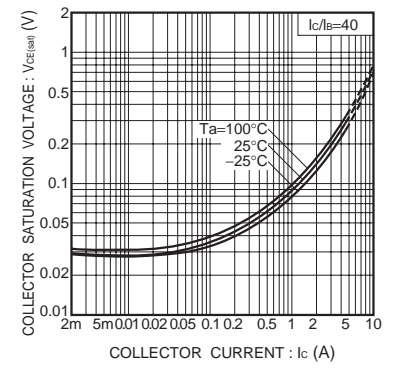


Fig.9 Collector-emitter saturation voltage vs. collector current ( IV )

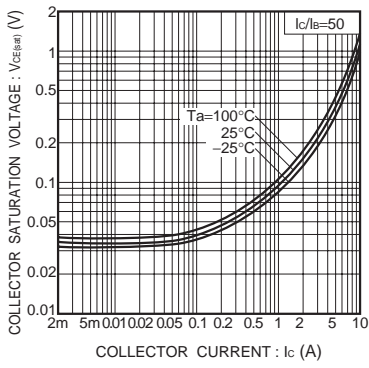


Fig.10 Collector-emitter saturation voltage vs. collector current (V)

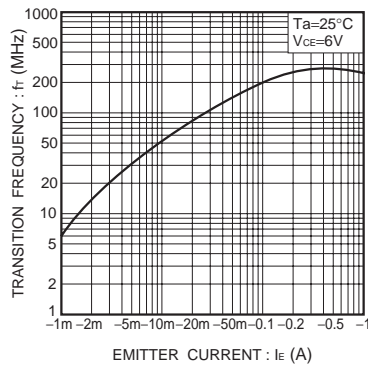


Fig.11 Gain bandwidth product vs. emitter current

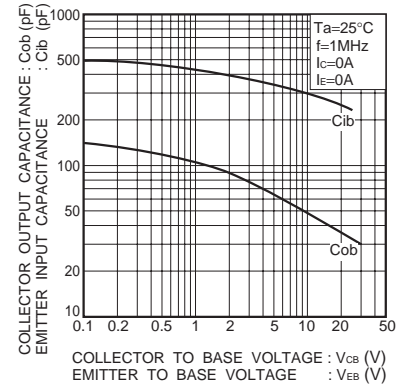


Fig.12 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

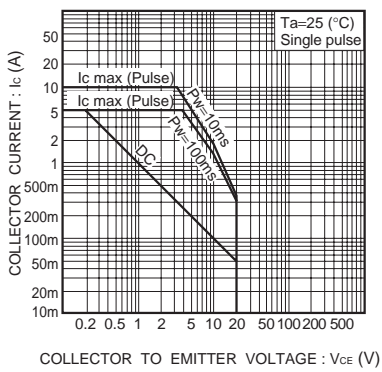


Fig.13 Safe operating area (2SD2118)

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