DMC904F1

Silicon NPN epitaxial planar type

For high frequency amplification

■ Features

- High forward current transfer ratio h_{FE} with excellent linearity
- High transition frequency f_T
- Contributes to miniaturization of sets, reduction of component count.
- Eco-friendly Halogen-free package

■ Basic Part Number

DSC2G03 + DSC2001 (Individual)

■ Packaging

DMC904F10R Embossed type (Thermo-compression sealing): 8000 pcs / reel (standard)

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter		Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	V_{CBO}	30	V
	Collector-emitter voltage (Base open)	V_{CEO}	20	V
	Emitter-base voltage (Collector open)	V_{EBO}	3	V
	Collector current	I_C	50	mA
Tr2	Collector-base voltage (Emitter open)	V_{CBO}	60	V
	Collector-emitter voltage (Base open)	V_{CEO}	50	V
	Emitter-base voltage (Collector open)	V_{EBO}	7	V
	Collector current	I_C	100	mA
	Peak collector current	I_{CP}	200	mA
Overall	Total power dissipation	P_T	125	mW
	Junction temperature	T_j	150	°C
	Storage temperature	T_{stg}	−55 to +150	°C

■ Package

- Code

  SSMini6-F3-B

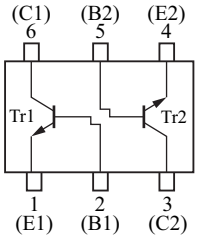
  Package dimension clicks here.→ Click!

- Pin Name

  1: Emitter (Tr1) 4: Emitter (Tr2)
  2: Base (Tr1) 5: Base (Tr2)
  3: Collector (Tr2) 6: Collector (Tr1)

■ Marking Symbol: D4

■ Internal Connection



■ Electrical Characteristics T_a = 25°C±3°C

• Tr1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 100 µA, I_E = 0	30			V
Emitter-base voltage (Collector open)	V_{EBO}	I_E = 10 µA, I_C = 0	3			V
Base-emitter voltage	V_{BE}	V_{CE} = 10 V, I_C = 2 mA		740		mV
Forward current transfer ratio	h_{FE}	V_{CE} = 10 V, I_C = 2 mA	25		250	—
Transition frequency	f_T	V_{CE} = 10 V, I_C = 15 mA	800		1600	MHz
Reverse transfer capacitance (Common emitter)	C_{re}	V_{CE} = 10 V, I_C = 1 mA, f = 10.7 MHz		0.9		pF
Reverse transfer capacitance (Common base)	C_{rb}	V_{CB} = 6 V, I_C = 0, f = 1 MHz		0.7		pF
Power gain	PG	V_{CE} = 10 V, I_C = 1 mA, f = 200 MHz		20		dB

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

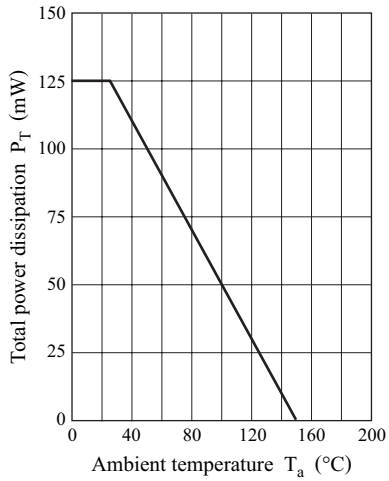
• Tr2

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 10 µA, I_E = 0	60			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 2 mA, I_B = 0	50			V
Emitter-base voltage (Collector open)	V_{EBO}	I_E = 10 µA, I_C = 0	7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 20 V, I_E = 0			0.1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 10 V, I_B = 0			100	µA
Forward current transfer ratio	h_{FE}	V_{CE} = 10 V, I_C = 2 mA	210		460	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 100 mA, I_B = 10 mA		0.13	0.3	V
Transition frequency	f_T	V_{CE} = 10 V, I_C = 2 mA		150		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		1.5		pF

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

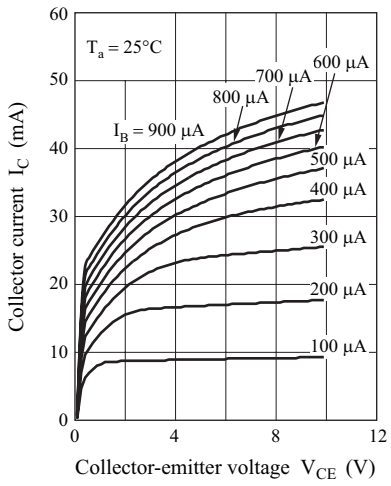
Common characteristics chart

P_T — T_a

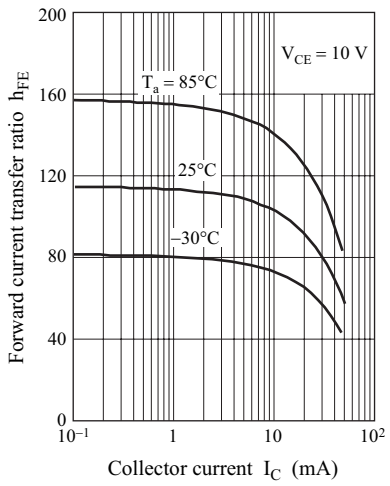


Characteristics charts of Tr1

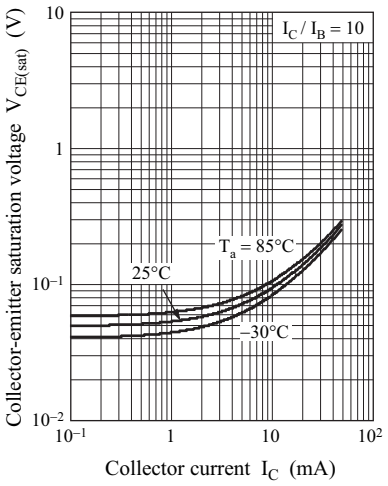
I_C — V_{CE}



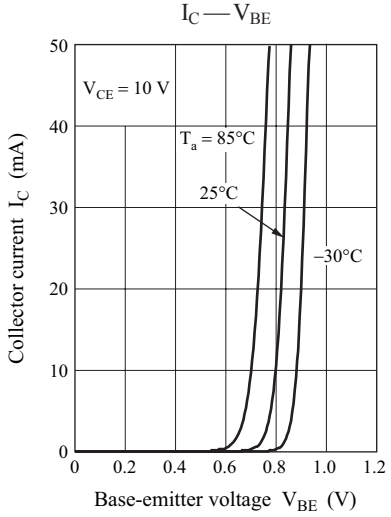
h_{FE} — I_C



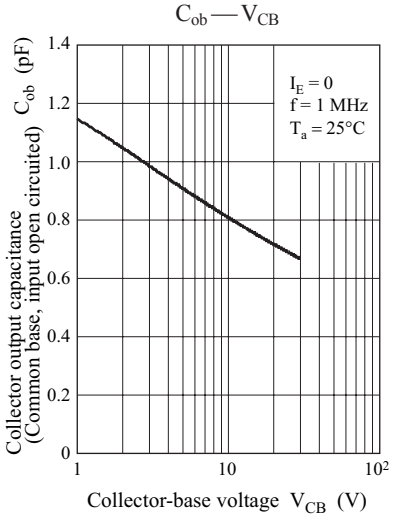
$V_{CE(sat)}$ — I_C



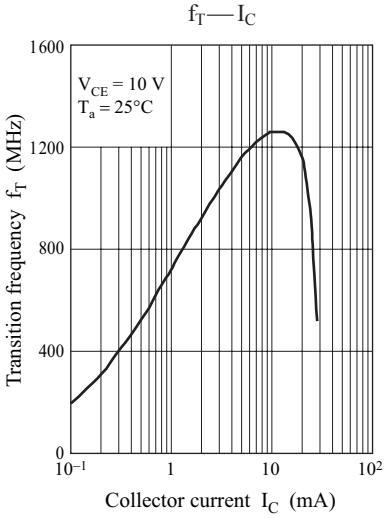
I_C — V_{BE}



C_{ob} — V_{CB}

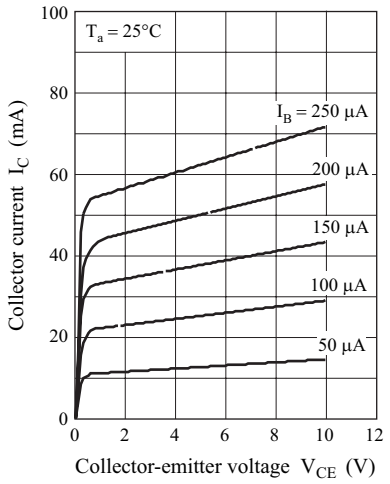


f_T — I_C

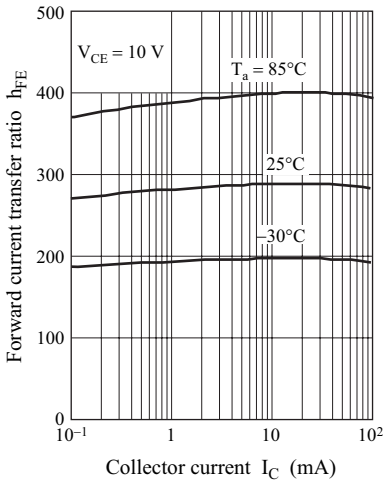


Characteristics charts of Tr2

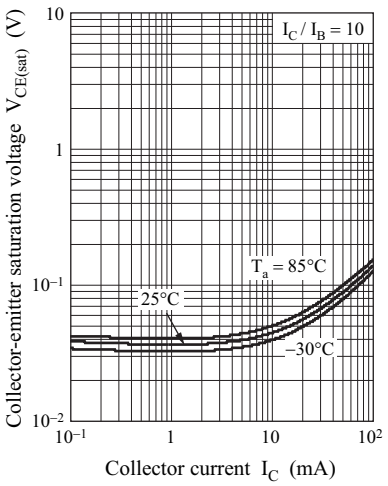
I_C — V_{CE}



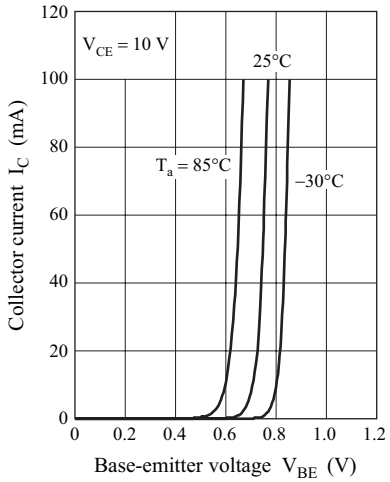
h_{FE} — I_C



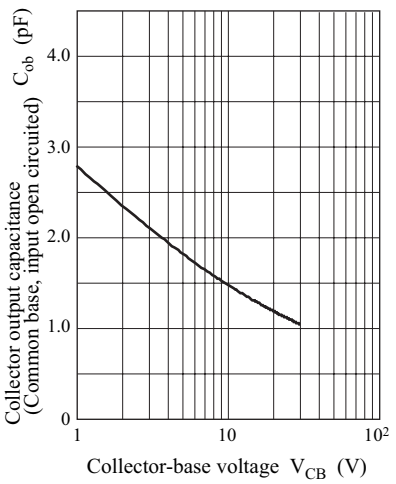
$V_{CE(sat)}$ — I_C



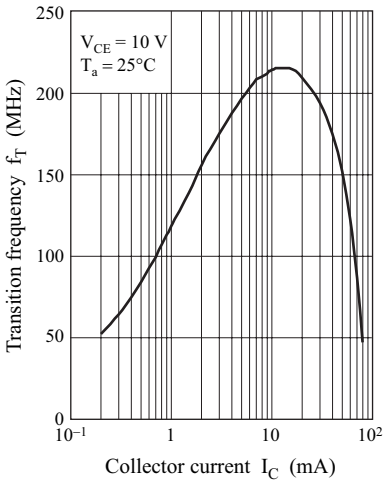
I_C — V_{BE}



C_{ob} — V_{CB}



f_T — I_C



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