Low frequency transistor

2SA2018 / 2SA2030 / 2SA2119K

The transistor of 500mA class which went only into 2125 size conventionally was attained in 1608 sizes or 1208 sizes.

●Applications

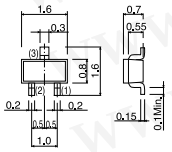
For switching, for muting.

●Features

1) A collector current is large.
2) Collector saturation voltage is low.
   $V_{CE\,(sat)} \leq 250mA$
   At $I_C = -200mA / I_B = -10mA$

●Dimensions (Unit : mm)

2SA2018



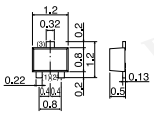
Each lead has same dimensions

ROHM : EMT3
EIAJ : SC-75A
JEDEC : SOT-416

Abbreviated symbol : BW

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

2SA2030



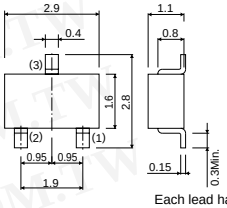
Each lead has same dimensions

ROHM : VMT3

Abbreviated symbol : BW

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

2SA2119K



Each lead has same dimensions

ROHM : SMT3
EIAJ : SC-59
JEDEC : SOT-346

Abbreviated symbol : BW

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

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol		Limits	Unit
Collector-base voltage	V_{CBO}		−15	V
Collector-emitter voltage	V_{CEO}		−12	V
Emitter-base voltage	V_{EBO}		−6	V
Collector current	I_C		−500	mA
	I_{CP}		−1	A *
Collector power dissipation	P_C	VMT3 EMT3	150	mW
		SMT3	200	
Junction temperature	Tj		150	°C
Storage temperature	Tstg		−55 to +150	°C

*Single pulse, Pw=1ms

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−15	–	–	V	I_C= −10μA
Collector-emitter breakdown voltage	BV_{CEO}	−12	–	–	V	I_C= −1mA
Emitter-base breakdown voltage	BV_{EBO}	−6	–	–	V	I_E= −10μA
Collector cutoff current	I_{CBO}	–	–	−100	nA	V_{CB}= −15V
Emitter cutoff current	I_{EBO}	–	–	−100	nA	V_{EB}= −6V
DC current transfer ratio	h_{FE}	270	–	680	–	V_{CE}= −2V / I_C= −10mA
Collector-emitter saturation voltage	$V_{CE\,(sat)}$	–	−100	−250	mV	I_C= −200mA / I_B= −10mA
Transition frequency	f_T	–	260	–	MHz	V_{CE}= −2V, I_E=10mA, f_T=100MHz
Output capacitance	Cob	–	6.5	–	pF	V_{CB}= −10V, I_E=0A, f=1MHz

●Packaging specifications and h_{FE}

Type		Package name	Taping		
		Code	T146	TL	T2L
	h_{FE}	Basic ordering unit (pieces)	3000	3000	8000
2SA2119K			○	–	–
2SA2018			–	○	–
2SA2030			–	–	○

●Electrical characteristic curves

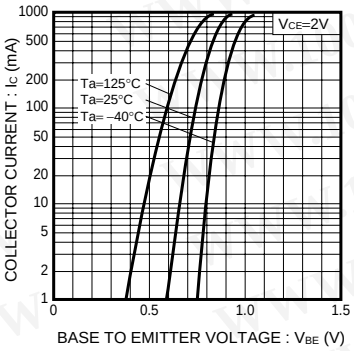


Fig.1 Grounded Emitter Propagation Characteristics

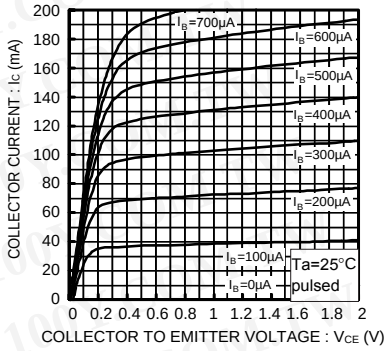


Fig.2 Typical Output Characteristics

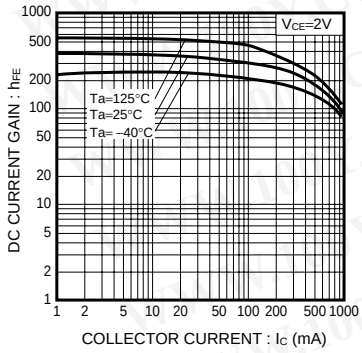


Fig.3 DC Current Gain vs. Collector Current

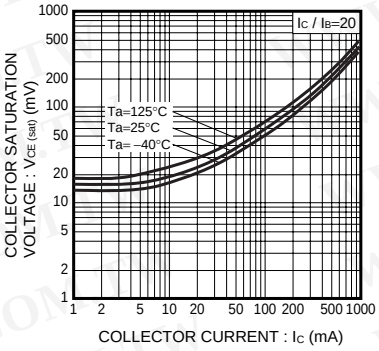


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (I)

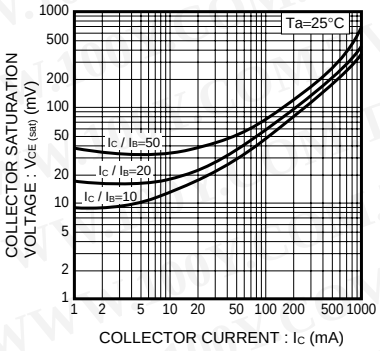


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (II)

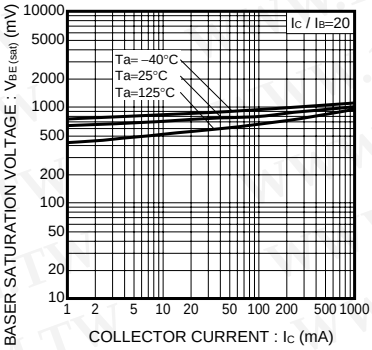


Fig.6 Base-Emitter Saturation Voltage vs.Collecter Current

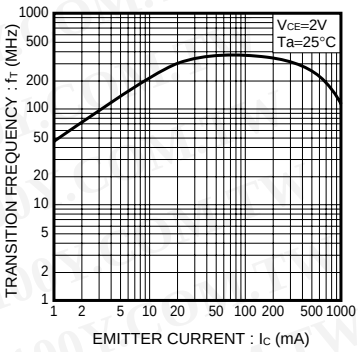


Fig.7 Gain Bandwidth Product vs. Emitter Current

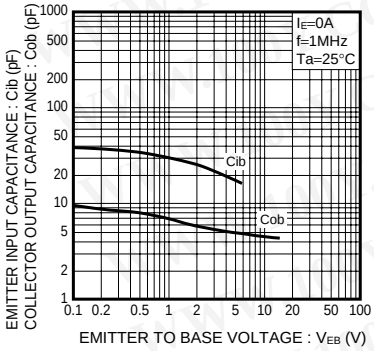


Fig.8 Collector Output Capacitance vs. Collector-Base Voltage
Emitter Input Capacitance vs. Emitter-Base Voltage

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